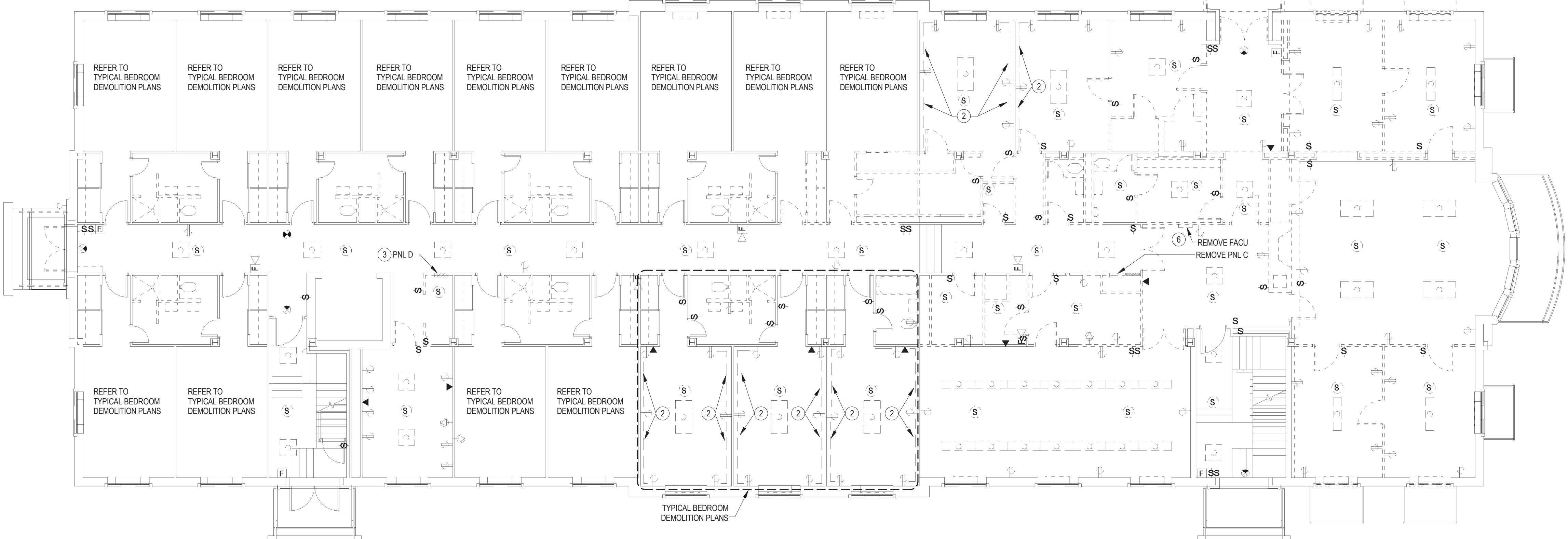


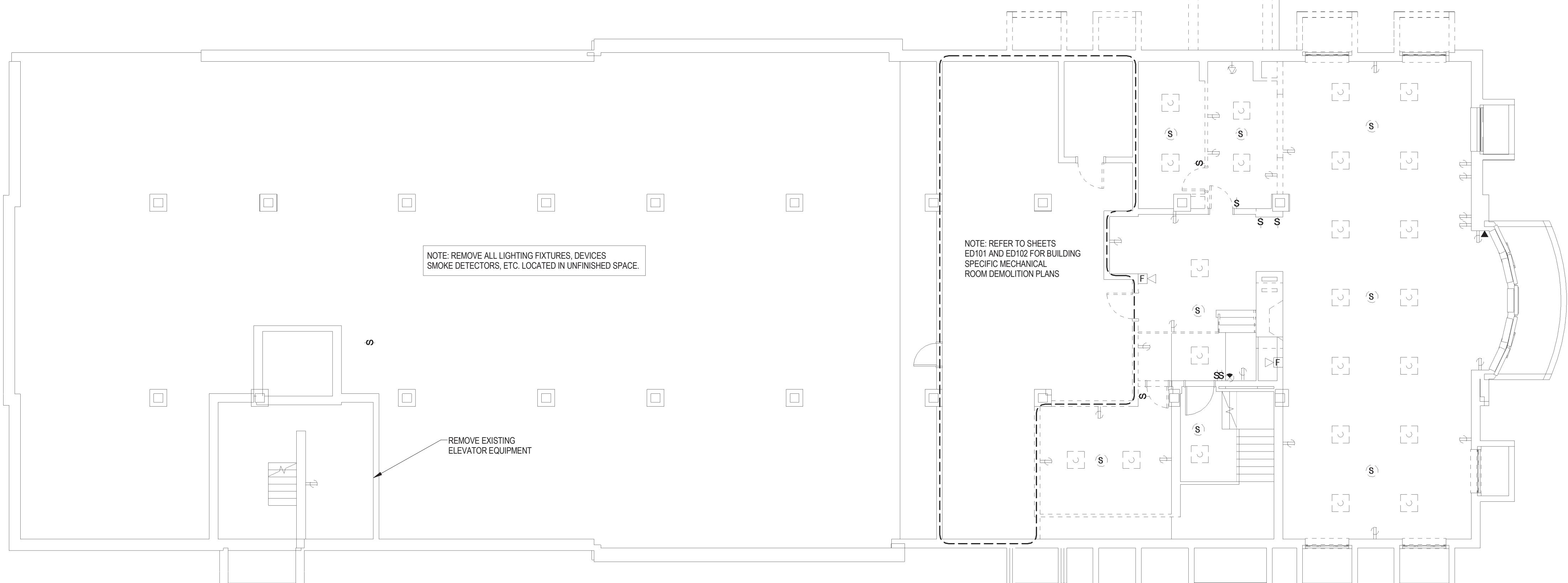
BASEMENT MECHANICAL ROOM ELECTRICAL DEMOLITION PLAN - DRAPER

SCALE: 1/8" =



FIRST FLOOR ELECTRICAL DEMOLITION PLAN

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



BASEMENT FLOOR ELECTRICAL DEMOLITION PLAN

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.
	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.
	FIRE ALARM MANUAL PULL STATION, WALL.
	FIRE ALARM HORN, WALL MOUNTED
	FIRE ALARM VISUAL DEVICE, WALL MOUNTED.
	SMOKE DETECTOR, CEILING.
	DEMOLITION PLAN NOTE
FACU	FIRE ALARM CONTROL UNIT
PNL	PANEL
ER	EXISTING TO REMAIN

ELECTRICAL DEMOLITION LEGEND

SYMBOL	DESCRIPTION
	LIGHTING FIXTURE, CEILING MOUNTED. SYMBOL SIZE VARIES WITH LIGHTING FIXTURE TYPE.
	EXIT SIGN, CEILING MOUNTED.
	LIGHTING FIXTURE, WALL MOUNTED.
	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.
