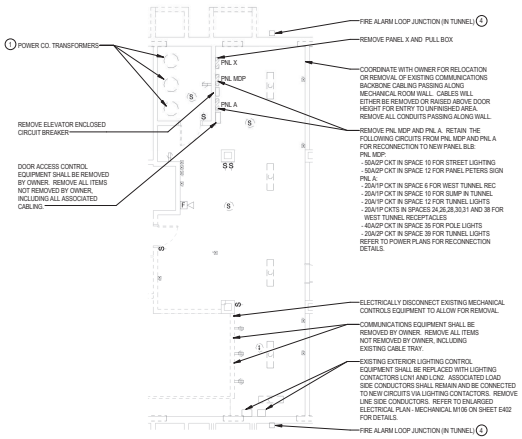
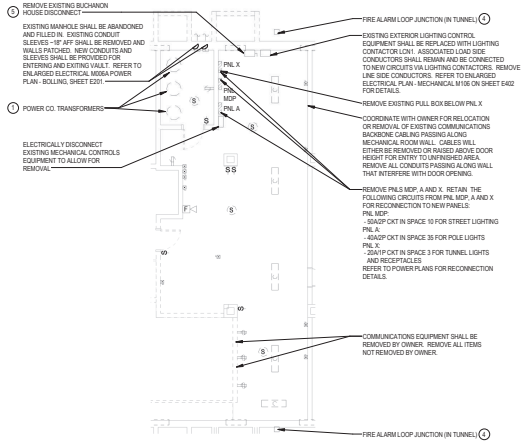


BASEMENT MECHANICAL ROOM ELECTRICAL DEMOLITION PLAN - POCAHONTAS

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

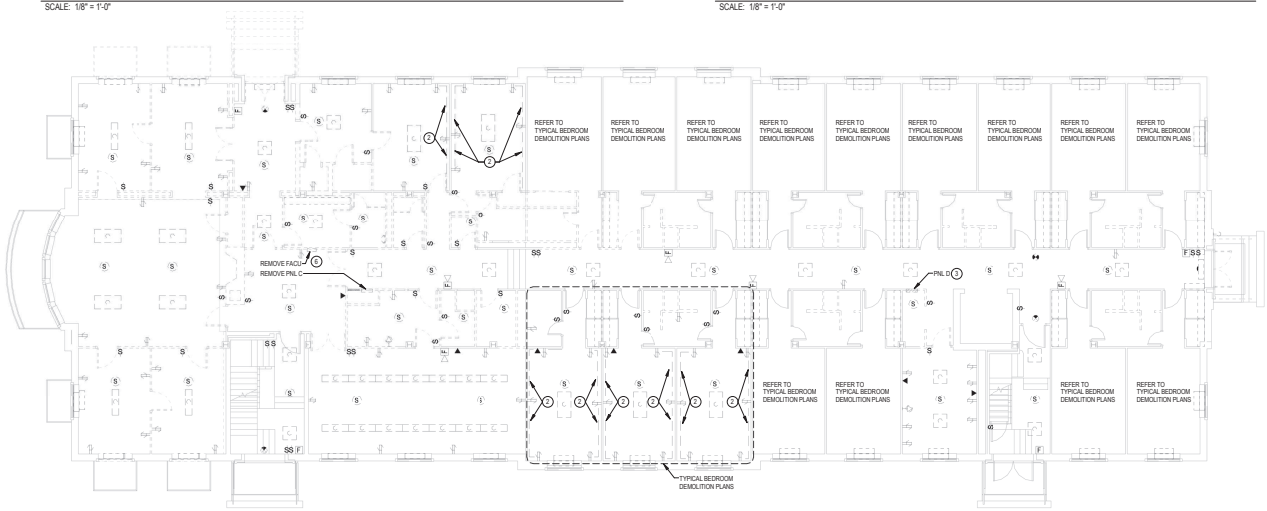


BASEMENT MECHANICAL ROOM ELECTRICAL DEMOLITION PLAN - BOLLING

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

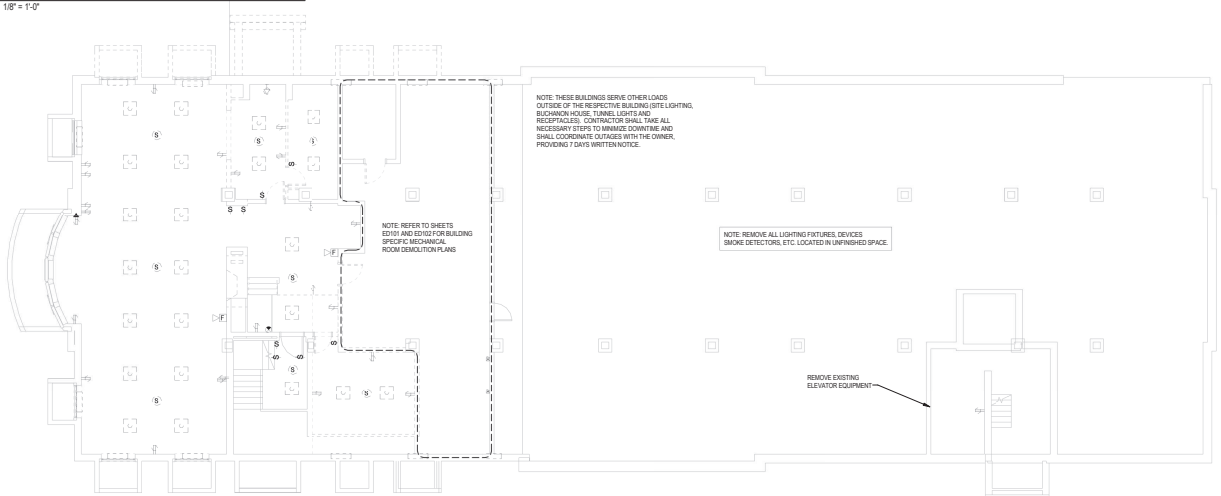
ELECTRICAL DEMOLITION LEGEND

SYMBOL	DESCRIPTION
	LIGHTING FIXTURE, CEILING MOUNTED. SYMBOL SIZE VARIES WITH LIGHTING FIXTURE TYPE.
	EXIT SIGN, CEILING MOUNTED.
	LIGHTING FIXTURE, WALL MOUNTED.
S	GENERAL USE SWITCH
	RECEPTACLE, WALL
	RECEPTACLE, SPECIAL PURPOSE, WALL.
	PANELBOARD
	DISCONNECT SWITCH, WALL MOUNTED.
	MOTOR STARTER, WALL MOUNTED.
	PAGING/MASS NOTIFICATION SYSTEM SPEAKER, WALL MOUNTED.
	TELECOM OUTLET, WALL.
F	FIRE ALARM MANUAL PULL STATION, WALL.
F	FIRE ALARM HORN, WALL MOUNTED
F	FIRE ALARM VISUAL DEVICE, WALL MOUNTED.
S	SMOKE DETECTOR, CEILING.
#	DEMOLITION PLAN NOTE
FACU	FIRE ALARM CONTROL UNIT
PNL	PANEL
ER	EXISTING TO REMAIN



FIRST FLOOR ELECTRICAL DEMOLITION PLAN

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



BASEMENT FLOOR ELECTRICAL DEMOLITION PLAN

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

GENERAL ELECTRICAL DEMOLITION NOTES :

NOTE: ALL NOTES MAY NOT APPLY TO THIS SHEET

1. THE INFORMATION ON THE FLOOR PLANS IS BASED ON THE EXISTING DRAWINGS AND LIMITED FIELD INVESTIGATION. THE CONTRACTOR SHALL INVESTIGATE ALL EXISTING CONDITIONS TO DETERMINE THE FULL EXTENT OF DEMOLITION AND NEW WORK REQUIRED BEFORE SUBMITTING BID. - CHANGE ORDERS DUE TO THE CONTRACTOR NOT INVESTIGATING EXISTING CONDITIONS WILL NOT BE APPROVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK SHOWN ON THE FLOOR PLANS AND DESCRIBED IN THESE NOTES, WHETHER SPECIFICALLY SHOWN ON THE PLANS OR NOT.

2. REMOVE ALL OF THE FOLLOWING ITEMS (BOTH WHERE WALLS AND CEILINGS ARE REMAINING AND WHERE DEMOLISHED), WHETHER SPECIFICALLY SHOWN ON THE DRAWINGS OR NOT:
   - ELECTRICAL SERVICE ENTRANCE SECONDARY CONDUCTORS AND RACEWAYS
   - COORDINATE WITH POWER CO. FOR REMOVAL OF EXISTING VAULT TRANSFORMERS
   - PANELBOARDS AND ASSOCIATED FEEDER CONDUCTORS. FEEDER CONDUITS SHALL BE REMOVED ONLY WHERE INDICATED NOT TO BE REUSED OR WHERE INTERFERING WITH RENOVATIONS.
   - BRANCH CIRCUIT CONDUCTORS
   - EXTERIOR LIGHTING FIXTURES (AFTER NEW ARE INSTALLED)
   - RECEPTACLES
   - SWITCHES
   - DATA/PHONE/CATV OUTLETS AND ASSOCIATED CABLES (EXCEPT AT HEAD-END LOCATION)
   - FIRE ALARM DEVICES (MANUAL PULL STATIONS, SMOKE AND HEAT DETECTORS, NOTIFICATION APPLIANCES, ETC.) AND FACP.
     NOTE: IN DRAPER, RETURN THE FACP AND ALL FIRE ALARM DEVICES TO THE OWNER.
   - PAGING/MASS NOTIFICATION SYSTEM SPEAKERS (TURN OVER TO OWNER UNDAMAGED) AND ASSOCIATED CABLES.
   - PAGING SYSTEM MICROPHONES.
   - CLOCK SYSTEM DEVICES AND ASSOCIATED CABLES
   - CEILING PROJECTOR ITEMS.
   - INTERIOR LIGHTING FIXTURES (INCLUDING EMERGENCY LIGHTS AND EXIT SIGNS)
   - DISCONNECTS AND STARTERS ASSOCIATED WITH REMOVED MECHANICAL AND PLUMBING EQUIPMENT (REFER TO MECHANICAL AND PLUMBING DRAWINGS).
   - CONDUITS AND CONDUCTORS EXPOSED BY REMOVAL OF CEILINGS AND WALLS OR INTERFERING WITH RENOVATIONS.
   - SURFACE RACEWAY AND EXPOSED CONDUIT ASSOCIATED WITH REMOVED DEVICES.
   - OTHER ITEMS SPECIFICALLY INDICATED ON THE DRAWINGS AS TO BE REMOVED.

3. THE FOLLOWING ITEMS SHALL NOT BE REMOVED:
   - CARD READERS (DOOR ACCESS CONTROL), DOOR HORN AND ALARM EQUIPMENT (OWNER WILL REMOVE AS DESIRED).
   - CONCEALED OUTLET BOXES AND CONDUITS NOT EXPOSED BY DEMOLITION WORK.
   - FEEDER CONDUITS INDICATED TO BE REUSED.
   - DATA/PHONE AND CATV HEAD-END EQUIPMENT AND CABLING (SHALL BE REMOVED BY OWNER).
   - OTHER ITEMS SPECIFICALLY INDICATED ON THE DRAWINGS AS TO REMAIN.

4. BEFORE DISPOSING OF ANY REMOVED ELECTRICAL ITEMS, THE CONTRACTOR SHALL CHECK WITH THE OWNER TO DETERMINE WHAT ITEMS, IF ANY, THE OWNER DESIRES TO SALVAGE FOR THE OWNER'S USE. ANY ITEMS NOT SELECTED BY THE OWNER TO BE SALVAGED SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR.

5. UPON COMPLETION OF DEMOLITION, ENSURE INTEGRITY OF ALL SMOKE AND/OR FIRE-RESISTANT RATED WALL ASSEMBLIES THAT WERE AFFECTED BY DEMOLITION.

ELECTRICAL DEMOLITION PLAN NOTES :

NOTE: ALL PLAN NOTES MAY NOT APPLY TO THIS SHEET

1. COORDINATE REMOVAL OF EXISTING TRANSFORMERS WITH POWER CO. EXISTING PRIMARY LOOP FEEDERS SHALL REMAIN.
2. REMOVE SURFACE RACEWAY.
3. REMOVE EXISTING PANEL. NEW PANEL WILL BE INSTALLED IN EXISTING PANEL LOCATION.
4. EXISTING CAMPUS FIRE ALARM LOOP JUNCTION POINT. LOOP SHALL BE KEPT IN OPERATION DURING RENOVATIONS. PROVIDE ALL REQUIRED CABLING, CONNECTIONS AND PROGRAMMING FOR KEEPING LOOP IN OPERATION. REFER TO POWER PLANS AND SPECIFICATIONS FOR DETAILS ON RECONNECTING TO LOOP WITH NEW FIRE ALARM SYSTEM.
5. DISCONNECT EXISTING BUCHANAN HOUSE DISCONNECT SWITCH. BUCHANAN HOUSE WILL NOW BE FED FROM NEW SERVICE VIA TRANSFORMER T-BUC. REMOVE ASSOCIATED EXISTING LINE SIDE CONDUCTORS TO TRANSFORMER VAULT. LOAD SIDE CONDUCTORS TO DOWNSTREAM PANEL IN BUCHANON HOUSE SHALL BE RETAINED AND EXTENDED TO NEW DISCONNECT SWITCH. REFER TO BOLLING RISER DIAGRAM, SHEET E4005, FOR DETAILS. COORDINATE PHASING AND OUTAGES WITH OWNER SO AS TO MINIMIZE DOWN TIME AT BUCHANON HOUSE.
6. FOR DRAPER ONLY, REMOVE EXISTING FACU AND RETURN TO OWNER.

GRAPHIC SCALES

1/8"=1'-0"

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RU RADFORD UNIVERSITY

RENOVATION OF THREE RESIDENCE HALLS POCAHONTAS, BOLLING, & DRAPER HALLS

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565
VMDO Project Number 1115

COMMONWEALTH OF VIRGINIA
05.19.14
RYAN W. HOLLOWAY
Lic. No. 048500
PROFESSIONAL ENGINEER

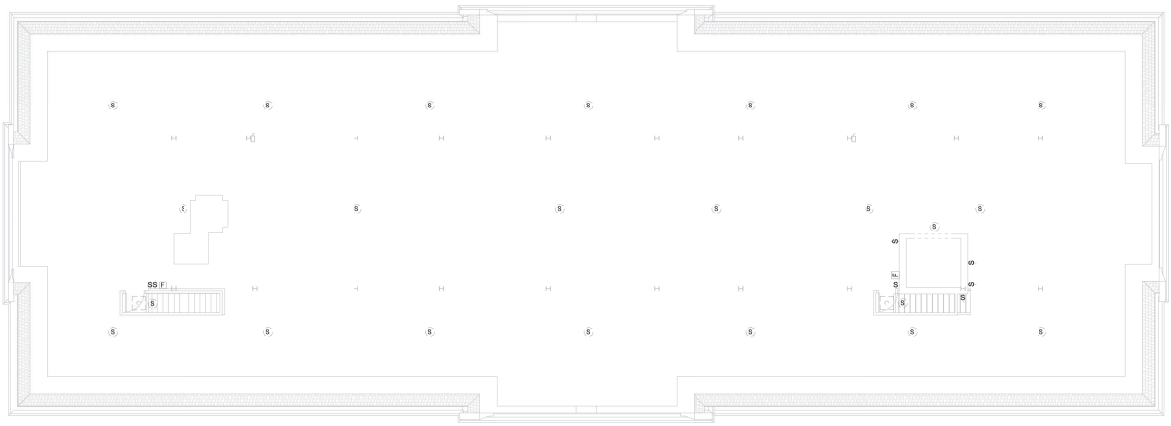
Checked By RGW
Drawn By BSM

ISSUES AND REVISIONS

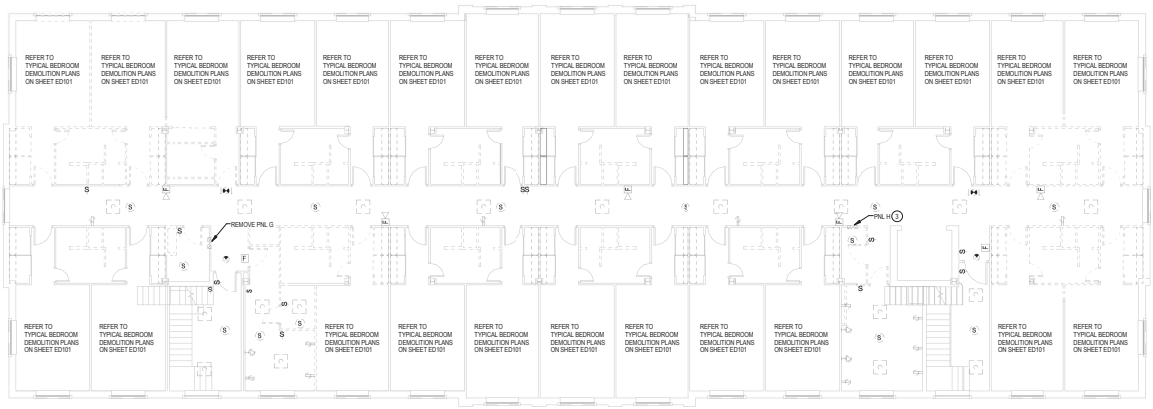
NO.	SUBMITTAL	DATE
5	BID DOCUMENTS	05.19.14

BASEMENT AND FIRST FLOOR ELECTRICAL DEMOLITION PLANS

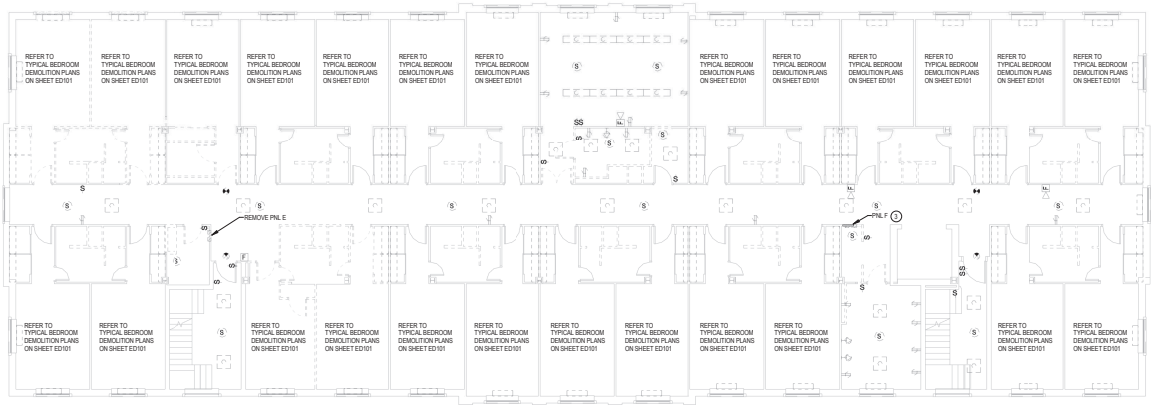
ED101



ATTIC FLOOR ELECTRICAL DEMOLITIION PLAN
SCALE: 1/8" = 1'-0"



THIRD FLOOR ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"



SECOND FLOOR ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

GENERAL ELECTRICAL DEMOLITION NOTES :

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2. REMOVE ALL OF THE FOLLOWING ITEMS (BOTH WHERE WALLS AND CEILINGS ARE REMAINING AND WHERE DEMOLISHED), WHETHER SPECIFICALLY SHOWN ON THE DRAWINGS OR NOT:
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   - COORDINATE WITH POWER CO. FOR REMOVAL OF EXISTING VAULT TRANSFORMERS
   - PANELBOARDS AND ASSOCIATED FEEDER CONDUCTORS. FEEDER CONDUITS SHALL BE REMOVED ONLY WHERE INDICATED NOT TO BE REUSED OR WHERE INTERFERING WITH RENOVATIONS.
   - BRANCH CIRCUIT CONDUCTORS
   - EXTERIOR LIGHTING FIXTURES (AFTER NEW ARE INSTALLED)
   - RECEPTACLES
   - SWITCHES
   - DATA/PHONE/CATV OUTLETS AND ASSOCIATED CABLES (EXCEPT AT HEAD-END LOCATION).
   - FIRE ALARM DEVICES (MANUAL PULL STATIONS, SMOKE AND HEAT DETECTORS, NOTIFICATION APPLIANCES, ETC.) AND FACP.
     NOTE: IN DRAPER, RETURN THE FACP AND ALL FIRE ALARM DEVICES TO THE OWNER.
   - PAGING/MASS NOTIFICATION SYSTEM SPEAKERS (TURN OVER TO OWNER UNDAMAGED) AND ASSOCIATED CABLES.
   - PAGING SYSTEM MICROPHONES.
   - CLOCK SYSTEM DEVICES AND ASSOCIATED CABLES
   - CEILING PROJECTOR ITEMS.
   - INTERIOR LIGHTING FIXTURES (INCLUDING EMERGENCY LIGHTS AND EXIT SIGNS)
   - DISCONNECTS AND STARTERS ASSOCIATED WITH REMOVED MECHANICAL AND PLUMBING EQUIPMENT (REFER TO MECHANICAL AND PLUMBING DRAWINGS).
   - CONDUITS AND CONDUCTORS EXPOSED BY REMOVAL OF CEILINGS AND WALLS OR INTERFERING WITH RENOVATIONS.
   - SURFACE RACEWAY AND EXPOSED CONDUIT ASSOCIATED WITH REMOVED DEVICES.
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ELECTRICAL DEMOLITION PLAN NOTES :

NOTE: ALL PLAN NOTES MAY NOT APPLY TO THIS SHEET

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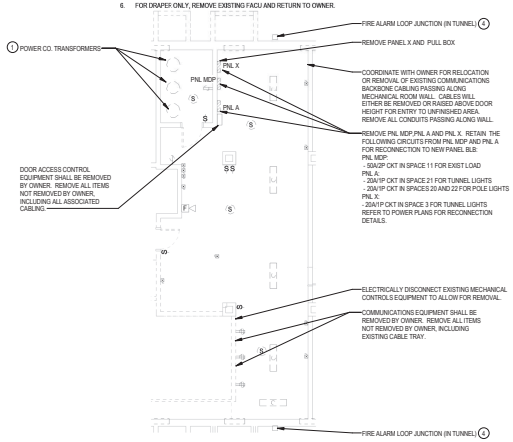
3. REMOVE EXISTING PANEL. NEW PANEL WILL BE INSTALLED IN EXISTING PANEL LOCATION.