	FIRE ALARM MANUAL PULL STATION, WALL.
	FIRE ALARM HORN, WALL MOUNTED
	FIRE ALARM VISUAL DEVICE, WALL MOUNTED.
	SMOKE DETECTOR, CEILING.
	DEMOLITION PLAN NOTE
FACU	FIRE ALARM CONTROL UNIT
PNL	PANEL
ER	EXISTING TO REMAIN

VMDO ARCHITECTS

00 E MARKET STREET
CHARLOTTESVILLE, VA 22902
434.296.5684 F 434.296.4496
www.vmdo.com

RENOVATION OF THREE RESIDENCE HALLS RAPER HALL

RENOVATION OF THREE RESIDENCE HALLS DRAPER HALL

RADFORD UNIVERSITY
RADFORD, VIRGINIA

217-17565-002
1115

GENERAL ELECTRICAL DEMOLITION NOTES :

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.

ELECTRICAL DEMOLITION PLAN NOTES : 0

- 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 E402B, 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.

ISSUES AND REVISIONS		
NO.	SUBMITTAL	DATE
	BID DOCUMENTS	05.19.2023
1	Addendum 1	06.15.2023
2	Addendum 2	06.22.2023
3	Addendum 3	06.29.2023
	CONSTRUCTION SET	05.01.2023