4. EXISTING CAMPUS FIRE ALARM LOOP JUNCTION POINT. LOOP SHALL BE KEPT IN OPERATION DURING RENOVATIONS. PROVIDE ALL REQUIRED CABLING, CONNECTIONS AND PROGRAMMING FOR KEEPING LOOP IN OPERATION. REFER TO POWER PLANS AND SPECIFICATIONS FOR DETAILS ON RECONNECTING TO LOOP WITH NEW FIRE ALARM SYSTEM.

5. DISCONNECT EXISTING BUCHANAN HOUSE DISCONNECT SWITCH. BUCHANAN HOUSE WILL NOW BE FED FROM NEW SERVICE VIA TRANSFORMER T-BUC. REMOVE ASSOCIATED EXISTING LINE SIDE CONDUCTORS TO TRANSFORMER VAULT. LOAD SIDE CONDUCTORS TO DOWNSTREAM PANEL IN BUCHANON HOUSE SHALL BE RETAINED AND EXTENDED TO NEW DISCONNECT SWITCH. REFER TO BOLLING RISER DIAGRAM, SHEET E402S, FOR DETAILS. COORDINATE PHASING AND OUTAGES WITH OWNER SO AS TO MINIMIZE DOWN TIME AT BUCHANON HOUSE.

6. FOR DRAPER ONLY, REMOVE EXISTING FACU AND RETURN TO OWNER.



BASEMENT MECHANICAL ROOM ELECTRICAL DEMOLITION PLAN - DRAPER
SCALE: 1/8" = 1'-0"

GRAPHIC SCALES

1/8"=1'-0"

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RU
RADFORD UNIVERSITY

RENOVATION OF THREE RESIDENCE HALLS POCAHONTAS, BOLLING, & DRAPER HALLS

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565
VMDO Project Number 1115

COMMONWEALTH OF VIRGINIA
05.19.14
RYAN W. HOLLOWAY
Lic. No. 046500
PROFESSIONAL ENGINEER

Checked By RGW
Drawn By BSM

ISSUES AND REVISIONS

NO.	SUBMITTAL	DATE
5	BID DOCUMENTS	05.19.14

SECOND, THIRD AND ATTIC FLOOR ELECTRICAL DEMOLITION PLANS

ED102

GENERAL NOTES:

1. ALL VARIABLE FREQUENCY DRIVES (VFD'S) SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL MOUNT THE VFD'S. CONNECT THE LINE SIDE POWER WIRING AND THE LOAD SIDE POWER WIRING FROM THE VFD'S TO THE EQUIPMENT. ALL CONTROL AND INTERLOCK WIRING FOR THE VFD'S SHALL BE BY THE CONTROL SYSTEM CONTRACTOR.
2. LOAD SIDE CONDUCTOR AND CONDUIT SIZES FROM DISCONNECT SWITCHES, STARTERS AND VFD'S TO EQUIPMENT SHALL BE THE SAME AS THE LINE SIDE CONDUCTORS AND CONDUIT.
3. CAREFULLY COORDINATE ALL ELECTRICAL EQUIPMENT LOCATIONS WITH DUCTWORK, PIPING AND MECHANICAL EQUIPMENT. MAINTAIN ALL CLEARANCES AND SPACES REQUIRED BY THE NEC.
4. WHERE MULTIPLE CIRCUITS ARE COMBINED IN A SINGLE CONDUIT, DERATE CONDUCTORS PER NEC. SHARING OF NEUTRAL CONDUCTORS IS NOT PERMITTED.
5. REFER TO SPECIFICATIONS SECTION 260519 FOR REQUIREMENTS REGARDING UPSIZING CONDUCTORS 1-POLE, 15- AND 20-AMP CIRCUITS TO REDUCE VOLTAGE DROP. UPSIZED CONDUCTORS FOR VOLTAGE DROP ON OTHER CIRCUITS ARE INDICATED IN THE PANEL SCHEDULES.
6. ALL EMERGENCY LIGHTING FIXTURES SHALL BE MARKED SO AS TO BE IDENTIFIED BY VISUAL INSPECTION FOR TESTING PURPOSES. IDENTIFICATION SHALL BE BY ONE (1) 1/2" RED, SELF-STICK DOT ON THE VERTICAL PORTION OF FIXTURE LOUVER OR ON TOP OF THE LENS.
7. WHERE MULTIPLE BALLASTS ARE INDICATED FOR MULTI-LAMP T8 FIXTURES, THE OUTER LAMPS SHALL BE ON ONE BALLAST AND SWITCH, AND THE INNER LAMP(S) ON THE OTHER BALLAST AND SWITCH.
8. EXACT LOCATION OF OCCUPANCY SENSORS SHALL BE AS RECOMMENDED BY MANUFACTURER TO OBTAIN COMPLETE COVERAGE. IF THE CONTRACTOR USES A SENSOR THAT HAS A COVERAGE PATTERN DIFFERENT FROM THE SPECIFIED SENSOR AND ADDITIONAL SENSORS ARE REQUIRED TO PROVIDE COMPLETE COVERAGE, THE CONTRACTOR SHALL PROVIDE ADDITIONAL SENSORS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER. ALL OCCUPANCY SENSOR TIME DELAYS SHALL BE SET AT NO MORE THAN 30 MINUTES.
9. WHERE OCCUPANCY SENSORS ARE SHOWN CONNECTED TO WALL SWITCHES, CONNECT SENSORS IN SERIES WITH THE SWITCHES SUCH THAT LIGHTS WILL BE ON ONLY WHEN MOTION IS DETECTED AND SWITCHES ARE ON. WHERE MULTIPLE OCCUPANCY SENSORS ARE SHOWN CONNECTED TO ONE SWITCHING CIRCUIT, CONNECT SENSORS IN PARALLEL SUCH THAT CIRCUIT WILL BE ENERGIZED WHEN ANY SENSOR DETECTS MOTION. WHERE ONE OCCUPANCY SENSOR IS SHOWN CONNECTED TO MULTIPLE SWITCHING CIRCUITS, EACH SWITCHING CIRCUIT SHALL BE CONTROLLED BY THE OCCUPANCY SENSOR (IN SERIES WITH THE WALL SWITCH(ES) IF PRESENT).
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL PANELBOARD AND SWITCHBOARD FEEDER ENTRANCE LOCATIONS (TOP, BOTTOM, SIDE).
11. WHERE NEW FLUSH MOUNTED PANELS ARE INSTALLED WHERE OLD PANELS ARE REMOVED, CAREFULLY COORDINATE THE DIMENSIONS OF EXISTING PANELS AND NEW REPLACEMENT PANELS - CUT THE EXISTING WALL TO INCREASE THE OPENING IF NECESSARY TO ACCOMMODATE NEW PANELS.
12. DUCT SMOKE DETECTORS FOR AIR-HANDLING EQUIPMENT SHALL BE INSTALLED IN THE DUCT(S) BEFORE ANY BRANCH TAKE-OFFS. CONTROL WIRING FROM SMOKE DETECTOR CONTROL RELAY WILL BE PROVIDED BY CONTROL SYSTEM CONTRACTOR. WHERE DUCTWORK CONFIGURATION IS SUCH THAT ONE DETECTOR WILL NOT PROPERLY SAMPLE THE AIR, ADDITIONAL DETECTORS SHALL BE PROVIDED. FIRE ALARM SYSTEM SUPPLIER SHALL MAKE THIS DETERMINATION BEFORE SUBMITTING HIS BID
13. ELEVATOR FIRE ALARM INTERFACE SHALL BE AS FOLLOWS: SMOKE DETECTORS IN ELEVATOR LOBBIES, MACHINE ROOMS AND AT THE TOP OF ELEVATOR HOISTWAYS, WHEN IN ALARM STATUS, SHALL IMMEDIATELY SEND THE FIRE ALARM SYSTEM INTO ALARM MODE AND SHALL IMMEDIATELY SEND A SIGNAL TO THE ELEVATOR CONTROLLER TO INITIATE PHASE I RECALL, CAUSING THE ELEVATOR TO RETURN TO THE DESIGNATED OR ALTERNATE FLOOR, PARK AND OPEN DOORS. HEAT DETECTORS IN ELEVATOR MACHINE ROOMS AND ELEVATOR HOISTWAYS AND PITS SHALL BE 135°F, AND, WHEN IN ALARM STATUS SHALL IMMEDIATELY SEND THE FIRE ALARM SYSTEM INTO ALARM MODE AND INITIATE ELEVATOR RECALL. ACTIVATION OF ANY ELEVATOR MACHINE ROOM OR HOISTWAY OR PIT FLOW SWITCH SHALL IMMEDIATELY OPERATE THE ELEVATOR POWER BREAKER SHUNT TRIP AND SEND THE FIRE ALARM SYSTEM INTO ALARM MODE. ALL ELEVATOR HOISTWAY, PIT AND MACHINE ROOM SMOKE AND HEAT DETECTORS SHALL HAVE AN EXTRA SET OF CONTACTS TO OPERATE THE IN-CAR FIRE HAT WHEN IN ALARM STATUS. ALL INTERFACE WORK SHALL BE PER ASME/ANSI A17.1 AND DEB NOTICE 03/19/09 - ELEVATOR RECALL RE: CPSM SECTION 701.9.15, ASME/ANSI A17.1, RULE 102.2(c)(4)*.
14. FEED ALL FIRE ALARM POWER SUPPLIES FROM PANEL LLS WITH DEDICATED CIRCUITS. PROVIDE CIRCUIT BREAKER LOCKS AND CLEARLY INDICATE IN THE DIRECTORY THAT THEY ARE FIRE ALARM CIRCUITS. PROVIDE RED BREAKER, RED BREAKER LOCK OR RED DOT ON DEAD FRONT COVER BESIDE BREAKER. POWER SUPPLY QUANTITIES SHALL BE DETERMINED BY THE FIRE ALARM SUPPLIER AND INCLUDED IN BID. ALL POWER SUPPLIES SHALL BE LOCATED IN UTILITY-TYPE SPACES (MECH/ELEC/COMM ROOMS, HOUSEKEEPING CLOSETS, ETC.)
15. CAREFULLY COORDINATE LOCATIONS OF ALL LIGHTING FIXTURES, OCCUPANCY SENSORS, CEILING SPEAKERS, SMOKE AND HEAT DETECTORS, FIRE ALARM NOTIFICATION APPLIANCES AND OTHER ELECTRICAL CEILING MOUNTED DEVICES WITH SPRINKLER HEADS AND HVAC CEILING DEVICES. COORDINATE SURFACE MOUNTED LIGHTING FIXTURES ON LOW CEILINGS SUCH THAT FIXTURES WILL NOT INTERFERE WITH DOOR SWINGS.
16. WHERE NEW DEVICES (RECEPTACLES, SWITCHES OR TELECOMMUNICATIONS) ARE SHOWN ON EXISTING WALLS ALONG WITH EXISTING DEVICES BEING REPLACED (EXISTING OUTLET BOXES BEING REUSED), INSTALL ALL NEW DEVICES ON THAT WALL AT SAME HEIGHT AS EXISTING DEVICES. FOR EXAMPLE, IF EXISTING RECEPTACLES ON A WALL ARE 15" AFF INSTEAD OF 18" AFF, INSTALL NEW DEVICES ON THAT WALL AT 15" AFF.
17. WHERE NEW DEVICES (RECEPTACLES, SWITCHES OR TELECOMMUNICATIONS OR FIRE ALARM) ARE SHOWN ON EXISTING WALLS AND CEILING AND THERE ARE NOT EXISTING CONCEALED OUTLET BOXES OR CONDUITS TO REUSE, UTILIZE NON-METALLIC SURFACE RACEWAY (SINGLE-CHANNEL EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE), EXCEPT EXPOSED CONDUIT AND BOXES MAY BE USED IN UNFINISHED AREAS (MECHANICAL/ELECTRICAL/IT ROOMS AND STORAGE, ETC.)
18. WHERE RE-USE OF EXISTING CONDUIT, WIRING AND/OR OUTLET BOXES IS INDICATED, PROVIDE NEW MATERIALS AS REQUIRED. IF NEW EXPOSED MATERIALS ARE NEEDED, USE NON-METALLIC SURFACE RACEWAY (SINGLE-CHANNEL EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE), EXCEPT EXPOSED CONDUIT AND BOXES MAY BE USED IN UNFINISHED AREAS (MECHANICAL/ ELECTRICAL/IT ROOMS AND STORAGE, ETC.).
19. WHERE EXPOSED CONDUIT IS IN BEDROOM CLOSETS (FOR SURFACE RACEWAY TRANSITIONS), PAINT CONDUIT TO MATCH WALL.
20. LOCATIONS OF SURFACE RACEWAYS SHALL BE APPROVED BY THE OWNERS REPRESENTATIVE PRIOR TO ROUGH-IN.
21. WHERE SURFACE RACEWAY IS USED, PROVIDE ALL REQUIRED BOXES AND FITTINGS.
22. PROVIDE SHALLOW BOXES FOR NEW DEVICES IN FURRED WALLS. COORDINATE DEPTH WITH ARCHITECTURAL.
23. FILL-IN ALL EXISTING OUTLET BOXES THAT ARE NOT BEING REUSED WITH MATERIAL TO MATCH SURFACE (DRYWALL, PLASTER, ETC.). PROVIDE AN ALLOWANCE FOR 1,000 UNUSED BOXES.
24. ALL EXISTING LINE-VOLTAGE WIRING IN THE BUILDING SHALL BE REMOVED AND REPLACED, WHETHER SPECIFICALLY INDICATED ON THE FLOOR PLANS OR NOT.
25. PROVIDE CHORD AND PLUG TO MATE AND MATCH WITH RECEPTACLE PROVIDED FOR ALL RANGES, DRYERS AND DISHWASHERS.
26. PROVIDE ALL 120-VOLT POWER AND NETWORK CONNECTIONS REQUIRED FOR THE BAS SYSTEM. COORDINATE WITH THE CONTROLS SPECIFICATIONS AND CONTRACTOR.
27. TELECOMMUNICATIONS CONDUIT STUB-OUTS FROM IT AND STORAGE CLOSETS INTO CORRIDOR CEILING SPACE SHALL BE EXTENDED TO ACCESSIBLE ABOVE CEILING AREAS BETWEEN THE JOIST SUCH THAT CABLING CAN BE ROUTING THROUGH THE JOIST WEBBING.
28. FOR ALL EXTERIOR UNDERGROUND CONDUIT AND WIRING, CAREFULLY COORDINATE ALL WORK WITH EXISTING SOIL CONDITIONS AND WITH EXISTING UTILITIES IN ORDER TO AVOID CONFLICTS. NOTIFY ENGINEER IF ROUTING MUST BE DIFFERENT FROM WHAT IS SHOWN ON THE DRAWINGS.
29. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID IN ORDER TO VERIFY ALL EXISTING CONDITIONS, TO DETERMINE THE FULL EXTENT OF THE WORK REQUIRED, AND TO DETERMINE THE FULL EXTENT OF RELOCATION AND MODIFICATION WORK REQUIRED FOR ELECTRICAL AND ALL OTHER DISCIPLINE'S WORK. NO CHANGE ORDERS WILL BE APPROVED FOR ADDITIONAL WORK DUE TO THE CONTRACTOR NEGLECTING TO VISIT THE SITE TO GATHER ALL NECESSARY INFORMATION.

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ELECTRICAL ABBREVIATIONS

A OR AMP	AMPERE
ABD	ABANDONED
ABV	ABOVE
AC	ALTERNATING CURRENT
ACB	ABOVE COUNTER BACKSPLASH
AF OR AFI	ARC FAULT INTERRUPTER
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AIP	ABANDONED IN PLACE
AL	ALUMINUM
AM	AMMETER
AMPL	AMPLIFIER
ASYM	ASYMMETRICAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAGE
BAS	BUILDING AUTOMATION SYSTEM
BEL	BELOW
BD	BUS DUCT
BOT	BOTTOM
BRKR	BREAKER
C	COUNTERTOP
CA	CABLE
CAB	CABINET
CATV	CABLE TV
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CF	COMPACT FLUORESCENT
CKT	CIRCUIT
CLG	CEILING
CND	CONDUIT
CNTR	CENTER
COMB	COMBINATION
COND	CONDUCTOR
CONN	CONNECTION
CONT	CONTACTOR
CR	CORROSION RESISTANT
CT	CURRENT TRANSFORMER
CTRL	CONTROL
CU	COPPER
CW	COLD WATER
DB	DOOR BELL
DC	DIRECT CURRENT
DIM	DIMENSION
DISC	DISCONNECT
DR	DOOR RELEASE SERVICE
DS	DOOR SWITCH
DWG	DRAWING
E OR EMER	EMERGENCY
ECNC	EXIST CND AND NEW CONDS
EL	EXIST RELOCATED TO THIS LOCATION
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATOR
EM	EXIST REMOVED
EML	EXIST REMOVED AND RELOCATED
EMN	EXIST REMOVED AND NEW INSTALLED
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ENG	ENGINE
EP	EXPLOSIONPROOF
EQUIP	EQUIPMENT
ER	EXIST TO REMAIN
ERC	ELEVATOR RECALL
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXT	EXTERIOR
FA	FIRE ALARM
FACP	**FIRE ALARM CONTROL PANEL**
FACU	FIRE ALARM CONTROL UNIT
FDR	FEEDER
FC	FOOTCANDLE
FLUOR	**FLUORESCENT**
FSD	FIRE/SMOKE DAMPER
FSS	FUSIBLE SAFETY SWITCH
FXTR	FIXTURE
GD	GARAGE DOOR
GEN	GENERATOR
GF OR GFI	GROUND FAULT INTERRUPTER
GFP	GROUND FAULT PROTECTION/PROTECTED
GND	GROUND
GTD	GENERATOR TRANSFER DEVICE
H OR HOR	HORIZONTAL
HG	HOSPITAL GRADE
HGT	HEIGHT
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER OR HEAT PUMP
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HW	HOT WATER
HZ	HERTZ
IC	INTERCOM OR INTERRUPTING CAPACITY
IG	ISOLATED GROUND

IMC	INTERMEDIATE METALLIC CONDUIT
INC	INCANDESCENT
INIT	INITIAL
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KO	KNOCKOUT
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAR	KILOVOLT-AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT-HOUR
LA	LIGHTNING ARRESTER
LED	LIGHT EMITTING DIODE
LPS	LOW PRESSURE SODIUM
LRP	LIGHTING RELAY PANEL
LTG	LIGHTING
LUM	LUMENS OR LUMINAIRE
MAG	MAGNETIC
MAN	MANUAL
MATV	MASTER ANTENNA TELEVISION
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
M/G	MOTOR/GENERATOR
MH	METAL HALIDE OR MOUNTING HEIGHT
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MMS	MANUAL MOTOR STARTER
MNS	MASS NOTIFICATION SYSTEM
MOD	MOTOR OPERATED DAMPER
MOT	MOTOR
MS	MAGNETIC STARTER
MTG	MOUNTED OR MOUNTING
MTR	METER
MV	MERCURY VAPOR
N OR NORM	NORMAL
NEC	NATIONAL ELECTRICAL CODE
NEUT	NEUTRAL
NFSS	NON-FUSIBLE SAFETY SWITCH
NL	NIGHT LIGHT
NO	NUMBER
OH	OVERHEAD
P	POLE
PB	PULL BOX OR PUSHBUTTON
PBS	PUSHBUTTON STATION
PH	PHASE
PNL	PANEL OR PANELBOARD
PNLBRD	PANELBOARD
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
RB	RELAY BASE
REC	RECEPTACLE
REFRIG	REFRIGERATOR
RGS	RIGID GALVANIZED STEEL CONDUIT
S/O	SPACE ONLY
SB	SOUNDER BASE
SCCR	SHORT CIRCUIT CURRENT RATING
SDR	MOTOR OPERATED SMOKE DAMPER
SEC	SECONDARY
SL	SINGLE STATION
SMR	SURFACE METAL RACEWAY
SN	SOLID NEUTRAL
SP	SPECIAL PURPOSE
SPD	SURGE PROTECTIVE DEVICE
SPKR	SPEAKER
SR	SURFACE RACEWAY
SS	SURGE SUPPRESSOR
STR	STARTER
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
TC	TIME CLOCK
TEL	TELEPHONE
TR	TAMPER RESISTANT
TV	TELEVISION
TYP	TYPICAL
UC	UNDERCOUNTER
UF	UNDERFLOOR
UG	UNDERGROUND
UL	UNDERWRITERS' LABORATORIES
UNO	UNLESS NOTED OTHERWISE
V	VOLT
VA	VOLT-AMPERE
VAR	VOLT-AMPERE REACTIVE
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLTMETER
W	WATT OR WIRE
WP	WEATHERPROOF
XFER	TRANSFER
XFMR	TRANSFORMER

NOTE (ELECTRICAL ABBREVIATIONS):

1. ALL ABBREVIATIONS LISTED MAY NOT APPLY TO THIS PROJECT. REFER TO OTHER ABBREVIATION LISTS ELSEWHERE IN THESE DOCUMENTS FOR ABBREVIATIONS NOT LISTED HERE.