BASEMENT AND FIRST FLOOR ELECTRICAL DEMOLITION PLANS

ED101



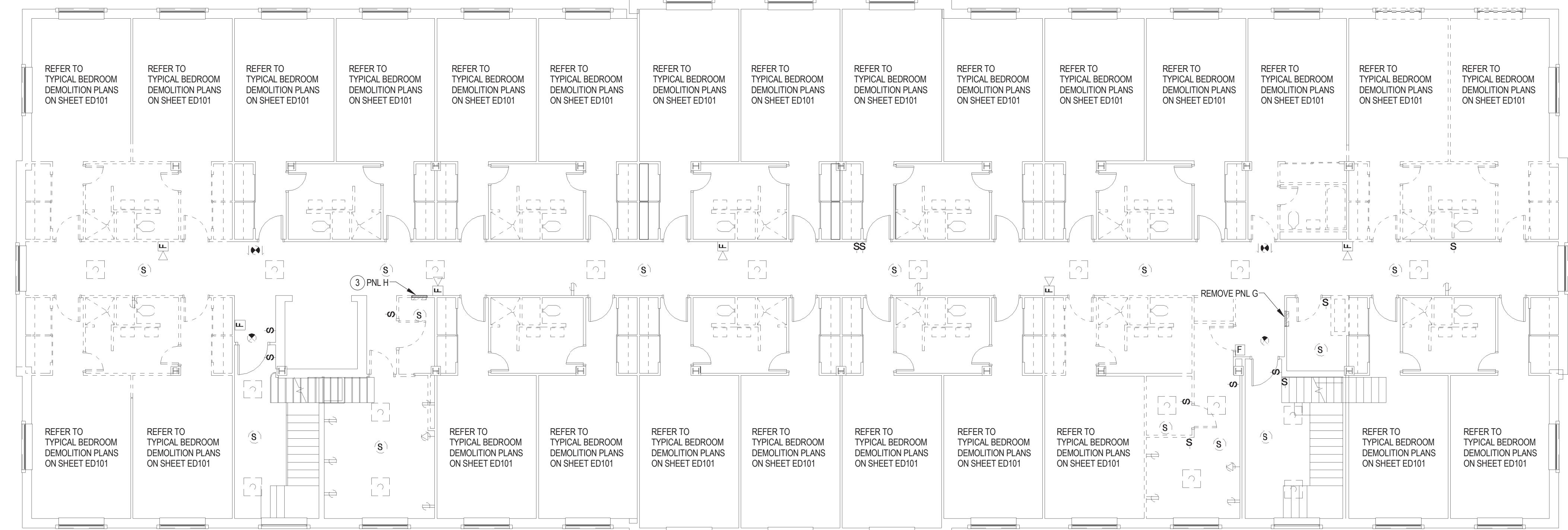
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101
Roanoke, Virginia 24011
Ph: (540) 342-1816
Fax: (540) 344-3410
Comm. No.: 13111
©Lawrence Perry and Associates, Inc.

RADFORD UNIVERSITY

RENOVATION OF THREE
RESIDENCE HALLS
DRAPER HALL

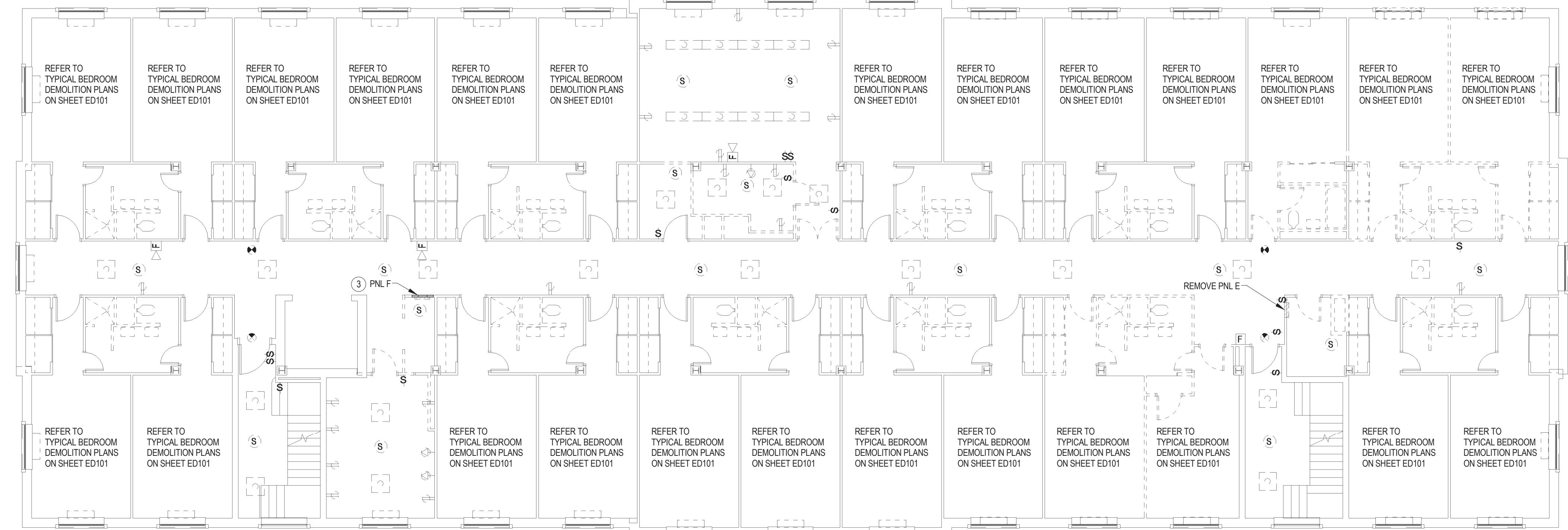
ATTIC FLOOR ELECTRICAL DEMOLITION PLAN

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 :

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 WALS 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/HOME/CAT OUTLETS AND ASSOCIATED CABLES (EXCEPT AT HEAD-END LOCATION)
 - FIRE ALARM DEVICES (MANUAL PULL STATIONS, SMOKE AND HEAT DETECTORS, NOTIFICATION APPLIANCES, ETC.) AND FAACP
 - NOTE: IN DRAPER, RETURN THE FAACP 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.
 - DATAPHONE AND CAT 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 BUCHANAN HOUSE SHALL BE RETAINED AND EXTENDED TO NEW DISCONNECT SWITCH. REFER TO ROLLING RISER DIAGRAM, SHEET E4028, FOR DETAILS. COORDINATE PHASING AND OUTAGES WITH OWNER SO AS TO MINIMIZE DOWN TIME AT BUCHANAN HOUSE.
6. FOR DRAPER ONLY, REMOVE EXISTING FAACP AND RETURN TO OWNER.

Checked By: RGW
Drawn By: BSM

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.

GRAPHIC SCALE - 1/32" = 1'-0"
0 32' - 0" 64' - 0" 96' - 0"

ISSUES AND REVISIONS		
NO.	SUBMITTAL	DATE
1	BID DOCUMENTS Addendum 1	05.19.14
2	Addendum 2	06.19.14
3	Addendum 3	06.24.14
	CONSTRUCTION SET	06.25.14
		05.01.15

SECOND, THIRD AND
ATTIC FLOOR
DEMOLITION PLANS

ED102

GENERAL NOTES:

- 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.
- 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.
- CAREFULLY COORDINATE ALL ELECTRICAL EQUIPMENT LOCATIONS WITH DUCTWORK, PIPING AND MECHANICAL EQUIPMENT. MAINTAIN ALL CLEARANCES AND SPACES REQUIRED BY THE NEC.
- WHERE MULTIPLE CIRCUITS ARE COMBINED IN A SINGLE CONDUIT, DERATE CONDUCTORS PER NEC. SHARING OF NEUTRAL CONDUCTORS IS NOT PERMITTED.
- REFER TO SPECIFICATIONS SECTION 205019 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.
- 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, STICK DOT ON THE VERTICAL PORTION OF FIXTURE LOVER OR ON TOP OF THE LENS.
- WHERE MULTIPLE BALLASTS ARE INDICATED FOR MULTILAMP T8 FIXTURES, THE OUTER LAMPS SHALL BE ON ONE BALLAST AND SWITCH, AND THE INNER LAMP(S) ON THE OTHER BALLAST AND SWITCH.
- 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.
- WHERE OCCUPANCY SENSORS ARE 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 SWITCHES IF PRESENT).
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL PANELBOARD AND SWITCHBOARD FEEDER ENTRANCE LOCATIONS (TOP, BOTTOM, SIDE).
- 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.
- DUCT SMOKE DETECTORS FOR AIR-HANDLING EQUIPMENT SHALL BE INSTALLED IN THE DUCTS) BEFORE ANY BRANCH TAKE-OFFS. CONTROL WIRING FROM SMOKE DETECTOR 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.
- ELEVATOR FIRE ALARM INTERFACE HALL 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, CALLING THE ELEVATOR TO RETURN TO THE DESIGNATED ALTERNATE FLOOR, PAN AND OPEN DOORS. HEAT DETECTORS IN ELEVATOR MACHINE ROOMS AND ELEVATOR HOISTWAYS AND PITS SHALL BE 13°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 FLOOR 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 HORN WHEN IN ALARM STATUS. ALL INTERFACE WORK SHALL BE AS PER ASME/ANSI A17.1, RULE 102.2(g)(4).
- 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 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.)
- 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 CEILINGS SUCH THAT FIXTURES WILL NOT INTERFERE WITH DOOR SWINGS.
- 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.
- WHERE NEW DEVICES (RECEPTACLES, SWITCHES OR TELECOMMUNICATIONS) OR FIRE ALARM ARE SHOWN ON EXISTING WALLS AND CEILINGS 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 ROOMS AND STORAGE, ETC.).
- WHERE RE-USE OF EXISTING CONDUIT, WIRING AND/OR OUTLET BOXES IS INDICATED, PROVIDE NEW MATERIALS AS REQUIRED. IF NEW EXPRESSED 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 ROOMS AND STORAGE, ETC.).
- WHERE EXPOSED CONDUIT IS IN BEDROOM CLOSETS (FOR SURFACE RACEWAY TRANSITIONS), PAINT CONDUIT TO MATCH WALL.
- LOCATIONS OF SURFACE RACEWAYS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
- WHERE SURFACE RACEWAY IS USED, PROVIDE ALL REQUIRED BOXES AND FITTINGS.
- PROVIDE SHALLOW BOXES FOR NEW DEVICES IN FURRED WALLS. COORDINATE DEPTH WITH ARCHITECTURAL.
- FILL-IN ALL EXISTING OUTLET BOXES THAT ARE NOT REUSED WITH MATERIAL TO MATCH SURFACE (DRYWALL, PLASTER, ETC.). PROVIDE AN ALLOWANCE FOR 1,000 UNUSED BOXES.
- ALL EXISTING LINE-VOLTAGE WIRING IN THE BUILDING SHALL BE REMOVED AND REPLACED, WHETHER SPECIFICALLY INDICATED ON THE FLOOR PLANS OR NOT.
- PROVIDE CHORD AND PLUG TO MATE AND MATCH WITH RECEPTACLE PROVIDED FOR ALL RANGES, DRYERS AND DISHWASHERS.
- PROVIDE ALL 120-VOLT POWER AND NETWORK CONNECTIONS REQUIRED FOR THE BAS SYSTEM. COORDINATE WITH THE CONTROLS SPECIFICATIONS AND CONTRACTOR.
- 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.
- 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.
- 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 DISCIPLINES WORK. NO CHANGE ORDERS WILL BE APPROVED FOR ADDITIONAL WORK DUE TO THE CONTRACTOR NEGLECTING TO VISIT THE SITE TO GATHER ALL NECESSARY INFORMATION.