FAN COIL UNIT NOTE:

FOR MAINTENANCE SAFETY PURPOSES, CLEARLY LABEL ALL FAN COIL UNIT JUNCTION BOXES AT 277-VOLT.

LIGHTNING PROTECTION SYSTEM NOTE:

ACCORDING TO CALCULATIONS PERFORMED BASED ON THE 2014 EDITION OF NFPA 780 (STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS) THESE BUILDINGS HAVE AN ANNUAL THREAT OF OCCURRENCE VALUE OF 0.0181 POTENTIAL EVENTS PER YEAR. THE TOLERABLE LIGHTNING FREQUENCY IS 0.0003 EVENTS PER YEAR. THE THREAT OF POTENTIAL EVENTS IS GREATER THAN THE TOLERABLE FREQUENCY, THEREFORE A LIGHTNING PROTECTION SYSTEM WILL BE PROVIDED FOR EACH BUILDING.

EXISTING OUTLET BOX AND CONDUIT NOTES:

1. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF EXISTING OUTLET BOXES AND CONDUITS INDICATED TO BE REUSED. THE EXACT ROUTE OF EXISTING RACEWAYS ARE NOT KNOWN. PROVIDE PULL STRINGS WHERE NECESSARY TO PULL NEW CONDUCTORS IN EXISTING CONDUITS.
2. REMOVE AND/OR RELOCATE ANY EXISTING CONDUITS INTERFERING WITH RENOVATIONS.
3. IF AN EXISTING OUTLET BOX OR CONDUIT CANNOT BE REUSED AS INDICATED, PROVIDE NEW BOXES AND RACEWAY AS REQUIRED PER THE REQUIREMENTS OF GENERAL NOTE #17.

STAIRWELL RECEPTACLE NOTE:

RECEPTACLES IN STAIRWELLS SHALL BE INSTALLED IN OUTLET BOXES NO LARGER THAN 4"X4", SHALL COMPLY WITH VUSBC 1022.4, AND SHALL HAVE FIRE-RATED PROTECTION IN ACCORDANCE WITH VUSBC 713.

CEILING SPACE NOTE:

CEILING SPACE IS LIMITED THROUGHOUT THE BUILDING. CAREFUL COORDINATION IS REQUIRED BY ALL DISCIPLINES.

FIRE RATING NOTE:

SMOKE PARTITIONS, 1- AND 2-HOUR RATED FIRE BARRIERS ARE SHOWN ON THE ELECTRICAL DRAWINGS. FOR CLARITY, 1/2-HOUR RATED PARTITIONS ARE NOT SHOWN ON ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL LIFE SAFETY PLANS FOR DETAILS AND RATINGS.

SEISMIC NOTE:

ALL ELECTRICAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF IBC AND ASCE-7 SEISMIC DESIGN CATEGORY B.

CIRCUIT SPLICING AND TAPPING NOTE:

TO THE EXTENT POSSIBLE, ALL CIRCUIT SPLICES AND TAPS SHALL OCCUR ABOVE ACCESSIBLE CEILINGS. WHERE A SPLICE OR TAP CANNOT OCCUR ABOVE AN ACCESSIBLE CEILING, THE CONTRACTOR SHALL MINIMIZE AND LOCATE BOXES TO BE AS INCONSPICUOUS AS POSSIBLE. FIELD VERIFY LOCATIONS WITH ARCHITECT. ALL JUNCTION AND PULL BOXES SHALL BE ACCESSIBLE PER NEC 314.29.

ELECTRICAL LEGEND

MTG. HGT.	SYMBOL	DESCRIPTION
	1	PLAN NOTE DESIGNATION.
	A1	LIGHTING FIXTURE TYPE DESIGNATION.
	*	ASTERISK DENOTES BOTTOM OF OUTLET BOX MOUNTED 8 IN. ABOVE TOP OF COUNTER, UNLESS NOTED OTHERWISE. DISTANCE INCLUDES HEIGHT OF BACKSPLASH.
		LIGHTING FIXTURE, FLUORESCENT, CEILING MOUNTED. SYMBOL SIZE VARIES WITH LIGHTING FIXTURE TYPE.
		LIGHTING FIXTURE, FLUORESCENT, CEILING MOUNTED WITH CONNECTED ON EMERGENCY CIRCUIT. (TYPICAL FOR ALL LIGHTING FIXTURES)
		LIGHTING FIXTURE, FLUORESCENT, WALL MOUNTED. SYMBOL SIZE VARIES WITH LIGHTING FIXTURE TYPE.
		LIGHTING FIXTURE, LED, INCANDESCENT, FLUORESCENT OR HID, CEILING MOUNTED.
		LIGHTING FIXTURE, LED, INCANDESCENT, FLUORESCENT OR HID, WALL MOUNTED.
		SITE LIGHTING FIXTURE, POST TOP MOUNTED.
		EXIT SIGN, CEILING MOUNTED. SHADED QUADRANT(S) INDICATES FACE(S). PROVIDE ARROWS AS INDICATED ON DRAWINGS. LIGHTING FIXTURE TYPE "X1", UNO.
7'-6" TO CENTER		EXIT SIGN, WALL MOUNTED. SHADED QUADRANT(S) INDICATES FACE(S). PROVIDE ARROWS AS INDICATED ON DRAWINGS. LIGHTING FIXTURE TYPE "X1", UNO.
4'-0"	$a	GENERAL USE SWITCH, SINGLE POLE. LOWER CASE ALPHABETIC SUBSCRIPT, WHERE SHOWN, INDICATES LOADS CONTROLLED. (TYPICAL FOR ALL SWITCHES)
4'-0"	$3	GENERAL USE SWITCH, THREE WAY.
4'-0"	$4	GENERAL USE SWITCH, FOUR WAY.
4'-0"	$K	GENERAL USE SWITCH, KEY OPERATED.
4'-0"	$F	FLUORESCENT DIMMER SWITCH, WALL-BOX MOUNTED.
	O1	OCCUPANCY SENSOR, STANDARD ON/OFF SWITCHING, CEILING MOUNTED. NUMBER INDICATES TYPE AS SCHEDULED ON DRAWINGS OR IN SPECIFICATIONS.
	PC	PHOTOCELL, EXTERIOR WALL OR SOFFIT MOUNTED.
	GTD	GENERATOR TRANSFER DEVICE.
1'-4" TO BOT		RECEPTACLE, DUPLEX, WALL. ALPHA-NUMERIC OR NUMERIC SUBSCRIPT, WHERE SHOWN, INDICATES CIRCUIT. (TYPICAL FOR ALL RECEPTACLES)
1'-4" TO BOT		RECEPTACLE, DUPLEX GFCI, WALL.
1'-4" TO BOT		RECEPTACLES, TWO DUPLEX (QUAD) IN A TWO GANG OUTLET BOX, WALL.
1'-4" TO BOT		RECEPTACLE, SINGLE, WALL.
1'-4" AFF TO BOT, UNO		RECEPTACLE, SPECIAL PURPOSE, WALL. "D" DENOTES CLOTHES DRYER (NEMA 14-30R), "R" DENOTES RANGE (NEMA 14-50R), UNLESS OTHER NEMA TYPE NOTED.
1'-4" TO BOT, UNO	J	JUNCTION BOX, WALL.
	J	JUNCTION BOX, CEILING.
1'-4" TO BOT		TELECOM OUTLET, WALL. COMBINATION TELEPHONE, CABLE TELEVISION OR COMPUTER PORTS. (TYPICAL FOR TELECOM OUTLETS). "W" DENOTES WALL TELEPHONE OUTLET MOUNTED 4'-6" AFF. REFER TO E402 FOR DETAILS.
3'-0"	HC	HANDICAP BUTTON DOOR OPERATOR, WALL.
4'-0"	RA M	ELEVATOR EMERGENCY RESCUE ASSISTANCE SYSTEM STATION. SUBSCRIPT 'M' DENOTES MASTER STATION.
4'-0'	CR	ACCESS CONTROL SYSTEM CARD READER OR KEYPAD, WALL.
7'-0'	DA	ACCESS CONTROL SYSTEM ALARM, WALL.
6'-8" TO CENTER		DOORBELL RECEIVER WITH STROBE, WALL. MOUNT AT INDICATED HEIGHT OR AS NOTED ON DRAWINGS.
4'-0"		DOORBELL PUSHBUTTON, WIRELESS, INTERFACED WITH DOORBELL RECEIVER IN ROOM.
	R	SUBSCRIPT 'R' BESIDE DEVICE INDICATES EXISTING BOX AND CONDUIT SHALL BE REUSED WHERE FEASIBLE.
	CT12	CABLE TRAY, WALL MOUNTED OR SUSPENDED WITH BOTTOM MINIMUM 3" ABOVE ACCESSIBLE CEILING OR MINIMUM 8'-6" AFF TO BOTTOM WHERE EXPOSED. CLEAR SPACE ABOVE CABLE TRAY SHALL BE 4" MINIMUM. NUMBER INDICATES CABLE TRAY WIDTH IN INCHES.
		NEW CONNECTED TO EXISTING AT THIS POINT.
	S	SMOKE DETECTOR, CEILING.
AS NOTED	S	SMOKE DETECTOR, WALL.
	S D	SMOKE DETECTOR, DUCT TYPE. COORDINATE EXACT LOCATION WITH MECHANICAL DRAWINGS.
	H	HEAT DETECTOR, CEILING.
AS NOTED	H	HEAT DETECTOR, WALL.
6'-6"	D	MAGNETIC DOOR HOLDER, WALL. "F" = FLUSH MOUNTED.
4'-0"	F	FIRE ALARM MANUAL PULL STATION, WALL.
6'-8" TO BOT	F 30	FIRE ALARM HORN OR SPEAKER WITH INTEGRAL VISUAL DEVICE, WALL. NUMBER INDICATES VISUAL DEVICE MINIMUM CANDELA RATING.
6'-8" TO BOT	F MN 30	FIRE ALARM VISUAL DEVICE, WALL. NUMBER INDICATES VISUAL DEVICE MINIMUM CANDELA RATING. 'MN' DENOTES STROBE/MASS NOTIFICATION COMBO DEVICE.
	F 30	FIRE ALARM HORN OR SPEAKER WITH INTEGRAL VISUAL DEVICE, CEILING. NUMBER INDICATES VISUAL DEVICE MINIMUM CANDELA RATING.
	F 30	FIRE ALARM VISUAL DEVICE, CEILING. NUMBER INDICATES VISUAL DEVICE MINIMUM CANDELA RATING.
	F	FIRE ALARM HORN OR SPEAKER, CEILING.
6' 8" TO BOT	F	SPRINKLER SYSTEM EXTERIOR ELECTRONIC BELL, WALL.
6'-8" TO BOT	MN 30	MASS NOTIFICATION AMBER VISUAL DEVICE, WALL. NUMBER INDICATES VISUAL DEVICE MINIMUM CANDELA RATING.
	MN 30	MASS NOTIFICATION AMBER VISUAL DEVICE, CEILING. NUMBER INDICATES VISUAL DEVICE MINIMUM CANDELA RATING.
	FS	SPRINKLER SYSTEM WATER FLOW DETECTOR SWITCH.
	TS	SPRINKLER SYSTEM VALVE SUPERVISORY (TAMPER) SWITCH.
		GROUND CONNECTION.
1'-0" TO BOT		GROUND BAR. MOUNT WITH LONG DIMENSION HORIZONTAL.
	M	ELECTRIC MOTOR CONNECTION.
6'-0"		480/277 VOLT PANELBOARD.
6'-0"		208/120 VOLT PANELBOARD.
5'-0"	N/3/60	NON-FUSIBLE SAFETY SWITCH, WALL OR EQUIPMENT MOUNTED. NUMBER INDICATES SAFETY SWITCH 3-POLE/60 AMP RATING.
5'-0"	F/3/60/45	FUSIBLE SAFETY SWITCH, WALL OR EQUIPMENT MOUNTED. NUMBER INDICATES SAFETY SWITCH 3-POLE/60 AMP RATING/45 AMP FUSES.
5'-0"	$M	TOGGLE SWITCH, HORSEPOWER RATED, WALL MOUNTED. SINGLE POLE UNLESS SHOWN WITH NUMBER INDICATING NUMBER OF POLES GREATER THAN ONE. "F" DENOTES FLUSH MOUNTED.
5'-0"	3/30/0	COMBINATION MAGNETIC MOTOR STARTER AND NON-FUSIBLE SAFETY SWITCH WALL MOUNTED. NUMBER INDICATES 3-POLE/30 AMP RATING/ NEMA SIZE 0 STARTER.
5'-0"	3/30/15/0	COMBINATION MAGNETIC MOTOR STARTER AND FUSIBLE SAFETY SWITCH, WALL MOUNTED. NUMBER INDICATES 3-POLE/30 AMP RATING/15 AMP FUSES/NEMA SIZE 0 STARTER.
	2B-3	CIRCUIT DESIGNATION. DESIGNATION SHOWN INDICATES PANEL 2B AND CIRCUIT NUMBER 3.
		CONDUIT EXPOSED.
		CONDUIT CONCEALED IN WALL OR ABOVE CEILING.
		CONDUIT TURNED UP.
		CONDUIT TURNED DOWN.
	P1	POKE-THRU ASSEMBLY, FLOOR. NUMBER INDICATES TYPE AS SCHEDULED ON DRAWINGS OR IN SPECIFICATIONS.

NOTES (ELECTRICAL LEGEND):

1. THESE ARE STANDARD ELECTRICAL SYMBOLS AND MAY NOT ALL APPEAR ON THE PROJECT DRAWINGS. HOWEVER WHEREVER AN ELECTRICAL SYMBOL APPEARS ON THE PROJECT DRAWINGS, THE ITEM SHALL BE FURNISHED AND INSTALLED.
2. MOUNTING HEIGHTS ARE FROM FINISHED FLOOR TO TOP OF OUTLET OR EQUIPMENT, UNO. WHERE THE MOUNTING HEIGHT INDICATED ON THE DRAWINGS IS DIFFERENT FROM THE LEGEND, THE DRAWING TAKES PRECEDENT. SEE DRAWINGS FOR MOUNTING HEIGHTS NOT INDICATED IN THE LEGEND.
3. SEE ELECTRICAL ABBREVIATIONS FOR ALPHABETIC SUBSCRIPT WITH SYMBOL, UNO.