ELECTRICAL ABBREVIATIONS

A OR AMP	AMPERE	IMC	INTERMEDIATE METALIC CONDUIT
ABD	ABANDONED	INC	INCANDESCENT
ABV	ABOVE	INIT	INITIAL
AC	ALTERNATING CURRENT	JB	JUNCTION BOX
ACG	ACROSS COUNTER BACKSPASH	KOM	THOUSAND CIRCULAR MILS
AF OR API	ARC FAULT INTERRUPTER	KO	KNOCKOUT
AFD	ADJUSTABLE FREQUENCY DRIVE	KV	KILOWOLT
AFF	ABOVE FINISHED FLOOR	KVA	KILOWATT-AMPERE
AIC	AMPERE INTERRUPTING CAPACITY	KW	KILOWATT-AMPERE REACTIVE
AIP	ABOVE IN PLACE	KWH	KILOWATT-HOUR
AL	ALUMINUM	LA	LIGHTNING ARRESTER
AMM	AMMETER	LED	LIGHT EMITTING DIODE
AMPL	AMPLIFIER	LPS	LOW PRESSURE SODIUM
ASYM	ASYMETRICAL	LRR	LIGHT RELAY PANEL
AVG	AUTOMATIC VOLTAGE SWITCH	LTG	LIGHTING
BAS	AMERICAN WIRE GAGE	LUM	LUMENS OR LUMINARE
BEL	BUILDING AUTOMATION SYSTEM	MAG	MAGNETIC
BD	BUS DUCT	MAN	MANUFACTURER
BOT	BOTTOM	MATV	MASTER ANTENNA TELEVISION
BRKR	BREAKER	MCB	MAIN CIRCUIT BREAKER
C	COUNTERTOP	MCC	MOTOR CONTROL CENTER
CA	CABLE	MCM	THOUSAND CIRCULAR MILS
CAB	CABINET	MIG	MOTOR GENERATOR
CATV	CABLE	MH	METAL HALIDE OR MOUNTING HEIGHT
CB	CIRCUIT BREAKER	MIN	MINIMUM
CCTV	CLOSED CIRCUIT TELEVISION	MLO	MAN LUGS ONLY
CF	COMPACT FLUORESCENT	MMS	MANUAL MOTOR STARTER
CKT	CIRCUIT	MNS	MANUAL SAFETY SWITCH
CUD	COND	MOD	MOTOR OPERATED DAMPER
CND	CONDUT	MOT	MOTOR
CNTR	CENTER	MS	MAGNETIC STARTER
COMB	COMBINATION	MTR	MOUNTED OR MOUNTING
COND	CONDUCTOR	MTR	METER
CONN	CONNECTION	MVR	MERCURY VAPOR
CONT	CONTACTOR	N OR NORM	NORMAL
CR	CORROSION RESISTANT	NEC	NATIONAL ELECTRICAL CODE
CT	CURRENT TRANSFORMER	NEUT	NEUTRAL
CTRL	CONTROL	NFS	NON-FIRED SAFETY SWITCH
CU	COLD	NL	NIGHT LIGHT
CW	COLD WATER	NO	NUMBER
DB	DOOR BELL	OH	OVERHEAD
DC	DIRECT CURRENT	P	POLE
DIM	DIMENSION	PB	PULL BOX OR PUSHBUTTON
DISC	DISCONNECT	PBS	PULL BOX OR PUSHBUTTON
DR	DOOR RELEASE SERVICE	PH	PHASE
DW	DRAWING	PNL	PANEL PANELBOARD
E OR EMER	EMERGENCY	PNLBRD	PANELBOARD
ENC	EXIST END AND NEW CONDS	PRI	PRIMARY
EL	EXIST RELOCATED TO THIS LOCATION	PT	POTENTIAL TRANSFORMER
ELEC	ELECTRIC	PVC	POLYCHLORYLIC CHLORIDE
ELEV	ELEVATOR	PWR	POWER
EM	EXIST REMOVED	QTY	QUANTITY
EMI	EXIST REMOVED AND RELOCATED	REC	RECEPTACLE
EMN	EXIST REMOVED AND INSTALLED	REFRIG	REFRIGERATOR
EMT	ELECTRICAL METALLIC TUBING	RSS	RIGHT HAND TURNED STEEL CONDUIT
ENCL	ENCLOSURE	SB	SPACE ONLY
ENS	EXPLOSIONPROOF	SCCR	SHORT CIRCUIT CURRENT RATING
EP	EXPOSUREPROOF	SDR	SURGE OPERATED SMOKE DAMPER
EQUIP	EQUIPMENT	SEC	SECURITY
ER	EXIST TO REMAIN	SL	SINGLE STATION
ERC	ELEVATOR RECAL	SME	SURFACE METAL RACEWAY
ENG	ELECTRIC WATER COOLER	SN	SOLID NEUTRAL
EXIST	EXISTING	SP	SPECIAL PURPOSE
EXT	EXTERIOR	SPD	SPUR PROTECTIVE DEVICE
FA	FIRE ALARM	SPKR	SPAKER
FACP	FAUCET CONTROL PANEL	SR	SURFACE RACEWAY
FACU	FAUCI	SS	SURGE SUPPRESSOR
FDR	FEEDER	STR	STRAIGHT
FC	FOOTCANDLE	SW	SWITCHBOARD
FLUOR	FLUORESCENT	SWBD	SWITCHGEAR
FSD	FLASH DAMPER	SWGR	SYMMETRICAL
FSS	FUSIBLE SAFETY SWITCH	SYM	SYMMETRICAL
FXTR	FIXTURE	T	TIME CLOCK
GD	GARAGE DOOR	TEL	TELEPHONE
GEN	GENERATOR	TR	TAMPER RESISTANT
GFR OR GFI	GROUND FAULT INTERRUPTER	TV	TELEVISION
GFP	GROUND FAULT PROTECTION/PROTECTED	TYP	TOPICAL
GND	GROUND	UC	UNDERCOUNTER
GTD	GENERATOR TRANSFER DEVICE	UF	UNDERFLOOR
H OR HOR	HOSPITAL	UG	UNDERGROUND
HGT	HEIGHT	UL	UNDERWRITER'S LABORATORIES
HID	HIGH INTENSITY DISCHARGE	V	VOLT
HOA	HAND-OFF/AUTOMATIC	VAC	VOLT-AMPERE
HP	HIGH PRESSURE AIR	VAR	VOLT-AMPERE REACTIVE
HPP	HIGH POWER FACTOR	VERT	VERTICAL
HPS	HIGH PRESSURE SODIUM	VFD	VOLTAGE FREQUENCY DRIVE
HTR	HEATER	VM	VOLTMETER
HWT	HOT WATER	W	WATT OR WIRE
HZ	HZ	WP	WEATHERPROOF
IC	INTERCOM OR INTERRUPTING CAPACITY	XFER	TRANSFER
IG	ISOLATED GROUND	XFMR	TRANSFORMER