LIGHTING FIXTURE SCHEDULE

FXTR TYPE	MOUNTING	LAMP (NO.) TYPE	MANUFACTURER & CATALOG NUMBER (BASIS OF DESIGN)	OTHER ACCEPTABLE MANUFACTURERS	REMARKS
A1	SURFACE	(3) F32T8	LUMAX: SU 3 32 24 EO9 FB RS L841	DAY-BRITE 934-SS SERIES; HE WILLIAMS 12-4 SERIES	(2) BALLASTS; FIXTURE DEPTH SHALL NOT EXCEED 4"
A2	SURFACE	(2) F32T8	LUMAX: SU 2 32 24 EO9 FB RS L841	DAY-BRITE 934-SS SERIES; HE WILLIAMS 12-4 SERIES	SAME AS TYPE A1 EXCEPT 2 LAMP AND 1 BALLAST; FIXTURE DEPTH SHALL NOT EXCEED 4"
A3	SURFACE	(4) F32T8	LUMAX: SU 4 32 24 EO9 FB RS L841	DAY-BRITE 934-SS SERIES; HE WILLIAMS 12-4 SERIES	SAME AS TYPE A1, EXCEPT 4 LAMPS; 2 BALLASTS; FIXTURE DEPTH SHALL NOT EXCEED 4"
B1	RECESSED	(1) 32W PLT	PRESCOLITE: CFT632HEB MW32 STF602H CL LP32T41K	PHILIPS REVELATION OM6 SERIES; PEACHTREE PFTX SERIES	6" DIAMETER; CLEAR GLASS LENS; 32W MAX WATTAGE LABEL; PROVIDE WITH FIRE RATED PROTECTIVE ENCLOSURE PER THE SPECIFICATIONS
B2	RECESSED	(1) 26W PLT	SPECTRUM LIGHTING: SPS7HF 126 EX 7070-FG WL	PHILIPS REVELATION OM6 SERIES; PEACHTREE PFT SERIES	NON-CONDUCTIVE SHOWER LIGHT; WET LOCATION LISTED; SHALLOW HOUSING; PROVIDE FIRE RATED PROTECTIVE ENCLOSURE PER THE SPECIFICATIONS
B3	RECESSED	(1) 42W PLT	PRESCOLITE: CFT632HEB STF602H CL LP42T41K	PHILIPS REVELATION OM6 SERIES; PEACHTREE PFTX SERIES	6" DIAMETER; CLEAR GLASS LENS; PROVIDE FIRE RATED PROTECTIVE ENCLOSURE PER THE SPECIFICATIONS
B4	RECESSED	(2) 32W PLT	PRESCOLITE: CFTD832HEB STF802H CL LP32T41K	PHILIPS REVELATION OM8 SERIES; PEACHTREE PFTX SERIES	8" DIAMETER; CLEAR GLASS LENS; PROVIDE FIRE RATED ENCLOSURE PER THE SPECIFICATIONS WHERE INDICATED ON THE DRAWINGS
C1	SURFACE WALL	(2) F32T8	SEE SPECIFICATION SHEET E002		LOCATE CENTERED ON MIRROR WITH BOTTOM OF FIXTURE 2" ABOVE TOP OF MIRROR
D1	RECESSED	LED	VANTAGE: A6VOPLED 2 11 40K L6060 SCL	CALCULITE L6 SERIES; PEACHTREE 6HLRD SERIES	6" DIAMETER; 1100 NOMINAL LUMENS
D2	RECESSED	LED	VANTAGE: A6VOPLED 2 28 40K L6060 SCL	PHILIPS OMEGA OM6LED SERIES; PEACHTREE 6BLRD SERIES	6" DIAMETER; 2800 NOMINAL LUMENS
D3	RECESSED	LED	VANTAGE: A6VOPLED 2 11 40K L6160 SCL	CALCULITE L6 SERIES; SPECTRUM INFINIUM FD SERIES	6" DIAMETER WALLWASH; 1100 NOMINAL LUMENS
D4	RECESSED	LED	VANTAGE: A6VOPLED 2 13 40K L6060 SCL	CALCULITE L6 SERIES; PEACHTREE 6HLRD SERIES	6" DIAMETER; 1300 NOMINAL LUMENS; PROVIDE FIRE RATED PROTECTIVE ENCLOSURE PER THE SPECIFICATIONS WHERE INDICATED
D5	RECESSED	LED	VANTAGE: A6VEPLED 2 11 35K L6011 SCL	CALCULITE L6 SERIES; PEACHTREE 6HLRD SERIES	6" DIAMETER; 1100 NOMINAL LUMENS; TEMPERED CLEAR GLASS LENS; UL WET LOCATION LISTED
D6	RECESSED	LED	VANTAGE: A4VPLED 2 11 40K L4060 SCL	CALCULITE L4 SERIES; PEACHTREE 4BLRD SERIES	4" DIAMETER; 1100 NOMINAL LUMENS; 0-10V DIMMING DRIVER
E1	PENDANT	LED	SEE SPECIFICATION SHEET E002		
F1	SURFACE	(1) 42WPLT	HUBBELL: NV2FG42BHG	DAY-BRITE VFN SERIES; KALEIDOSCOPE RLS SERIES	COORDINATE LOCATION WITH ELEVATOR INSTALLER
G1	RECESSED	LED	SEE SPECIFICATION SHEET E002		7" DIAMETER; 1300 NOMINAL LUMENS; WITH FROSTED DROP LENS; PROVIDE FIRE RATED PROTECTIVE ENCLOSURE PER THE SPECIFICATIONS
H1	SURFACE/SUSPENDED	(2) F32T8	COLUMBIA: KL4 232 U EP U KLEC KLWG4 KHC (WHERE REQUIRED)	DAY-BRITE 1F SERIES; HE WILLIAMS 82 SERIES	SUSPEND WITH CHAIN HANGER ONLY WHEN NECESSARY TO AVOID CONFLICT WITH DUCTWORK AND PIPING; END PLATES; WIRE GUARD; MOUNT AS HIGH AS POSSIBLE WHEN USING CHAIN HANGERS
H2	SURFACE/SUSPENDED	(3) F32T8	COLUMBIA: KL4 332 U EP U KLEC KLWG4 KHC (WHERE REQUIRED)	DAY-BRITE 1F SERIES; HE WILLIAMS 82 SERIES	SUSPEND WITH CHAIN HANGER ONLY WHEN NECESSARY TO AVOID CONFLICT WITH DUCTWORK AND PIPING; END PLATES; WIRE GUARD; MOUNT AS HIGH AS POSSIBLE WHEN USING CHAIN HANGERS
J1	RECESSED	LED	SEE SPECIFICATION SHEET E002		6" DIAMETER; 4000 NOMINAL LUMENS
K1	SURFACE WALL	LED	SEE SPECIFICATION SHEET E002		FULL CUT-OFF; 3000K LEDS; MOUNTING HEIGHT NOTED ON LIGHTING PLANS
K2	SURFACE WALL	LED	SEE SPECIFICATION SHEET E002		FULL CUT-OFF; 3000K LEDS; MOUNTING HEIGHT NOTED ON LIGHTING PLANS
L1	PENDANT	LED	SEE SPECIFICATION SHEET E002		CLOSE-TO-CEILING MOUNTING KIT
M1	SURFACE/SUSPENDED	(2) F32T8	COLUMBIA: CS4-232-EU-CSWG4	DAY-BRITE T SERIES; HE WILLIAMS 76 SERIES	SUSPEND WITH CHAIN HANGER ONLY WHEN NECESSARY TO AVOID CONFLICT WITH DUCTWORK AND PIPING; END PLATES; WIRE GUARD; MOUNT AS HIGH AS POSSIBLE WHEN USING CHAIN HANGERS
N1	SURFACE	(1) 26W PLT	SEE SPECIFICATION SHEET E003		
P1	RECESSED IN HANDRAIL	LED	SEE SPECIFICATION SHEET E003		3000K LEDS; 1.5W; ASYMMETRIC DISTRIBUTION
P2	RECESSED IN HANDRAIL	LED	SEE SPECIFICATION SHEET E003		3000K LEDS; 1.5W; SYMMETRIC DISTRIBUTION
X1	CEILING/WALL	LED	ASTRALITE: DCA 1C R W AC	PHILIPS CHLORIDE 55LA SERIES; HE WILLIAMS EXIT/CA SERIES	ARROWS AS INDICATED; PROVIDE CANOPY WHERE REQUIRED; HOUSING AND CANOPY SHALL NOT EXCEED 9" OVERALL HEIGHT
X2	CEILING/WALL	LED	ASTRALITE: DCA 2C R W AC	PHILIPS CHLORIDE 55LA SERIES; HE WILLIAMS EXIT/CA SERIES	ARROWS AS INDICATED; HOUSING AND CANOPY SHALL NOT EXCEED 9" OVERALL HEIGHT
X3	CEILING/WALL	LED	ASTRALITE: TP U R W AC	PHILIPS CHLORIDE CXL SERIES; HE WILLIAMS EXIT SERIES	ARROWS AS INDICATED; STEM MOUNT ON 1/2" CONDUIT STEM IN ATTIC IF REQUIRED BY DUCTWORK AND/OR PIPING
X4	CEILING/WALL	LED	ASTRALITE: DCA 1C R BA AC	PHILIPS CHLORIDE 55LA SERIES; HE WILLIAMS EXIT/CA SERIES	ARROWS AS INDICATED; PROVIDE CANOPY WHERE REQUIRED; HOUSING AND CANOPY SHALL NOT EXCEED 9" OVERALL HEIGHT

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RU RADFORD UNIVERSITY

RENOVATION OF THREE RESIDENCE HALLS POCAHONTAS, BOLLING, & DRAPER HALLS
RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565
VMDO Project Number 1115

COMMONWEALTH OF VIRGINIA
05.19.14
RYAN W. HOLLOWAY
Lic. No. 048500
PROFESSIONAL ENGINEER

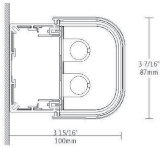
Checked By RGW
Drawn By BSM

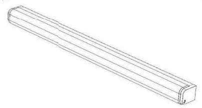
ISSUES AND REVISIONS

NO.	SUBMITTAL	DATE
5	BID DOCUMENTS	05.19.14

ELECTRICAL LEGEND, ABBREVIATIONS, NOTES AND LIGHTING FIXTURE SCHEDULE

E001





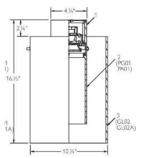
CROSS-SECTIONAL VIEW

3-D VIEW

LUMINAIRE REQUIREMENTS

1. CONSTRUCTION : EXTRUDED ALUMINUM (0.070" NOMINAL) HOUSING WITH DIE CAST ZINC END CAPS AND JOINERS.
2. OPTICS : 0.060" THICK SATIN ACRYLIC LENS. DIRECT/INDIRECT LIGHTING DISTRIBUTION.
3. ELECTRICAL : RAPID START 120/277 VOLT INTEGRAL ELECTRONIC BALLAST WITH LESS THAN 10% THD. BALLAST PROVIDED WITH DISCONNECT TO MEET LUMINAIRE DISCONNECT CODE REQUREMENTS.
4. MOUNTING : SURFACE MOUNT ON WALL ABOVE MIRROR. REFER TO NOTE ON LIGHTING FIXTURE SCHEDULE
5. FINISH : POWDER-COAT WHITE PAINTED FINISH ON EXPOSED TRIM.
6. LABEL : UL LISTED.
7. DIMENSIONS : NOMINAL 4" X 4" X 48".
8. EFFICIENCY : TOTAL LUMINAIRE EFFICIENCY OF NO LESS THAN 71%.

FIXTURE TYPE 'C1' SPECIFICATION



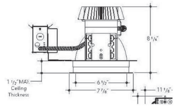
CROSS-SECTIONAL VIEW

3-D VIEW

LUMINAIRE REQUIREMENTS

1. CONSTRUCTION : DIE-CAST AND EXTRUDED ALUMINUM COMPONENTS WITH BRUSHED AND CLEAR LACQUER FINISH. 4-3/4" DIAMETER OPAL ACRYLIC PRIMARY DIFFUSER AND 10" DIAMETER CLEAR EXTRUDED GLASS WITH POLISHED EDGES OUTER GLASS. OUTER ASSEMBLY COMES WITH A DIE CAST ALUMINUM HOLDER RING WITH STAINLESS STEEL SUPPORT PINS.
2. OPTICS : PHOSPOR LENS ASSEMBLY POSITIONED IN FRONT OF LED ARRAY AND MIXING CHAMBER.
3. ELECTRICAL : INTEGRAL DRIVER, 120-277V OPERATION. 20W LED ARRAY BOARD WITH 4000K LEDS PROVIDING A NOMINAL 1155 LUMENS.
4. MOUNTING : 120" LONG, CLEAR METALLIC STRAIGHT CORD WITH CANOPY. FIXTURE SHALL BE MOUNTED 10'-3" AFF TO BOTTOM. COORDINATE EXACT HEIGHT IN FIELD WITH ARCHITECT.
5. DIMENSIONS : NOMINAL 10" DIAMETER OUTER GLASS x 16-1/2" OVERALL HEIGHT

FIXTURE TYPE 'E1' SPECIFICATION



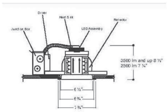
CROSS-SECTIONAL VIEW

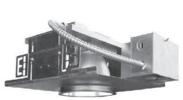
3-D VIEW

LUMINAIRE REQUIREMENTS

1. CONSTRUCTION : HEAVY GAUGE STEEL ARCHITECTURAL GRADE OPEN DOWNLIGHT, CAPABLE TO BE INSTALLED IN CEILINGS UP TO 1-1/2" MAXIMUM THICKNESS. ELECTRICALCOMPONENTS ACCESSIBLE FROM BELOW.
2. OPTICS : SPECULAR CLEAR "ALZAK" REFLECTOR. 4000K, 1300 NOMINAL LUMENS LEDS. 50,000 HOURS AT 70% LUMEN MAINTENANCE. PROVIDE FIXTURE WITH 5" OVERALL HEIGHT, SANDBLASTED ACRYLIC CYLINDER WITH FROSTED FINISH THAT DROPS 3-1/2" BELOW CEILING LINE.
3. ELECTRICAL : 120/277V OPERATION. DIMMABLE 0-10V.
4. MOUNTING : RECESSED.
5. DIMENSIONS : 7" DIAMETER APERTURE. 8-1/4" HEIGHT (NOT INCLUDING FROSTED CYLINDER)

FIXTURE TYPE 'G1' SPECIFICATION





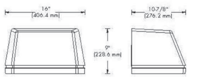
CROSS-SECTIONAL VIEW

3-D VIEW

LUMINAIRE REQUIREMENTS

1. CONSTRUCTION : PRECISION FORMED 16 GAUGE GALVANIZED STEEL CEILING PAN WITH BUILT-IN PLASTER RING. ADJUSTS TO 1-1/2" CEILING THICKNESS. ELECTRICAL COMPONENTS ACCESSIBLE THROUGH APERTURE. POLISHED METAL FLANGE.
2. OPTICS : SELF-FLANGED LOWER REFLECTOR WITH SOFT HAZE FINISH. 45 DEGREE CUTOFF TO SOURCE. MEDIUM DISTRIBUTION. 4000K, 80+ CRI LEDS, PROVIDING 4000 NOMINAL LUMENS. 70% LUMEN MAINTENANCE AT 50,000 HOURS BASED ON IESNA LM-80-2008.
3. ELECTRICAL : FULLY SERVICEABLE AND UPGRADABLE LED LIGHT ENGINE. POWER SUPPLY IS OVERLOAD AND SHORT CIRCUIT PROTECTED. STANDARD WITH 0-10V DIMMING (10-100%).
4. MOUNTING : RECESSED CEILING MOUNT.
5. LABEL : ETL TESTED IN ACCORDANCE WITH UL 1598.
6. DIMENSIONS : 6-1/2" APERTURE. 8-1/2" OVERALL HEIGHT.

FIXTURE TYPE 'J1' SPECIFICATION



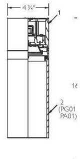
CROSS-SECTIONAL VIEW

3-D VIEW

LUMINAIRE REQUIREMENTS

1. CONSTRUCTION : DIE-CAST ALUMINUM HOUSING AND DOOR IN FINISH SELECTED BY ARCHITECT. DIE-CAST ALUMINUM HEAT SINK.
2. OPTICS : ZERO UPLIGHT, DARK SKY, NEIGHBOR FRIENDLY FIXTURE. CLEAR TEMPERED GLASS LENS. FIXTURE TYPE K1 - 40W, 3000K LEDS PROVIDING 1934 DELIVERED LUMENS AND FORWARD THROW DISTRIBUTION; FIXTURE TYPE K2 - 60W, 3000K LEDS PROVIDING 2575 DELIVERED LUMENS AND MEDIUM DISTRIBUTION.
3. ELECTRICAL : INTEGRAL DRIVER, 120-277V OPERATION.
4. MOUNTING : WALL MOUNT BELOW LIMESTONE AS NOTED ON LIGHTING PLANS. FIELD VERIFY HEIGHT WITH ARCHITECT.
5. FINISH : DARK BRONZE OR CUSTOM COLOR SELECTED BY ARCHITECT.
6. LABEL : UL WET LOCATION LISTED.
7. DIMENSIONS : NOMINAL 16" WIDE x 9" TALL x 10.875" DEEP.

FIXTURE TYPE 'K1 & K2' SPECIFICATION



CROSS-SECTIONAL VIEW

3-D VIEW

LUMINAIRE REQUIREMENTS

1. CONSTRUCTION : DIE-CAST AND EXTRUDED ALUMINUM COMPONENTS WITH BRUSHED AND CLEAR LACQUER FINISH 4-3/4" DIAMETER OPAL ACRYLIC PRIMARY DIFFUSER. OUTER ASSEMBLY COMES WITH A DIE CAST ALUMINUM HOLDER RING WITH STAINLESS STEEL SUPPORT PINS.
2. OPTICS : PHOSPOR LENS ASSEMBLY POSITIONED IN FRONT OF LED ARRAY AND MIXING CHAMBER.
3. ELECTRICAL : INTEGRAL DRIVER, 120-277V OPERATION. 10W LED ARRAY BOARD WITH 4000K LEDS PROVIDING A NOMINAL 690 LUMENS.
4. MOUNTING : SATIN ALUMINUM CLOSE TO CEILING MOUNTING KIT.
5. LABEL : UL DAMP LOCATION LISTED.
6. DIMENSIONS : NOMINAL 4-3/4" DIAMETER DIFFUSER x 16-3/8' OVERALL HEIGHT

FIXTURE TYPE 'LI' SPECIFICATION

VMDO ARCHITECTS

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Comm. No.: 13111

RU
RADFORD UNIVERSITY

RENOVATION OF THREE RESIDENCE HALLS POCAHONTAS, BOLLING, & DRAPER HALLS

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565
VMDO Project Number 1115

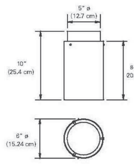
COMMONWEALTH OF VIRGINIA
05.19.14
RYAN W. HOLLOWAY
Lic. No. 048500
PROFESSIONAL ENGINEER

Checked By RGW
Drawn By BSM

ISSUES AND REVISIONS

NO.	SUBMITTAL	DATE
5	BID DOCUMENTS	05.19.14

ELECTRICAL LIGHTING FIXTURE SPECIFICATIONS



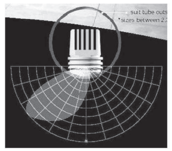
CROSS-SECTIONAL VIEW

3-D VIEW

LUMINAIRE REQUIREMENTS

1. CONSTRUCTION : SOLID ALUMINUM CANOPY.
2. OPTICS : MATTE WHITE ACRYLIC CYLINDER.
3. ELECTRICAL : INTEGRAL ELECTRONICHPF, MULTI-VOLT 120/277V BALLAST, THERMALLY PROTECTED WITH END-OF-LIFE CIRCUITRY TO ACCOMMODATE THE SPECIFIED LAMP WATTAGE.
4. MOUNTING : SURFACE MOUNT ABOVELOUNGE ISLAND. FIELD VERIFY EXACT LOCATION WITH ARCHITECT.
5. FINISH : NATURAL ALUMINUM FINISH ON CANOPY.
6. LABEL : UL APPROVED FOR INDOOR AND DAMP LOCATIONS.
7. DIMENSIONS : 5" DIAMETER CANOPY, 6" DIAMETER CYLINDER, 10" OVERALL HEIGHT.

FIXTURE TYPE 'N1' SPECIFICATION



PROFILE VIEW

LUMINAIRE REQUIREMENTS

1. CONSTRUCTION : EXTRUDED ALUMINUM HOUSING WITH LARGE HEAT SINK. HEAT SINK ISOLATED FROM GLASS LENS.
2. OPTICS : TYPE-P1 - ASYMMETRIC DISTRIBUTION; TYPE-P2 - SYMMETRIC DISTRIBUTION. 84+ CRI LEDS. 107 LUMENS AT 1.5 WATTS LEDS; 3000K COLOR TEMPERATURE. 50,000 HOUR AT L70 LEDS. TYPE-P1 FIXTURES SHALL BE ORIENTED SUCH THAT THE ASYMMETRIC LIGHTING PATTERN IS POINTED TOWARDS THE WALKWAY.
3. ELECTRICAL : 120/277V TO 24VDC CLASS 2 DRIVER, RATED FOR UP TO 100W OUTPUT POWER. PROVIDE WITH ONE SOFT START RELAY PER DRIVER. IP66 RATED. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR WIRE SIZES BASED ON DISTANCE TO FIRST FIXTURE. PROVIDE ENCLOSURE FOR DRIVER AND RELAY.
4. MOUNTING : FIXTURE MOUNTS RECESSED IN HANDRAIL. SNAP-IN INSTALLATION. FIXTURE INSTALLS IN 1.5" DIAMETER, SCHEDULE 40 RAIL.
5. FINISH : CUSTOM COLOR SELECTED BY ARCHITECT TO MATCH RAILING.
6. LABEL : SUITABLE FOR WET LOCATION.

FIXTURE TYPE 'P1 & P2' SPECIFICATION

VMDO ARCHITECTS
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RU
RADFORD UNIVERSITY

RENOVATION OF THREE RESIDENCE HALLS POCAHONTAS, BOLLING, & DRAPER HALLS

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code	217-17565
VMDO Project Number	1115

COMMONWEALTH OF VIRGINIA
05.19.14
RYAN W. HOLLOWAY
Lic. No. 048500
PROFESSIONAL ENGINEER

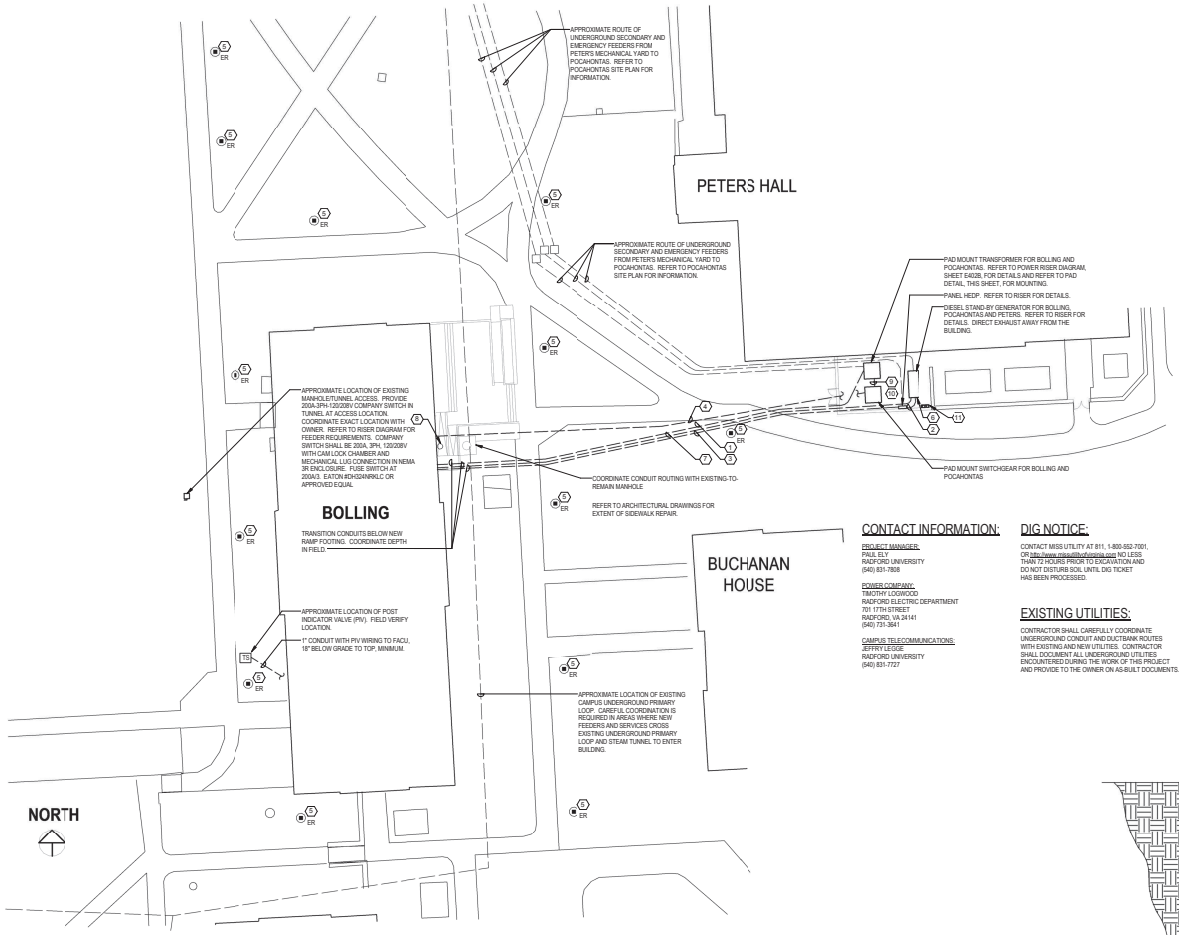
Checked By	RGW
Drawn By	BSM

ISSUES AND REVISIONS

NO.	SUBMITTAL	DATE
5	BID DOCUMENTS	05.19.14

ELECTRICAL LIGHTING FIXTURE SPECIFICATIONS

E003



ELECTRICAL SITE PLAN - BOLLING

SCALE: 1" = 20'-0"

CONTACT INFORMATION:

PROJECT MANAGER:
PAUL ELY
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(540) 831-7808

POWER COMPANY:
TIMOTHY LOGWOOD
RADFORD ELECTRIC DEPARTMENT
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CAMPUS TELECOMMUNICATIONS:
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(540) 831-7727

DIG NOTICE:

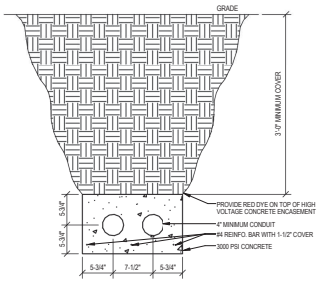
CONTACT MISS UTILITY AT 811, 1-800-552-7001, OR http://www.missutilityofvirginia.com/ NO LESS THAN 72 HOURS PRIOR TO EXCAVATION AND DO NOT DISTURB SOIL UNTIL DIG TICKET HAS BEEN PROCESSED.

EXISTING UTILITIES:

CONTRACTOR SHALL CAREFULLY COORDINATE UNDERGROUND CONDUIT AND DUCTBANK ROUTES WITH EXISTING AND NEW UTILITIES. CONTRACTOR SHALL DOCUMENT ALL UNDERGROUND UTILITIES ENCOUNTERED DURING THE WORK OF THIS PROJECT AND PROVIDE TO THE OWNER ON AS-BUILT DOCUMENTS.

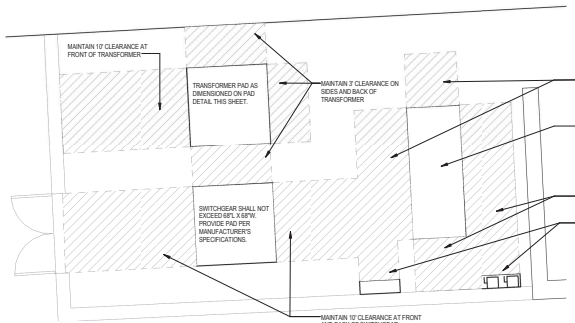
PLAN NOTES:

1. UNDERGROUND SECONDARY. SECONDARY CONDUITS SHALL BE IN CONCRETE DUCTBANK. REFER TO POWER RISER DIAGRAM, SHEET E402B, AND DETAIL THIS SHEET. CONDUIT ROUTE SHALL BE CAREFULLY COORDINATED WITH NEW AND EXISTING UNDERGROUND UTILITIES.
2. UNDERGROUND EMERGENCY FEEDER FROM GENERATOR TO PANEL HEDP. REFER TO POWER RISER DIAGRAM, SHEET E402B, FOR DETAILS.
3. UNDERGROUND EMERGENCY FEEDER. CONDUIT SHALL BE IN CONCRETE DUCTBANK. REFER TO POWER RISER DIAGRAM, SHEET E402B, AND DETAIL THIS SHEET. CONDUIT ROUTE SHALL BE CAREFULLY COORDINATED WITH NEW AND EXISTING UNDERGROUND UTILITIES.
4. UNDERGROUND PRIMARY FROM BOLLING VAULT TO NEW PAD MOUNT SWITC-HGEAR. PRIMARY CONDUITS SHALL BE IN CONCRETE DUCTBANK. REFER TO POWER RISER DIAGRAM, SHEET E402B, AND DETAIL THIS SHEET. CONDUIT ROUTE SHALL BE CAREFULLY COORDINATED WITH NEW AND EXISTING UNDERGROUND UTILITIES.
5. APPROXIMATE LOCATION OF EXISTING POST TOP CAMPUS LIGHT FIXTURE, SHOWN FOR REFERENCE ONLY.
6. NOTE: CONNECTION OF GENERATOR BLOCK HEATER, BATTERY HEATER AND BATTERY CHARGER TO CIRCUITS IN PETERS SHALL BE PERFORMED BY OWNER. CONNECTION OF PETERS EMERGENCY CIRCUITS TO TRANSFER SWITCHES SHALL BE PERFORMED BY OWNER. INSTALLATION OF PETERS REMOTE ANNUNCIATOR PANEL SHALL BE PERFORMED BY OWNER.
7. 2" UNDERGROUND CONDUIT, 18" BELOW GRADE TO TOP MINIMUM, WITH GENERATOR CONTROLS CABLING. CONDUIT ROUTE SHALL BE CAREFULLY COORDINATED WITH NEW AND EXISTING UNDERGROUND UTILITIES. CONDUIT SHALL INSTALLED IN CONCRETE DUCTBANK, REFER TO DETAIL THIS SHEET.
8. EXISTING MANHOLE SHALL BE ELIMINATED. REFER TO VAULT POWER PLAN, SHEET E201 FOR PRIMARY SERVICE DETAILS.
9. UNDERGROUND PRIMARY. ONE 4" CONDUIT, 36" BELOW GRADE TO TOP, MINIMUM. COORDINATE WITH NEW AND EXISTING UTILITIES.
10. PROVIDE WEATHER-RESISTANT, GFCI DUPLEX RECEPTACLE WITH WEATHERPROOF WHILE IN USE COVER IN NEW EQUIPMENT YARD. CONNECT TO NEAREST AVAILABLE 20A, 120V CONVENIENCE RECEPTACLE CIRCUIT IN PETERS. UTILIZE 2#12 AND 1#12 GROUND IN 3/4" CONDUIT.
11. WIREWAY AND DISCONNECTS FOR TAPPING EMERGENCY FEEDER SERVING PETERS. REFER TO BOLLING RISER DIAGRAM, SHEET E402B FOR DETAILS.



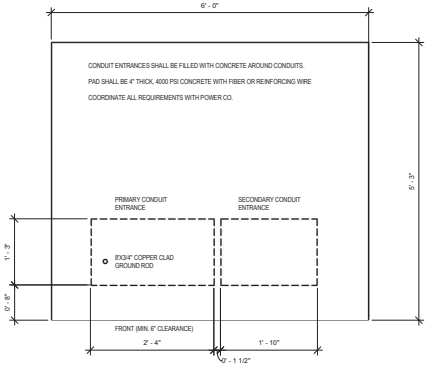
PRIMARY DUCT BANK DETAIL

NO SCALE



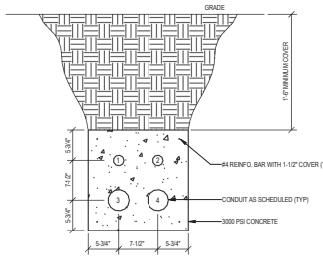
PETER'S SITE ENCLOSURE CLEARANCE PLAN

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



POWER CO. TRANSFORMER PAD DETAIL

NO SCALE



DUCT BANK CONDUIT SCHEDULE		
NO.	MIN. SIZE	USE
1	2"	GENERATOR CONTROLS
2	1"	EM FEEDER FROM GENERATOR
3	3"	BUILDING SERVICE
4	3"	BUILDING SERVICE

SECONDARY DUCT BANK DETAIL - BOLLING

NO SCALE

GRAPHIC SCALE

1"=20'-0"

20' 10' 0 20'

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RU RADFORD UNIVERSITY

RENOVATION OF THREE RESIDENCE HALLS POCAHONTAS, BOLLING, & DRAPER HALLS

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-16565
VMDO Project Number 1115

COMMONWEALTH OF VIRGINIA
05.19.14
RYAN W. HOLLOWAY
Lic. No. 048500
PROFESSIONAL ENGINEER

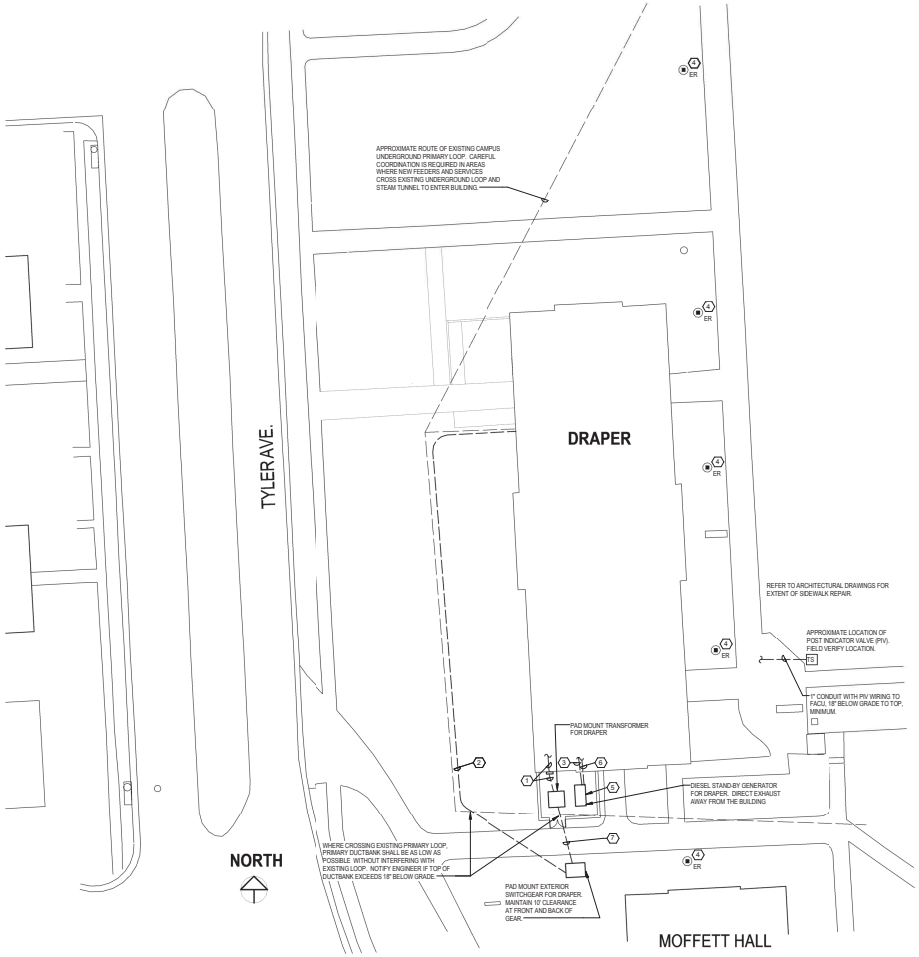
Checked By RGW
Drawn By BSM

ISSUES AND REVISIONS

NO.	SUBMITTAL	DATE
5	BID DOCUMENTS	05.19.14

ELECTRICAL SITE PLAN - BOLLING

E004B



ELECTRICAL SITE PLAN - DRAPER

SCALE: 1" = 20'-0"

PLAN NOTES:

1. UNDERGROUND SECONDARY FROM TRANSFORMER THROUGH BUILDING SERVICE DISCONNECT. REFER TO POWER RISER DIAGRAM, SHEET E402D, FOR DETAILS. CONDUIT ROUTE SHALL BE CAREFULLY COORDINATED WITH NEW AND EXISTING UNDERGROUND UTILITIES.
2. UNDERGROUND PRIMARY. PRIMARY CONDUITS SHALL BE IN CONCRETE DUCTBANK. DUCTBANK SHALL BE PAINTED RED. REFER TO POWER RISER DIAGRAM, SHEET E402D, AND DETAIL THIS SHEET. CONDUIT ROUTE SHALL BE CAREFULLY COORDINATED WITH NEW AND EXISTING UNDERGROUND UTILITIES.
3. EMERGENCY FEEDER. FEEDER SHALL BE UNDERGROUND FROM GENERATOR TO BUILDING AND BE ROUTED THROUGH THE CRAWL SPACE TO THE EMERGENCY WIREWAY. REFER TO POWER RISER DIAGRAM, SHEET E402D, FOR DETAILS. CONDUIT ROUTE SHALL BE CAREFULLY COORDINATED WITH NEW AND EXISTING UNDERGROUND UTILITIES.
4. APPROXIMATE LOCATION OF EXISTING POST TOP CAMPUS LIGHT FIXTURE, SHOWN FOR REFERENCE ONLY.
5. CONNECT GENERATOR JACKET HEATER TO CIRCUIT BLD-14. CONNECT GENERATOR BATTERY CHARGER TO CIRCUIT LEQ-12. PROVIDE WEATHER RESISTANT GFI RECEPTACLE WITH WEATHERPROOF WHILE-IN-USE COVER AT GENERATOR AND CONNECT TO BLB-16.
6. 2" CONDUIT WITH GENERATOR CONTROLS CABLING. CONDUIT SHALL BE 18" BELOW GRADE TO TOP MINIMUM, BETWEEN THE GENERATOR AND THE BUILDING AND SHALL BE ROUTED THROUGH THE CRAWL SPACE TO THE TRANSFER SWITCHES. CONDUIT ROUTE SHALL BE CAREFULLY COORDINATED WITH NEW AND EXISTING UNDERGROUND UTILITIES. REFER TO SHEET E201 FOR ADDITIONAL ROUTING DETAILS.
7. UNDERGROUND PRIMARY. ONE 4" CONDUIT, 36" BELOW GRADE TO TOP, MINIMUN. COORDINATE WITH NEW AND EXISTING UTILITIES.

CONTACT INFORMATION:

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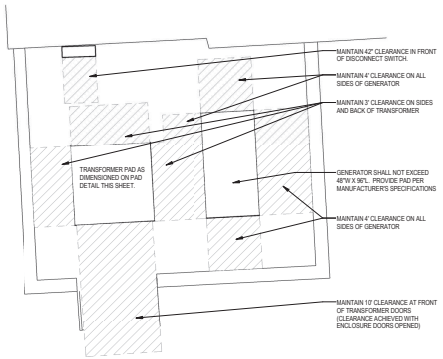
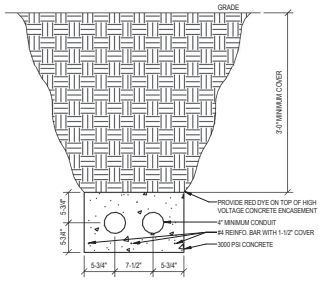
EXISTING UTILITIES:

CONTRACTOR SHALL CAREFULLY COORDINATE UNDERGROUND CONDUIT AND DUCTBANK ROUTES WITH EXISTING AND NEW UTILITIES. CONTRACTOR SHALL DOCUMENT ALL UNDERGROUND UTILITIES ENCOUNTERED DURING THE WORK OF THIS PROJECT AND PROVIDE TO THE OWNER ON AS-BUILT DOCUMENTS.



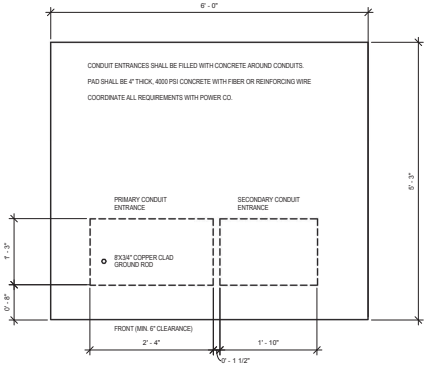
DRAPER SITE ENCLOSURE CLEARANCE PLAN

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



PRIMARY DUCT BANK DETAIL

NO SCALE



POWER CO. TRANSFORMER PAD DETAIL

NO SCALE

GRAPHIC SCALE

1/4"=1'-0" 0 2 4 6
1"=20'-0" 20' 10' 0 20'

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RENOVATION OF THREE RESIDENCE HALLS POCAHONTAS, BOLLING, & DRAPER HALLS

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-16565
VMDO Project Number 1115

COMMONWEALTH OF VIRGINIA
05.19.14
RYAN W. HOLLOWAY
Lic. No. 046500
PROFESSIONAL ENGINEER

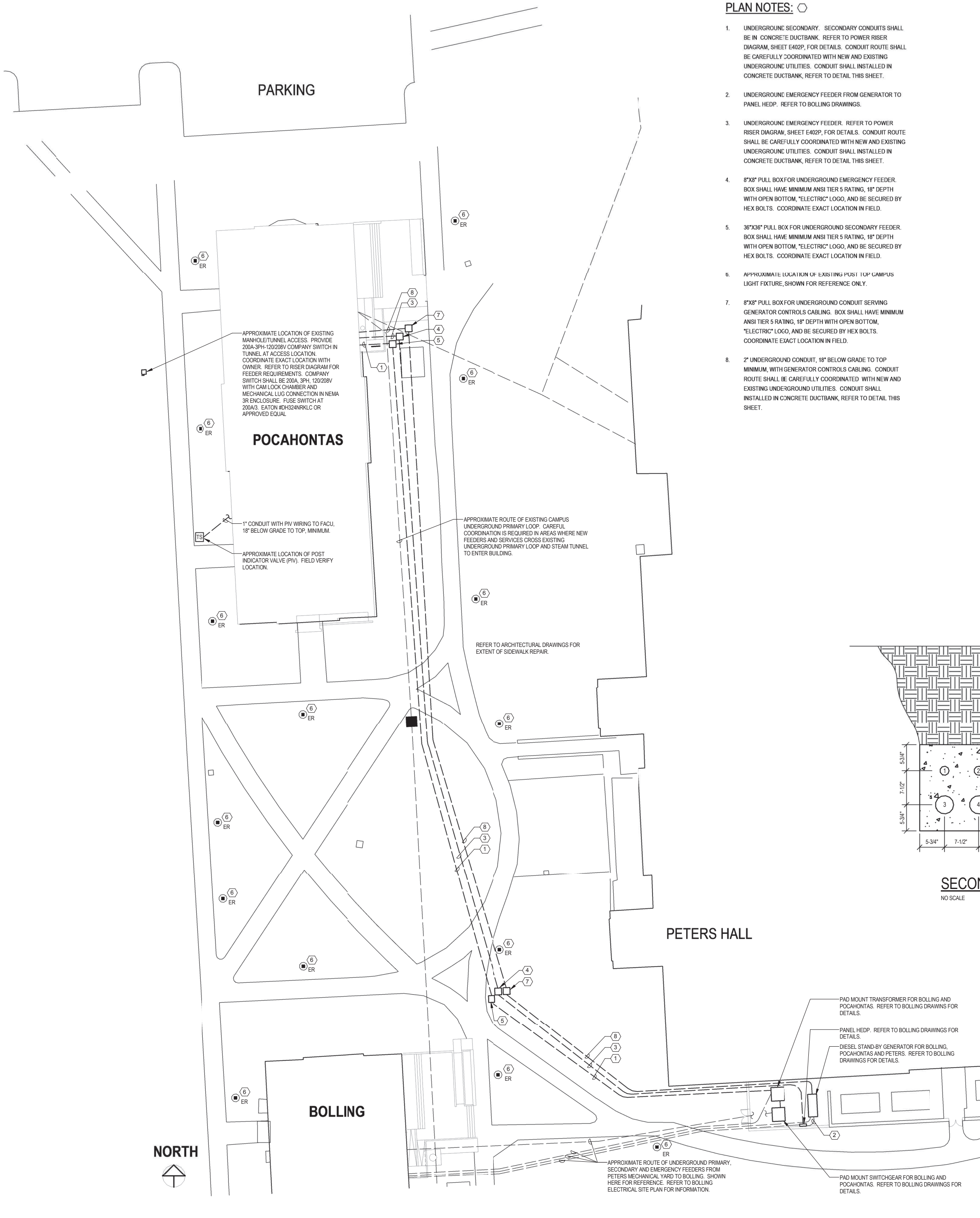
Checked By RGW
Drawn By BSM

ISSUES AND REVISIONS

NO.	SUBMITTAL	DATE
5	BID DOCUMENTS	05.19.14

ELECTRICAL SITE PLAN - DRAPER

E004D



PARKING
POCAHONTAS
PETERS HALL
BOLLING
NORTH
APPROXIMATE LOCATION OF EXISTING MANHOLE/TUNNEL ACCESS. PROVIDE 200A-3PH-120/208V COMPANY SWITCH IN TUNNEL AT ACCESS LOCATION. COORDINATE EXACT LOCATION WITH OWNER. REFER TO RISER DIAGRAM FOR FEEDER REQUIREMENTS. COMPANY SWITCH SHALL BE 200A, 3PH, 120/208V WITH CAM LOCK CHAMBER AND MECHANICAL LUG CONNECTION IN NEMA 3R ENCLOSURE. FUSE SWITCH AT 200A/3. EATON #DH324NRKLC OR APPROVED EQUAL
1" CONDUIT WITH PIV WIRING TO FACU, 18" BELOW GRADE TO TOP, MINIMUM.
APPROXIMATE LOCATION OF POST INDICATOR VALVE (PIV). FIELD VERIFY LOCATION.
APPROXIMATE ROUTE OF EXISTING CAMPUS UNDERGROUND PRIMARY LOOP. CAREFUL COORDINATION IS REQUIRED IN AREAS WHERE NEW FEEDERS AND SERVICES CROSS EXISTING UNDERGROUND PRIMARY LOOP AND STEAM TUNNEL TO ENTER BUILDING.
REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF SIDEWALK REPAIR.
PAD MOUNT TRANSFORMER FOR BOLLING AND POCAHONTAS. REFER TO BOLLING DRAWINGS FOR DETAILS.
PANEL HEDP. REFER TO BOLLING DRAWINGS FOR DETAILS.
DIESEL STAND-BY GENERATOR FOR BOLLING, POCAHONTAS AND PETERS. REFER TO BOLLING DRAWINGS FOR DETAILS.
PAD MOUNT SWITCHGEAR FOR BOLLING AND POCAHONTAS. REFER TO BOLLING DRAWINGS FOR DETAILS.
APPROXIMATE ROUTE OF UNDERGROUND PRIMARY, SECONDARY AND EMERGENCY FEEDERS FROM PETERS MECHANICAL YARD TO BOLLING. SHOWN HERE FOR REFERENCE. REFER TO BOLLING ELECTRICAL SITE PLAN FOR INFORMATION.
ER