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:

- 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.
- REMOVE AND/OR RELOCATE ANY EXISTING CONDUITS INTERFERING WITH RENOVATIONS.
- IF AN EXISTING OUTLET BOX OR CONDUIT CANNOT BE REUSED AS INDICATED, PROVIDE NEW BOXES AND RACEWAY AS REQUIRED FOR 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 WUSBC 102.4, AND SHALL HAVE FIRE-RATED PROTECTION IN ACCORDANCE WITH WUSBC 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	MTG. HGT.	SYMBOL	DESCRIPTION
	①	PLAN NOTE DESIGNATION.		⑤	SMOKE DETECTOR, CEILING.
	Ⓐ	LIGHTING FIXTURE TYPE DESIGNATION.	AS NOTED	⑥	SMOKE DETECTOR, WALL.
	*	* ASTERISK DENOTES BOTTOM OF OUTLET BOX MOUNTED IN ABOVE TOP OF COUNTER, UNLESS NOTED OTHERWISE. DISTANCE INCLUDES HEIGHT OF BACKSPLASH.		⑦	SMOKE DETECTOR, DUCT TYPE. COORDINATE EXACT LOCATION WITH MECHANICAL DRAWINGS.
	○	LIGHTING FIXTURE, FLUORESCENT, CEILING MOUNTED. SYMBOL SIZE VARIES WITH LIGHTING FIXTURE TYPE.	AS NOTED	⑧	HEAT DETECTOR, CEILING.
	●	LIGHTING FIXTURE, FLUORESCENT, CEILING MOUNTED WITH CONNECTED ON EMERGENCY			



LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101
Roanoke, Virginia 24011
Ph: (540) 342-1816
Fax: (540) 344-3410
Comm. No.: 13111
©Lawrence Perry and Associates, Inc.