ELECTRICAL SITE PLAN - POCAHONTAS

SCALE: 1" = 20'-0"

PLAN NOTES:

1. UNDERGROUND SECONDARY. SECONDARY CONDUITS SHALL BE IN CONCRETE DUCTBANK. REFER TO POWER RISER DIAGRAM, SHEET E402P, FOR DETAILS. CONDUIT ROUTE SHALL BE CAREFULLY COORDINATED WITH NEW AND EXISTING UNDERGROUND UTILITIES. CONDUIT SHALL INSTALLED IN CONCRETE DUCTBANK, REFER TO DETAIL THIS SHEET.
2. UNDERGROUND EMERGENCY FEEDER FROM GENERATOR TO PANEL HEDP. REFER TO BOLLING DRAWINGS.
3. UNDERGROUND EMERGENCY FEEDER. REFER TO POWER RISER DIAGRAM, SHEET E402P, FOR DETAILS. CONDUIT ROUTE SHALL BE CAREFULLY COORDINATED WITH NEW AND EXISTING UNDERGROUND UTILITIES. CONDUIT SHALL INSTALLED IN CONCRETE DUCTBANK, REFER TO DETAIL THIS SHEET.
4. 8"X8" PULL BOX FOR UNDERGROUND EMERGENCY FEEDER. BOX SHALL HAVE MINIMUM ANSI TIER 5 RATING, 18" DEPTH WITH OPEN BOTTOM, "ELECTRIC" LOGO, AND BE SECURED BY HEX BOLTS. COORDINATE EXACT LOCATION IN FIELD.
5. 36"X36" PULL BOX FOR UNDERGROUND SECONDARY FEEDER. BOX SHALL HAVE MINIMUM ANSI TIER 5 RATING, 18" DEPTH WITH OPEN BOTTOM, "ELECTRIC" LOGO, AND BE SECURED BY HEX BOLTS. COORDINATE EXACT LOCATION IN FIELD.
6. APPROXIMATE LOCATION OF EXISTING POST TOP CAMPUS LIGHT FIXTURE, SHOWN FOR REFERENCE ONLY.
7. 8"X8" PULL BOX FOR UNDERGROUND CONDUIT SERVING GENERATOR CONTROLS CABLING. BOX SHALL HAVE MINIMUM ANSI TIER 5 RATING, 18" DEPTH WITH OPEN BOTTOM, "ELECTRIC" LOGO, AND BE SECURED BY HEX BOLTS. COORDINATE EXACT LOCATION IN FIELD.
8. 2" UNDERGROUND CONDUIT, 18" BELOW GRADE TO TOP MINIMUM, WITH GENERATOR CONTROLS CABLING. CONDUIT ROUTE SHALL BE CAREFULLY COORDINATED WITH NEW AND EXISTING UNDERGROUND UTILITIES. CONDUIT SHALL INSTALLED IN CONCRETE DUCTBANK, REFER TO DETAIL THIS SHEET.

CONTACT INFORMATION:

PROJECT MANAGER:
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701 17TH STREET
RADFORD, VA 24141
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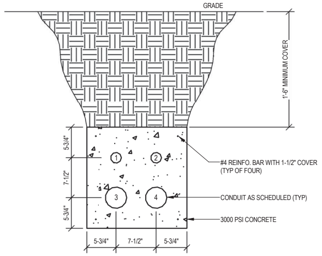
CAMPUS TELECOMMUNICATIONS:
JEFFRY LEGGE
RADFORD UNIVERSITY
(540) 831-7727

DIG NOTICE:

CONTACT MISS UTILITY AT 811, 1-800-552-7001, OR http://www.missutilityofvirginia.com NO LESS THAN 72 HOURS PRIOR TO EXCAVATION AND DO NOT DISTURB SOIL UNTIL DIG TICKET HAS BEEN PROCESSED.

EXISTING UTILITIES:

CONTRACTOR SHALL CAREFULLY COORDINATE UNGERGROUND CONDUIT AND DUCTBANK ROUTES WITH EXISTING AND NEW UTILITIES. CONTRACTOR SHALL DOCUMENT ALL UNDERGROUND UTILITIES ENCOUNTERED DURING THE WORK OF THIS PROJECT AND PROVIDE TO THE OWNER ON AS-BUILT DOCUMENTS.



NOTE: EMERGENCY AND NORMAL POWER CONDUITS AND COMMUNICATIONS CONDUIT SHALL SEPARATE AT RESPECTIVE PULL BOXES

DUCT BANK CONDUIT SCHEDULE		
NO.	MIN. SIZE	USE
1	2"	GENERATOR CONTROLS
2	1-1/4"	EM FEEDER FROM GENERATOR
3	4"	BUILDING SERVICE
4	4"	BUILDING SERVICE

SECONDARY DUCT BANK DETAIL - POCAHONTAS

NO SCALE

GRAPHIC SCALE

1"=20'-0" 20' 10' 0 20'

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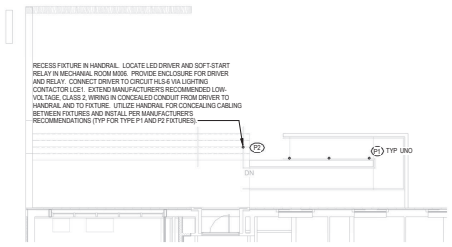
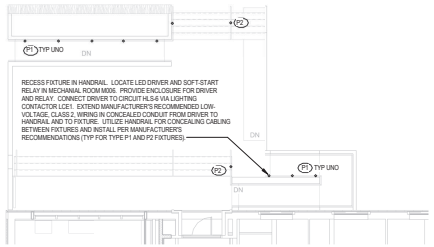
ELECTRICAL SITE PLAN - POCAHONTAS

E004P



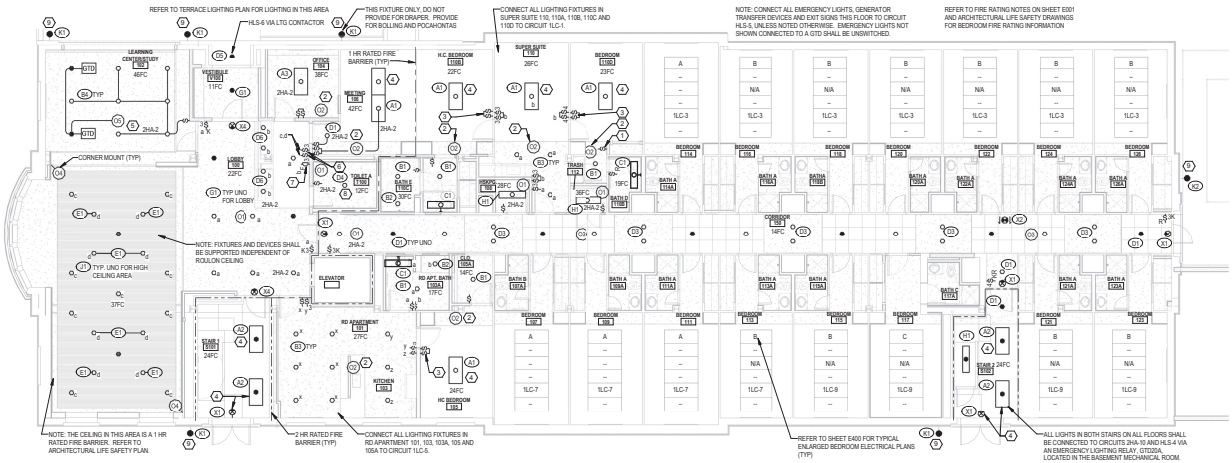
TERRACE LIGHTING PLAN - POCAHONTAS

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



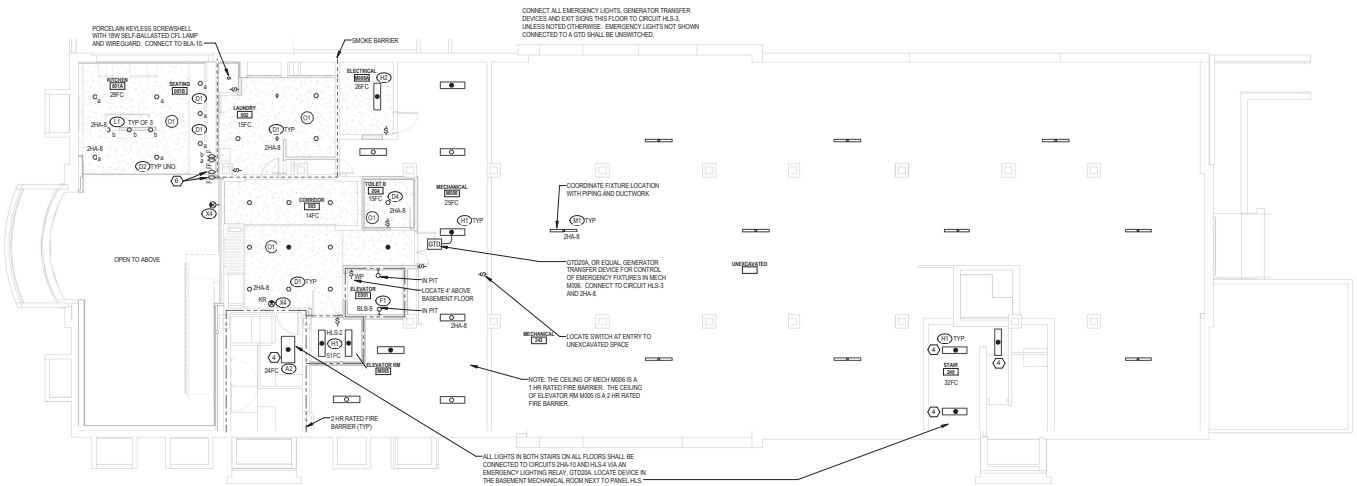
TERRACE LIGHTING PLAN - BOLLING

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



FIRST FLOOR LIGHTING PLAN

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



BASEMENT FLOOR LIGHTING PLAN

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

LIGHTING PLAN NOTES :

NOTE: ALL PLANS NOTES MAY APPLY TO THIS SHEET

1. CONNECT SWITCH(ES) IN SERIES WITH ROOM OCCUPANCY SENSOR SUCH THAT LIGHTS WILL BE ON ONLY WHEN SWITCH(ES) ARE CLOSED AND SENSOR CONTACT IS CLOSED. BATHROOM LIGHTING SWITCH SHALL BE INDEPENDENT OF ROOM OCCUPANCY SENSOR.
2. PROVIDE AUXILIARY HVAC RELAY IN OCCUPANCY SENSOR. MECHANICAL SHALL CONNECT RELAY TO THERMOSTAT CONTROLLING ROOM FAN COIL UNIT (FAN COIL UNIT SHOWN ON POWER PLANS).
3. CONNECT SWITCHES IN SERIES WITHROOM OCCUPANCY SENSOR SUCH THAT LIGHTS WILL BE ON ONLY WHEN SWITCHES ARE CLOSED AND SENSOR CONTACT IS CLOSED.
4. REUSE EXISTING OUTLET BOX AND CONDUIT FOR NEW FIXTURE.
5. ONE RELAY IN THE OCCUPANCY SENSOR SHALL CONTROL THE UNSWITCHED LIGHTING FIXTURES SUCH THAT THE FIXTURES ARE ON WHEN THE SPACE IS OCCUPIED AND OFF WHEN THE SPACE IS UNOCCUPIED. THE OTHER RELAY IN THE OCCUPANCY SENSOR SHALL CONTROL THE SWITCHED FIXTURES 'WA THE IN-SERIES SWITCH(ES).
6. THE COMMONS LIGHTING FIXTURES SHALL BE CONTROLLED BY DIMMERS ON THE BASEMENT LEVEL AND 3-WAY SWITCHES ON THE FIRST FLOOR. ONE SWITCH SHALL CONTROL THE TYPE J1 DOWNLIGHTS AND ONE SWITCH SHALL CONTROL THE TYPE E1 PENDANTS. FIXTURES SHALL ALSO BE CONTROLLED BY THE WALL MOUNTED TYPE O4 OCCUPANCY SENSORS. CONNECT TO CIRCUIT 2HA-2.
7. 0-10V DIMMER SWITCH FOR CONTROL OF THE TYPE D6 DOWNLIGHTS OVER THE DESK. NOTE: THE TYPE 'O1' OCCUPANCY SENSORS IN THE LOBBY AREA SHALL CONTROL THE TYPE D1 AND D6 FIXTURES. CONNEC' TO CIRCUIT 2HA-2.
8. PROVIDE FIXTURE WITH FIRE RATED PROTECTIVE ENCLOSURE PER THE SPECIFICATIONS.
9. MOUNT FIXTURE SUCH THAT TOP OF 'IXTURE IS AT BOTTOM OF HORIZONTAL LIMESTONE. FIELD VERIFY HEIGHT/LOCATION WITH ARCHITECT. FEED FIXTURE FROM INTERIOR CEILING SPACE. NO EXPOSED CONDUIT PERMITTED ON BUILDING EXTERIOR. CONNECT ALL TYPE K1 FIXTURES THIS SHEET TO HLS-6 VIA LTG CONTACTOR.

GRAPHIC SCALES

1/8"=1'-0"

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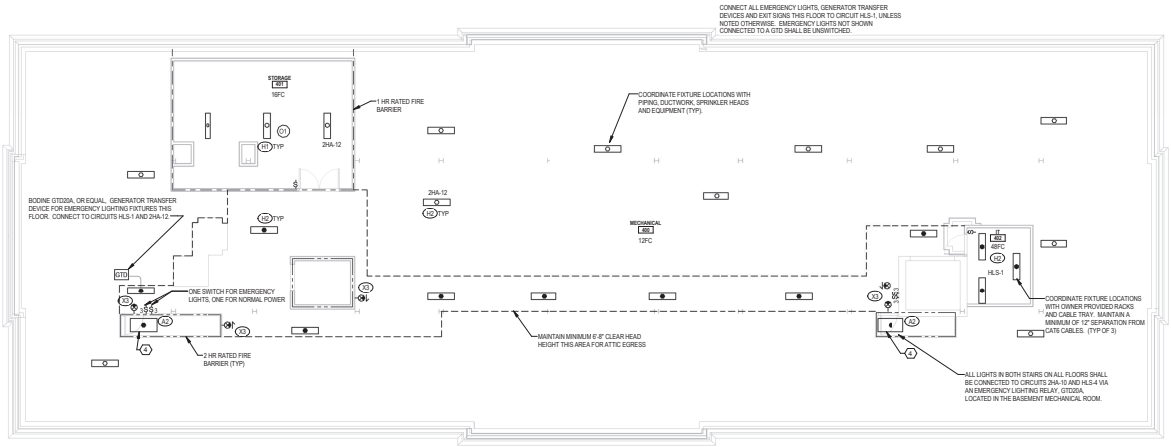
BASEMENT AND FIRST FLOOR LIGHTING PLANS

E101



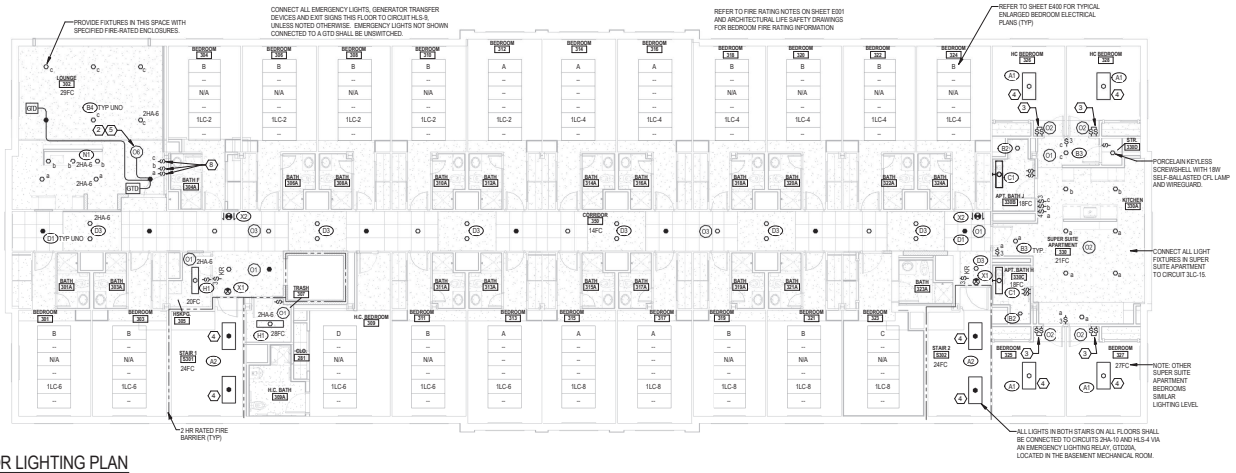
ATTIC FLOOR LIGHTING PLAN

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

LIGHTING PLAN NOTES :

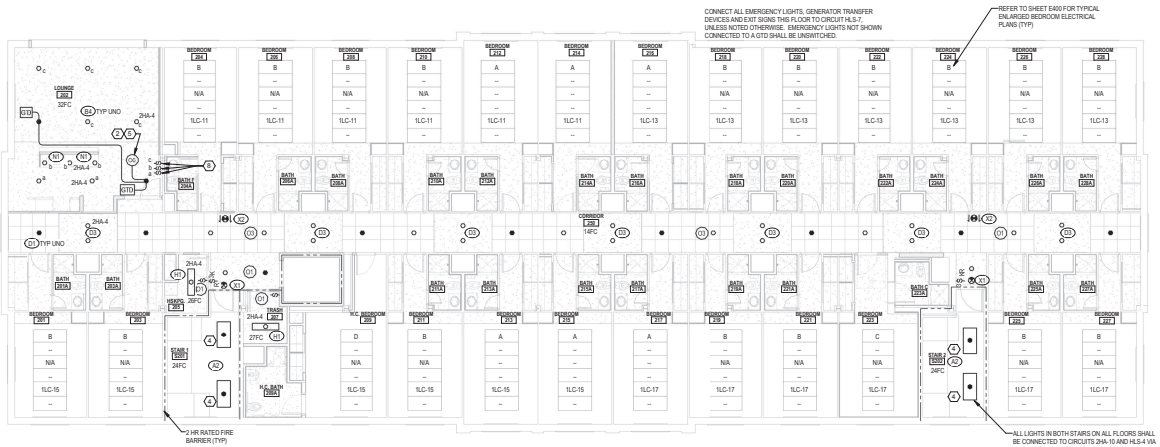
NOTE: ALL PLANS NOTES MAY APPLY TO THIS SHEET

1. CONNECT SWITCH(ES) IN SERIES WITH ROOM OCCUPANCY SENSOR SUCH THAT LIGHTS WILL BE ON ONLY WHEN SWITCH(ES) ARE CLOSED AND SENSOR CONTACT IS CLOSED. BATHROOM LIGHTING SWITCH SHALL BE INDEPENDENT OF ROOM OCCUPANCY SENSOR.
2. PROVIDE AUXILIARY HVAC RELAY IN OCCUPANCY SENSOR. MECHANICAL SHALL CONNECT RELAY TO THERMOSTAT CONTROLLING ROOM FAN COIL UNIT (FAN COIL UNIT SHOWN ON POWER PLANS).
3. CONNECT SWITCHES IN SERIES WITH ROOM OCCUPANCY SENSOR SUCH THAT LIGHTS WILL BE ON ONLY WHEN SWITCHES ARE CLOSED AND SENSOR CONTACT IS CLOSED.
4. REUSE EXISTING OUTLET BOX AND CONDUIT FOR NEW FIXTURE.
5. ONE RELAY IN THE OCCUPANCY SENSOR SHALL CONTROL THE UNSWITCHED LIGHTING FIXTURES SUCH THAT THE FIXTURES ARE ON WHEN THE SPACE IS OCCUPIED AND OFF WHEN THE SPACE IS UNOCCUPIED. THE OTHER RELAY IN THE OCCUPANCY SENSOR SHALL CONTROL THE SWITCHED FIXTURES VIA THE IN-SERIES SWITCH(ES).
6. THE COMMONS LIGHTING FIXTURES SHALL BE CONTROLLED BY DIMMERS ON THE BASEMENT LEVEL AND 3-WAY SWITCHES ON THE FIRST FLOOR. ONE SWITCH SHALL CONTROL THE TYPE J1 DOWNLIGHTS AND ONE SWITCH SHALL CONTROL THE TYPE E1 PENDANTS. FIXTURES SHALL ALSO BE CONTROLLED BY THE WALL MOUNTED TYPE O4 OCCUPANCY SENSORS. CONNECT TO CIRCUIT 2HA-2.
7. 0-10V DIMMER SWITCH FOR CONTROL OF THE TYPE D6 DOWNLIGHTS OVER THE DESK. NOTE: THE TYPE 'D1' OCCUPANCY SENSORS IN THE LOBBY AREA SHALL CONTROL THE TYPE D1 AND D6 FIXTURES. CONNECT TO CIRCUIT 2HA-2.
8. PROVIDE FIXTURE WITH FIRE RATED PROTECTIVE ENCLOSURE PER THE SPECIFICATIONS
9. MOUNT FIXTURE SUCH THAT TOP OF FIXTURE IS AT BOTTOM OF HORIZONTAL LIMESTONE FIELD VERIFY HEIGHT/LOCATION WITH ARCHITECT. FEED FIXTURE FROM INTERIOR CEILING SPACE. NO EXPOSED CONDUIT PERMITTED ON BUILDING EXTERIOR. CONNECT ALL TYPE K1 FIXTURES THIS SHEET TO HLS-6 VIA LTG CONTACTOR.



THIRD FLOOR LIGHTING PLAN

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



SECOND FLOOR LIGHTING PLAN

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

GRAPHIC SCALES

1/8"=1'-0"

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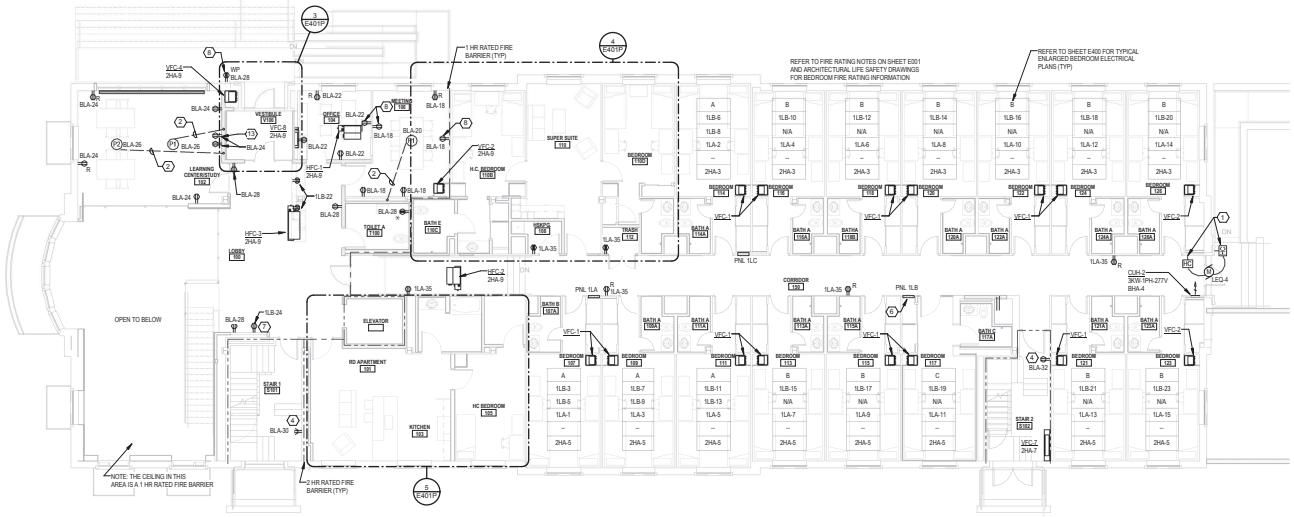
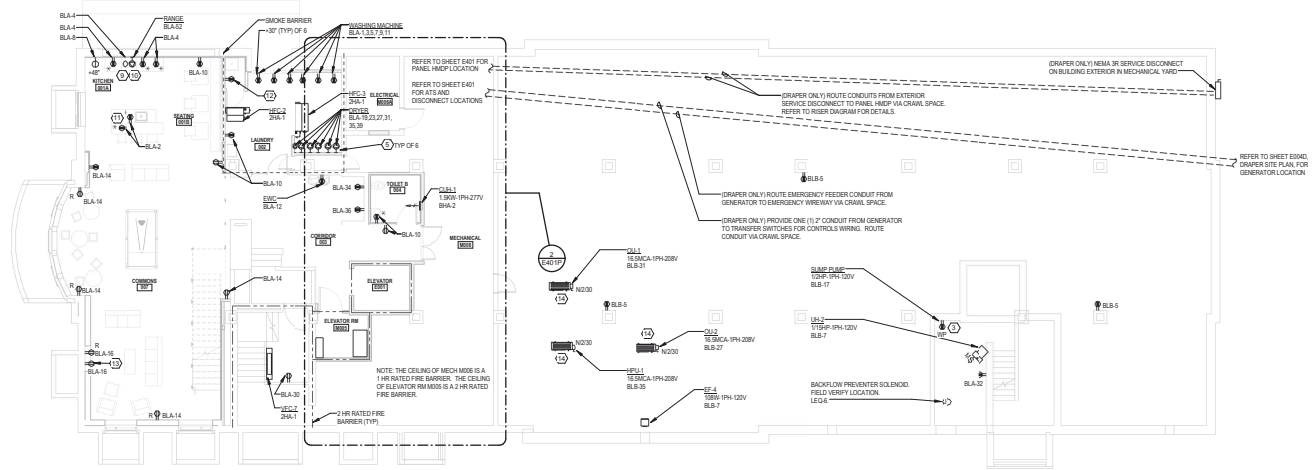
SECOND, THIRD AND ATTIC FLOOR LIGHTING PLANS

E102



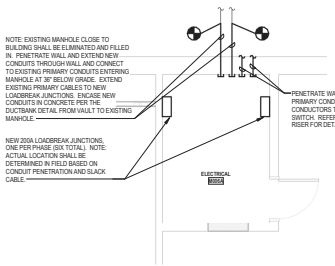
FIRST FLOOR POWER PLAN

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



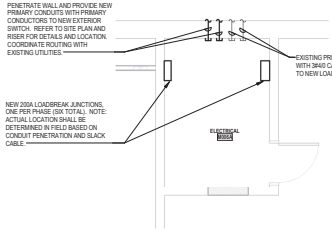
BASEMENT FLOOR POWER PLAN

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



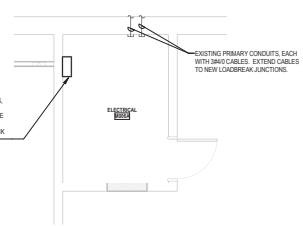
ENLARGED ELECTRICAL M006A POWER PLAN - BOLLING

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



ENLARGED ELECTRICAL M006A POWER PLAN - DRAPER

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



ENLARGED ELECTRICAL M006A POWER PLAN - POCAHONTAS

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

POWER PLAN NOTES :

NOTE: ALL PLAN NOTES MAY NOT APPLY TO THIS SHEET

1. POWER CONNECTION FOR HC DOOR OPERATOR. PROVIDE ALL CONDUITS AND BOXES REQUIRED FOR CONNECTIONS BETWEEN HC BUTTONS, DOOR OPERATOR AND CARD READER. POKE THROUGH EXISTING WALL WITH CONDUIT FROM BEHIND TO INSTALL NEW EXPOSED OUTLET BOX (NO EXPOSED EXTERIOR CONDUIT). RUN SINGLE-CHANNEL SURFACE RACEWAY FROM INTERIOR SIDE OF EXISTING WALL UP TO NEW CEILING (RUN ACROSS EXISTING CEILING WHERE NECESSARY IN EXISTING STAIRWELLS), THEN RUN CONDUIT TO ABOVE NEAREST ACCESSIBLE CEILING. COORDINATE ALL HC DOOR OPERATOR INSTALLATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.
2. PROVIDE ONE (1) 3/4" CONDUIT FOR POWER WIRING. ROUTE CONDUIT VIA NEW WALL AND UNDER FLOOR TO POKE-THRU DEVICE.
3. CONNECT SUMP ALARM, FURNISHED BY PLUMBING CONTRACTOR, TO CIRCUIT BLB-5. PROVIDE ALL REQUIRED WIRING AND CONNECTIONS BETWEEN ALARM CONTROLLER AND BELL. BELL SHALL BE LOCATED ON THE FIRST FLOOR. FIELD VERIFY LOCATION.
4. CUT BOX IN AND POKE THROUGH WALL WITH CONDUIT FROM CLOSET, CHASE, BULKHEAD OR UNFINISHED SPACE BEHIND.
5. PROVIDE NEMA 14-30R RECEPTACLE FOR DRYER. MOUNT DEVICE AT HEIGHT REQUIRED BY EQUIPMENT. NOTE: DRYERS ARE STACKED.
6. INSTALL NEW PANEL IN EXISTING PANEL LOCATION. EXISTING FEEDER CONDUIT MAY BE REUSED FOR NEW FEEDER CONDUCTORS.
7. PROVISION FOR WALL MOUNTED TELEVISION. MOUNT DEVICE 48" AFF (PROVISIONS IN LOBBY 100 SHALL BE AT 60" AFF). COORDINATE EXACT LOCATION WITH ARCHITECT IN FIELD.
8. FEED DEVICE FROM BELOW WITH SINGLE CHANNEL SURFACE RACEWAY.
9. PROVIDE NEMA 14-50R RECEPTACLE FOR RANGE. MOUNT DEVICE AT HEIGHT REQUIRED BY EQUIPMENT.
10. SWITCHED RECEPTACLE FOR RANGE HOOD. FIELD VERIFY HEIGHT PRIOR TO ROUGH-IN. PROVIDE TOGGLE SWITCH AT SAME HEIGHT AS ABOVE COUNTER RECEPTACLES. COORDINATE EXACT LOCATION WITH ARCHITECT.
11. INSTALL RECEPTACLE HORIZONTALLY, 2" BELOW COUNTERTOP. COORDINATE WITH CASEWORK INSTALLER.
12. PROVISIONS FOR LAUNDRY MONITORING SERVICE. COORDINATE EXACT LOCATION AND HEIGHT IN FIELD WITH OWNER. CONNECT TO CIRCUIT BLA-13.
13. PROVISION FOR WALL MOUNTED TELEVISION. MOUNT DEVICE 48" AFF. CONCEAL CIRCUIT IN WINDOW INFILL AND BULKHEAD. DO NOT USE SURFACE RACEWAY. COORDINATE EXACT LOCATION AND HEIGHT AND CIRCUIT ROUTING IN FIELD WITH ARCHITECT.
14. OUTDOOR UNIT (OU) FEEDS INDOOR UNIT (IU). PROVIDE MANUFACTURER'S RECOMMENDED WIRING IN 1" CONDUIT FROM OUTDOOR UNIT TO INDOOR UNIT.
15. WITH A 2" WIDE YELLOW LINE, PAINT THE NEC REQUIRED CLEARANCE ON THE FLOOR AS INDICATED. STENCIL "NO STORAGE - ELECTRICAL WORKING SPACE" IN 2" HIGH YELLOW LETTERS CENTERED IN THE SPACE OUTLINED AREA.
16. VFD'S FOR ERV-1 AND ERV-2 RECOVER WHEELS SHALL BE FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATION IN FIELD. LINE SIDE POWER FOR VFD SHALL COME FROM DISCONNECT SWITCH AT WIREWAY TAP NOTED WITH RES*ECTIVE ERV. LOAD SIDE POWER SHALL FEED TO RESPECTIVE ERV RECOVERY WHEEL.

VFC/HFC RATINGS

MARK	HP	VOLTAGE	PHASE
VFC-1	1/8	277	1
VFC-2	1/8	277	1
VFC-3	1/8	277	1
VFC-4	1/3	277	1
VFC-5	1/3	277	1
VFC-6	1/10	277	1
VFC-7	1/10	277	1
VFC-8	1/10	277	1
HFC-1	1/10	277	1
HFC-2	1/10	277	1
HFC-3	1/10, 1/30	277	1

GRAPHIC SCALES

1/4"=1'-0" 0 2 4 6

1/8"=1'-0" 0 2 4 8 12

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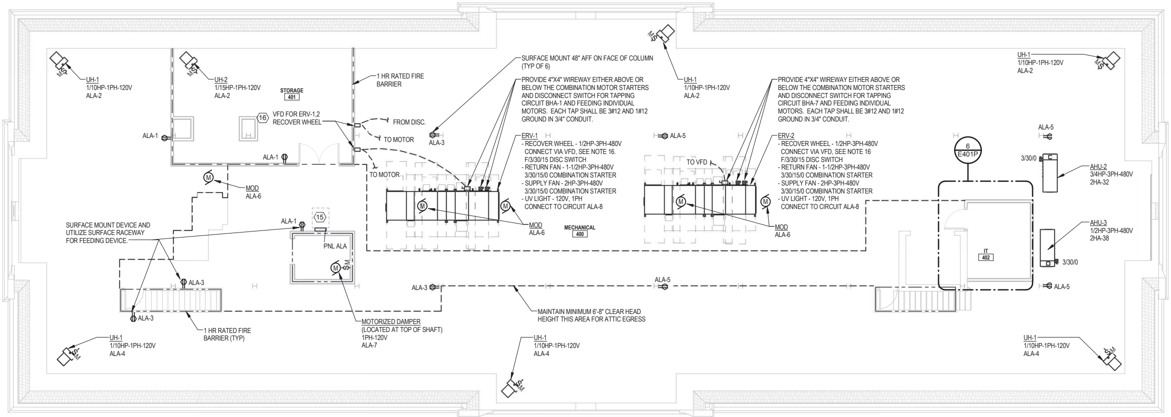
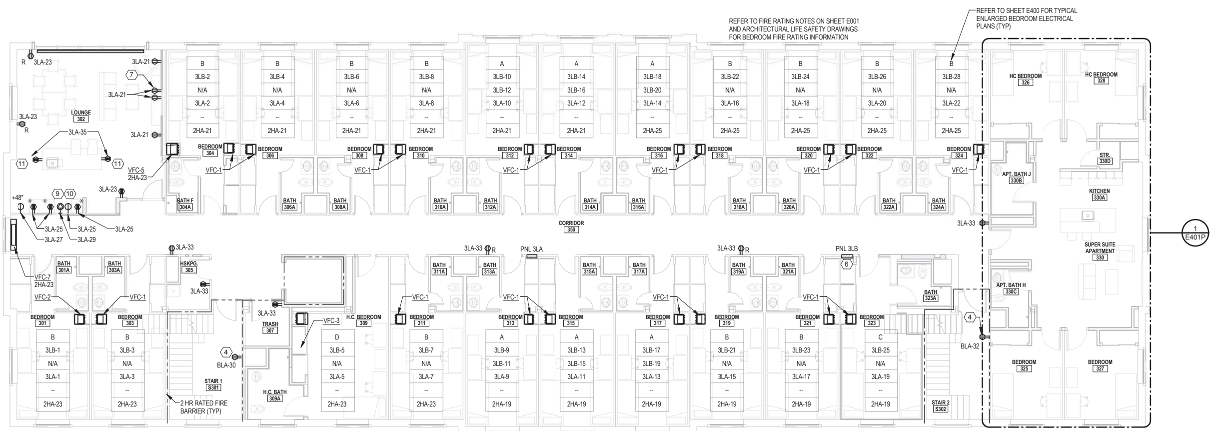
BASEMENT AND FIRST FLOOR POWER PLANS