RADFORD UNIVERSITY

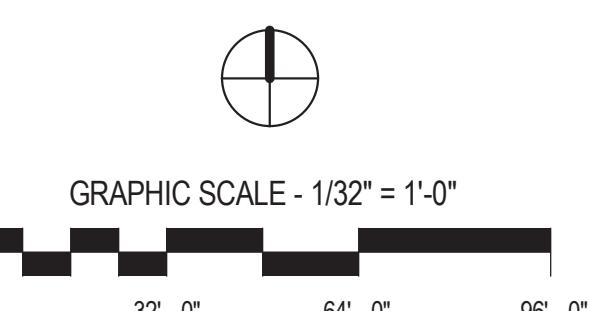
RENOVATION OF THREE RESIDENCE HALLS DRAPER HALL

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565-002
VMDO Project Number 1115

Checked By RGW
Drawn By BSM

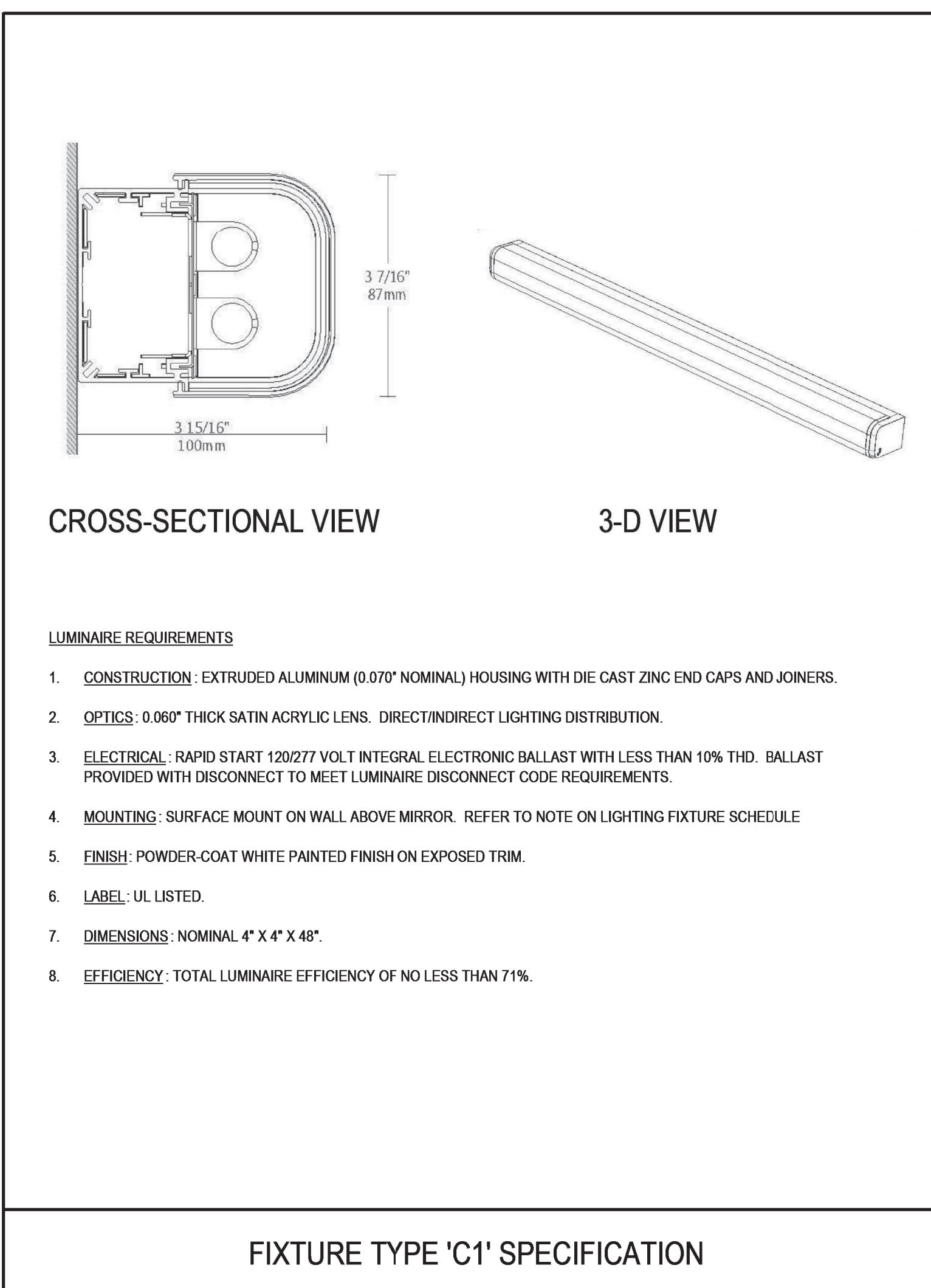
Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.