E201



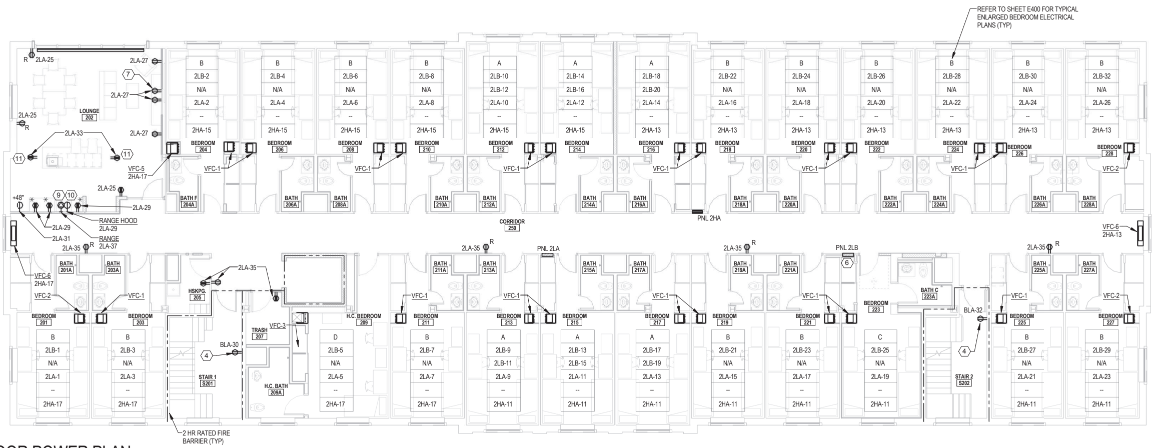
ATTIC FLOOR POWER PLAN

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



THIRD FLOOR POWER PLAN

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



SECOND FLOOR POWER PLAN

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

POWER PLAN NOTES :⬡

NOTE: ALL PLAN NOTES MAY NOT APPLY TO THIS SHEET

1. POWER CONNECTION FOR HC DOOR OPERATOR. PROVIDE ALL CONDUITS AND BOXES REQUIRED FOR CONNECTIONS BETWEEN HC BUTTONS, DOOR OPERATOR AND CARD READER. POKE THROUGH EXISTING WALL WITH CONDUIT FROM BEHIND TO INSTALL NEW EXPOSED OUTLET BOX (NO EXPOSED EXTERIOR CONDUIT). RUN SINGLE-CHANNEL SURFACE RACEWAY FROM INTERIOR SIDE OF EXISTING WALL UP TO NEW CEILING (RUN ACROSS EXISTING CEILING WHERE NECESSARY IN EXISTING STAIRWELLS), THEN RUN CONDUIT TO ABOVE NEAREST ACCESSIBLE CEILING. COORDINATE ALL HC DOOR OPERATOR INSTALLATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.
2. PROVIDE ONE (1) 3/4" CONDUIT FOR POWER WIRING. ROUTE CONDUIT VIA NEW WALL AND UNDER FLOOR TO POKE-THRU DEVICE.
3. CONNECT SUMP ALARM, FURNISHED BY PLUMBING CONTRACTOR, TO CIRCUIT BLB-5. PROVIDE ALL REQUIRED WIRING AND CONNECTIONS BETWEEN ALARM CONTROLLER AND BELL. BELL SHALL BE LOCATED ON THE FIRST FLOOR. FIELD VERIFY LOCATION.
4. CUT BOX IN AND POKE THROUGH WALL WITH CONDUIT FROM CLOSET, CHASE, BULKHEAD OR UNFINISHED SPACE BEHIND.
5. PROVIDE NEMA 14-30R RECEPTACLE FOR DRYER. MOUNT DEVICE AT HEIGHT REQUIRED BY EQUIPMENT. NOTE: DRYERS ARE STACKED.
6. INSTALL NEW PANEL IN EXISTING PANEL LOCATION. EXISTING FEEDER CONDUIT MAY BE REUSED FOR NEW FEEDER CONDUCTORS.
7. PROVISION FOR WALL MOUNTED TELEVISION. MOUNT DEVICE 48" AFF (PROVISIONS IN LOBBY 100 SHALL BE AT 60" AFF). COORDINATE EXACT LOCATION WITH ARCHITECT IN FIELD.
8. FEED DEVICE FROM BELOW WITH SINGLE CHANNEL SURFACE RACEWAY.
9. PROVIDE NEMA 14-50R RECEPTACLE FOR RANGE. MOUNT DEVICE AT HEIGHT REQUIRED BY EQUIPMENT.
10. SWITCHED RECEPTACLE FOR RANGE HOOD. FIELD VERIFY HEIGHT PRIOR TO ROUGH-IN. PROVIDE TOGGLE SWITCH AT SAME HEIGHT AS ABOVE COUNTER RECEPTACLES. COORDINATE EXACT LOCATION WITH ARCHITECT.
11. INSTALL RECEPTACLE HORIZONTALLY, 2" BELOW COUNTERTOP. COORDINATE WITH CASEWORK INSTALLER.
12. PROVISIONS FOR LAUNDRY MONITORING SERVICE. COORDINATE EXACT LOCATION AND HEIGHT IN FIELD WITH OWNER. CONNECT TO CIRCUIT BLA-13.
13. PROVISION FOR WALL MOUNTED TELEVISION. MOUNT DEVICE 48" AFF. CONCEAL CIRCUIT IN WINDOW INFILL AND BULKHEAD. DO NOT USE SURFACE RACEWAY. COORDINATE EXACT LOCATION AND HEIGHT AND CIRCUIT ROUTING IN FIELD WITH ARCHITECT.
14. OUTDOOR UNIT (OU) FEEDS INDOOR UNIT (IU). PROVIDE MANUFACTURER'S RECOMMENDED WIRING IN 1" CONDUIT FROM OUTDOOR UNIT TO INDOOR UNIT.
15. WITH A 2" WIDE YELLOW LINE, PAINT THE NEC REQUIRED CLEARANCE ON THE FLOOR AS INDICATED. STENCIL "NO STORAGE - ELECTRICAL WORKING SPACE" IN 2" HIGH YELLOW LETTERS CENTERED IN THE SPACE OUTLINED AREA.
16. VFD'S FOR ERV-1 AND ERV-2 RECOVER WHEELS SHALL BE FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATION IN FIELD. LINE SIDE POWER FOR VFD SHALL COME FROM DISCONNECT SWITCH AT WIREWAY TAP NOTED WITH RESPECTIVE ERV. LOAD SIDE POWER SHALL FEED TO RESPECTIVE ERV RECOVERY WHEEL.

VFC/HFC RATINGS			
MARK	HP	VOLTAGE	PHASE
VFC-1	1/8	277	1
VFC-2	1/8	277	1
VFC-3	1/8	277	1
VFC-4	1/3	277	1
VFC-5	1/3	277	1
VFC-6	1/10	277	1
VFC-7	1/10	277	1
VFC-8	1/10	277	1
HFC-1	1/10	277	1
HFC-2	1/10	277	1
HFC-3	1/10,1/30	277	1

GRAPHIC SCALES

0 4' 8' 12'

1/8"=1'-0"

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RU
RADFORD UNIVERSITY

RENOVATION OF THREE RESIDENCE HALLS POCAHONTAS, BOLLING, & DRAPER HALLS

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code	217-17565
VMDO Project Number	1115

COMMONWEALTH OF VIRGINIA
05.19.14
RYAN W. HOLLOWAY
Lic. No. 048500
PROFESSIONAL ENGINEER

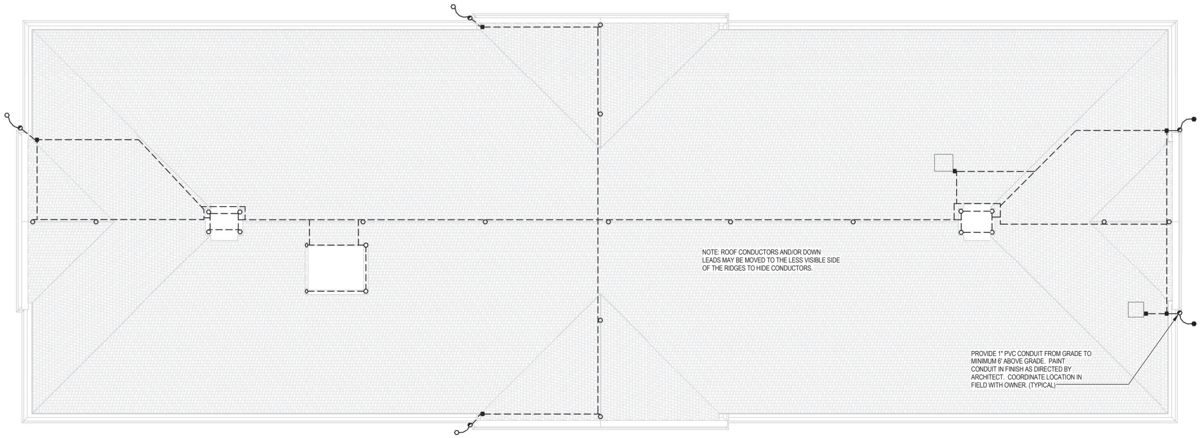
Checked By	RGW
Drawn By	BSM

ISSUES AND REVISIONS

NO.	SUBMITTAL	DATE
5	BID DOCUMENTS	05.19.14

SECOND, THIRD AND ATTIC FLOOR POWER PLANS

E202



LIGHTNING PROTECTION PLAN

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

LIGHTNING PROTECTION LEGEND

SYMBOL	DESCRIPTION
o	AIR TERMINAL LOCATION
— —	ROOF CONDUCTOR RUN
■	BONDING CONNECTION
⊘	DOWN LEAD TO GRADE
⌐●	GROUND ROD LOCATION

LIGHTNING PROTECTION SYSTEM NOTES:

A. THE LIGHTNING PROTECTION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH UL96A AND NFPA 780. A UL MASTER LABEL CERTIFICATE SHALL BE PROVIDED FOR THE SYSTEM.

B. METAL OBJECTS ON THE ROOF SHALL BE BONDED TO THE LIGHTNING PROTECTION SYSTEM AS REQUIRED BY UL96A. ALL INCOMING METALLIC PIPING AND THE GROUNDING SYSTEMS FOR THE POWER, TELEPHONE AND CATV SHALL BE BONDED TO THE LIGHTNING PROTECTION GROUNDING SYSTEM WITH MAIN SIZE COPPER CONDUCTORS.

C. ALL CONDUCTORS AND TERMINALS SHALL BE COPPER. ALUMINUM MAY ONLY BE USED TO PREVENT CONTACT WITH DISSIMILAR MATERIALS. CABLE CONNECTIONS FROM ALUMINUM TO COPPER SHALL BE MADE VIA UL LISTED BIMETALLIC FITTINGS.

D. REFER TO SPECIFICATONS SECTION 26 4113.13 "LIGHTNING PROTECTION FOR BUILDINGS" FOR ADDITIONAL SYSTEM REQUIREMENTS.

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Checked By RWH
Drawn By BSM

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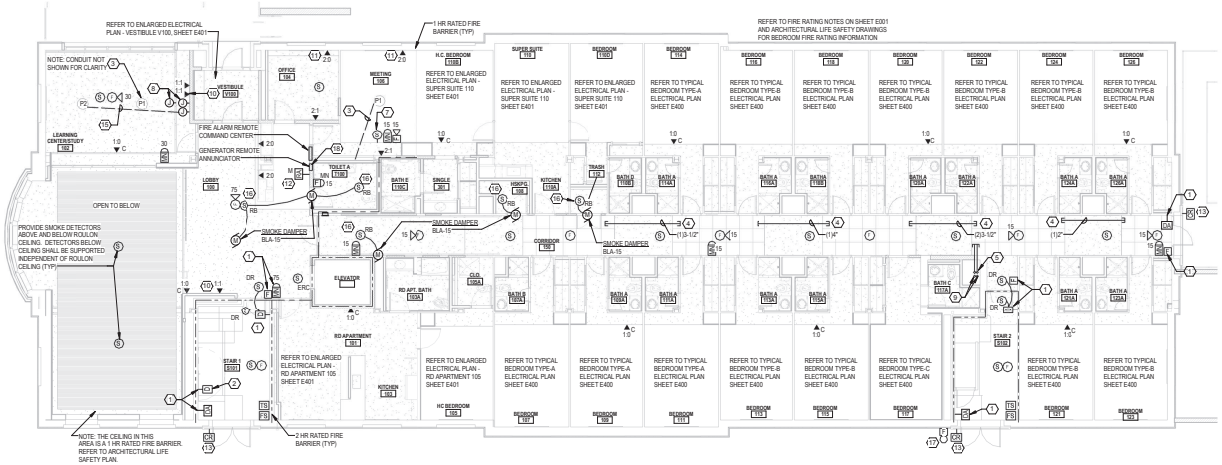
LIGHTNING PROTECTION PLAN

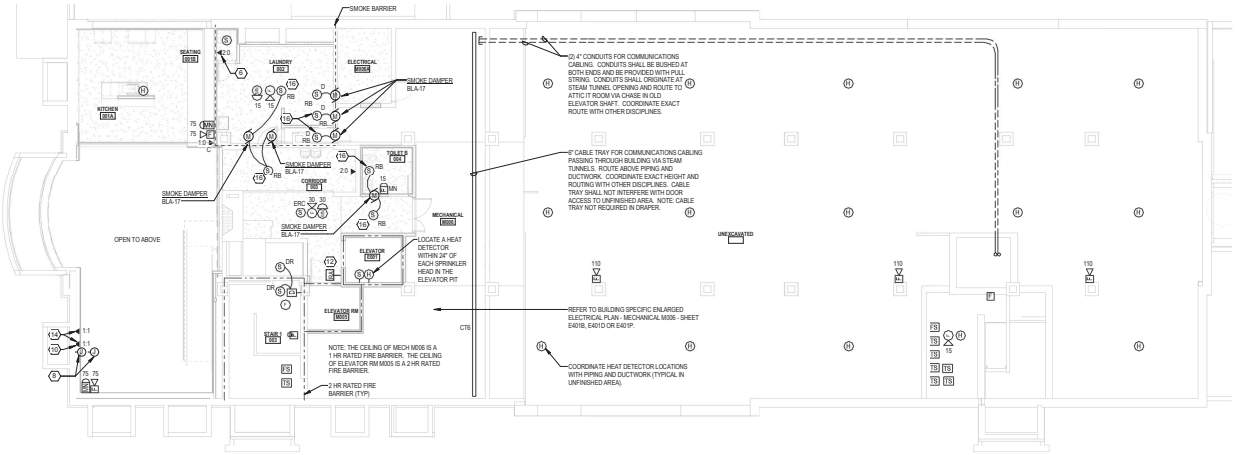
E203

0 4' 8' 12'
1/8"=1'-0"



FIRST FLOOR FIRE ALARM AND TELECOMMUNICATIONS PLAN

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



BASEMENT FLOOR FIRE ALARM AND TELECOMMUNICATIONS PLAN

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

FIRE ALARM AND TELECOMM. PLAN NOTES:

NOTE: ALL PLAN NOTES MAY NOT APPLY TO THIS SHEET

1. CUT BOX IN AND POKE THROUGH WITH CONDUIT FROM CLOSET, CHASE, BULKHEAD OR UNFINISHED SPACE BEHIND.
2. FIRE ALARM HOLD-OPEN DEVICE FOR GATE. COORDINATE EXACT LOCATION IN FIELD WITH GATE INSTALLER. DEVICE SHALL RELEASE GATE UPON SIGNAL FROM FIRE ALARM.
3. PROVIDE ONE (1) 1-1/4" CONDUIT FOR COMMUNICATIONS CABLING. ROUTE CONDUIT VIA NEW WALL AND UNDER FLOOR TO POKE-THRU DEVICE. EXTEND CONDUIT TO ACCESSIBLE CEILING SPACE IN CORRIDOR. PROVIDE TWO DATA/PHONE CABLES IN POKE-THRU AND TERMINATE AS SPECIFIED.
4. PROVIDE ABOVE CEILING CONDUIT FOR DATA/CATV CABLES FROM ACCESSIBLE CEILING AREA TO ACCESSIBLE CEILING AREA, ROUTING CONDUIT IN JOIST WEBBING. BUSH CONDUIT ENDS. COORDINATE EXACT ROUTE WITH OTHER DISCIPLINES. PROVIDE CONDUIT SIZE AS INDICATED. THESE CONDUITS SHALL NOT BE USED FOR FIRE ALARM CABLING. REFER TO SPECIFICATIONS FOR ADDITIONAL CONDUIT REQUIREMENTS.
5. CONDUITS SHALL ORIGINATE IN ATTIC IT ROOM AND BE ROUTED TO AREA ABOVE CORRIDOR CEILING VIA CHASE.
6. PROVISIONS FOR LAUNDRY MONITORING SYSTEM. COORDINATE EXACT LOCATION AND HEIGHT IN FIELD WITH OWNER. PROVIDE 18" X 18" X 8" LOCKABLE ENCLOSURE FOR LAUNDRY SYSTEM. EXTEND ONE (1) 1" CONDUIT FROM ENCLOSURE TO EACH WASHER AND DRYER. PROVIDE RECESSED DOUBLE GANG OUTLET BOX AT EACH WASHER AND DRYER. COORDINATE EXACT HEIGHT AND LOCATION OF BOX IN FIELD WITH OWNER. CONDUIT SHALL BE ROUTED CONCEALED TO ENCLOSURE.
7. MOUNT SMOKE DETECTOR IN BULKHEAD SUCH THAT TOP OF SMOKE DETECTOR IS 6" BELOW CEILING. SPEAKER/STROBE AND HASS NOTIFICATION DEVICE SHALL ALIGN HORIZONTALLY.
8. PROVISIONS FOR WALL MOUNTED TELEVISION. PROVIDE ONE RECESSED DOUBLE GANG OUTLET BOX AT 18" AFF AND ONE AT 48" OR AT HEIGHT AS DIRECTED BY OWNER (PROVISIONS IN LOBBY 100 SHALL BE AT 60"). PROVIDE TWO (2) 1-1/4" CONDUITS, WITH PULL STRING, BETWEEN BOXES FOR OWNER PROVIDED CABLING. COORDINATE EXACT LOCATION OF BOXES IN FIELD WITH ARCHITECT.
9. CONDUITS FROM FLOORS BELOW ROUTED TO ATTIC IT ROOM VIA CHASE. COORDINATE CONDUIT ROUTING IN FIELD.
10. PROVISIONS FOR WALL MOUNTED TELEVISION, MOUNTED AT 48" AFF (PROVISIONS IN LOBBY 100 SHALL BE AT 60"). COORDINATE EXACT HEIGHT/LOCATION IN FIELD WITH ARCHITECT.
11. FEED DEVICE FROM BELOW WITH SINGLE CHANNEL SURFACE RACEWAY.
12. CONNECT ELEVATOR RESCUE ASSISTANCE DEVICE TO CIRCUIT LLS-1. REFER TO SPECIFICATIONS FOR ADDITIONAL WIRING REQUIREMENTS.
13. POKE THROUGH EXISTING WALL WITH CONDUIT FROM BEHIND TO INSTALL NEW EXPOSED OUTLET BOX (NO EXPOSED EXTERIOR CONDUIT). RUN SINGLE-CHANNEL SURFACE RACEWAY FROM INTERIOR SIDE OF EXISTING WALL UP TO NEW CEILING (RUN ACROSS EXISTING CEILING WHERE NECESSARY IN EXISTING STAIRWELLS), THEN RUN CONDUIT TO ABOVE NEAREST ACCESSIBLE CEILING. ALSO PROVIDE ALL RACEWAYS AND BOXES REQUIRED TO INTERFACE CARD READERS WITH ELECTRIC STRIKES - CONNECT ELECTRIC STRIKES AND CARD READER POWER SUPPLIES (BY OTHERS) TO CIRCUIT LEG-2. PROVIDE ALL RACEWAYS AND BOXES REQUIRED FOR CABLING TO OWNER-FURNISHED DOOR ALARM HORN JUST INSIDE THE DOOR AT OR ABOVE THE CEILING. COORDINATE ALL DOOR SECURITY INSTALLATIONS WITH OWNER PRIOR TO ROUGH-IN.
14. UTILIZE WINDOW INFILL AND BULKHEAD FOR CONCEALING CONDUITS AND WIRING. DO NOT UTILIZE SURFACE RACEWAY IN THE COMMONS AREA. VERIFY RACEWAY ROUTE IN FIELD WITH ARCHITECT.
15. PROVIDE ONE 1-1/4" CONDUIT WITH PULL STRING FROM POKE-THRU TO JUNCTION BOX ON WALL. WALL MOUNTED BOX SHALL BE RECESSED DOUBLE GANG MOUNTED AT 6'-0" AFF NEXT TO OTHER TV PROVISIONS. FIELD VERIFY EXACT LOCATION. PROVIDE ADAPTER PLATES FOR AN HDMI INPUT AND VGA INPUT IN POKE-THRU DEVICE.
16. PROVIDE SMOKE DETECTOR (OR DUCT SMOKE DETECTOR, AS INDICATED) WITH RELAY FOR CONTROL OF SMOKE DAMPER(S). COORDINATE WHICH DETECTORS CONTROL SPECIFIC DAMPERS WITH DAMPER INSTALLER. AS AN OPTION TO THE CONTRACTOR, CONTROL MODULES MAY BE PROVIDED FOR CONTROL OF SMOKE DAMPERS. FIRE ALARM SHOP DRAWING SUBMITTAL SHALL CLEARLY IDENTIFY METHOD OF CONTROL AND DAMPER CONTROLLED.
17. CONNECT SPRINKLER SYSTEM ELECTRONIC BELL TO CIRCUIT LLS-8. FIELD VERIFY EXACT LOCATION WITH SPRINKLER SYSTEM INSTALLER. SURFACE RACEWAY IS NOT PERMITTED ON BUILDING EXTERIOR. UTILIZE EXISTING CHASE FOR CONCEALING CIRCUIT. NOTIFY ARCHITECT IF CIRCUIT CANNOT BE CONCEALED.
18. LOCATE GENERATOR REMOTE ANNUNCIATOR PANEL AT 66" TO TOP. ELEVATOR ASSISTANCE MASTER STATION SHALL BE LOCATED BELOW GENERATOR REMOTE ANNUNCIATOR PANEL. COORDINATE EXACT LOCATION OF GENERATOR REMOTE ANNUNCIATOR, FIRE ALARM REMOTE COMMAND CENTER AND ELEVATOR ASSISTANCE MASTER STATION IN FIELD WITH ARCHITECT.

NOTE: THE CONTRACTOR SHALL BID AND INSTALL THE FIRE PROTECTION SYSTEM AS SHOWN IN THE DOCUMENTS. DEVIATIONS IN MATERIALS, LOCATIONS, CONFIGURATIONS OR SIZES PROPOSED BY THE CONTRACTOR WILL BE REVIEWED UNDER THE PROVISIONS OF SECTION 26 OF THE GENERAL CONDITIONS AS A 'SUBSTITUTION'.

GRAPHIC SCALES

1/8"=1'-0"

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BASEMENT AND FIRST FLOOR FIRE ALARM AND TELECOMMUNICATIONS PLANS

E301