ISSUES AND REVISIONS	
NO.	SUBMITTAL
1	BID DOCUMENTS Addendum 1 06.19.14
2	Addendum 2 06.19.14 06.24.14
3	Addendum 3 06.25.14
	CONSTRUCTION SET 05.01.15

ELECTRICAL LIGHTING FIXTURE SPECIFICATIONS

E002

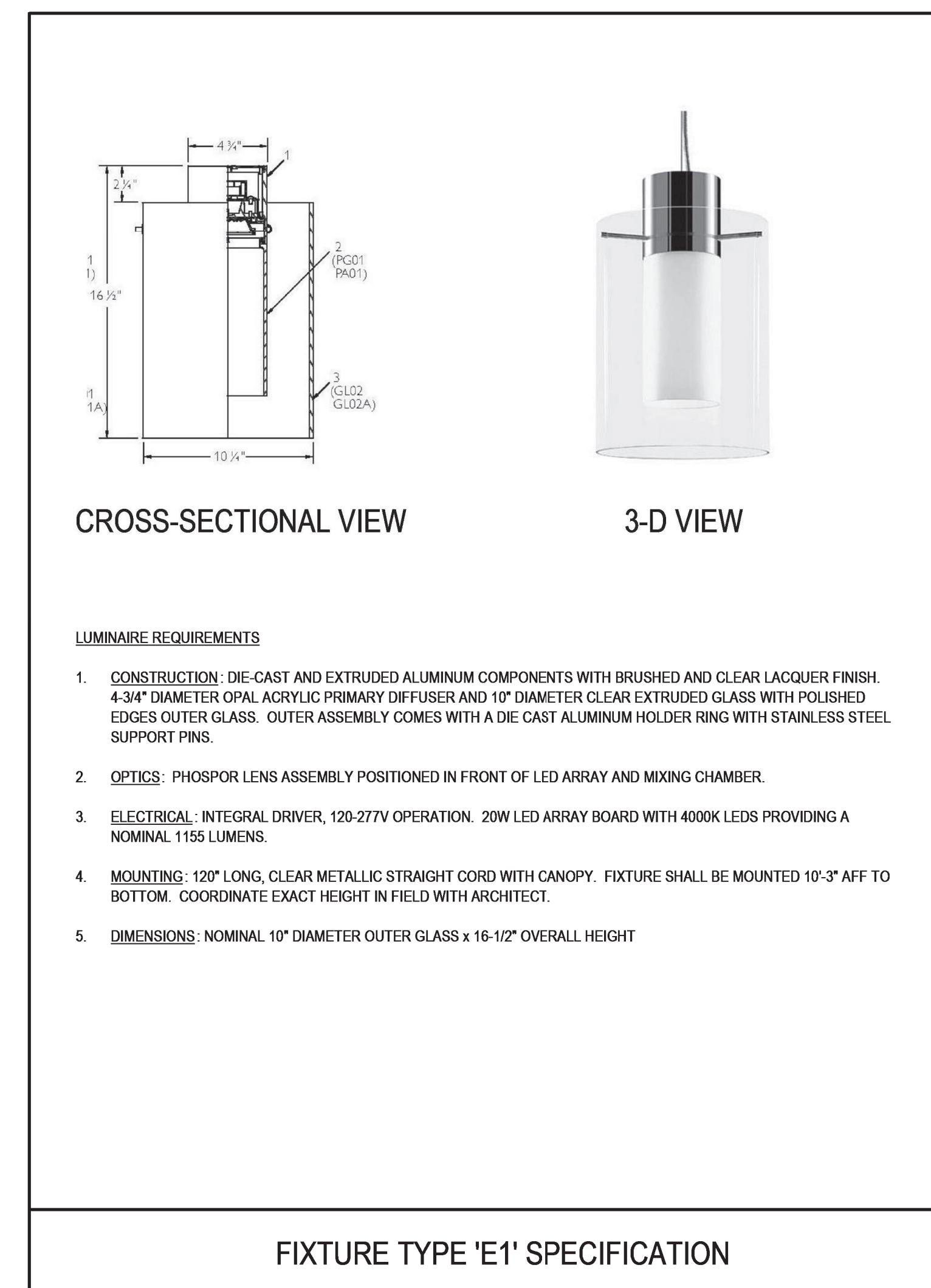


CROSS-SECTIONAL VIEW 3-D VIEW

LUMINAIRE REQUIREMENTS

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

Fixture Type 'C1' Specification



CROSS-SECTIONAL VIEW 3-D VIEW

LUMINAIRE REQUIREMENTS

- 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.
- OPTICS:** PHOSPHOR LENS ASSEMBLY POSITIONED IN FRONT OF LED ARRAY AND MIXING CHAMBER.
- ELECTRICAL:** INTEGRAL DRIVER, 120/277V OPERATION 20W LED ARRAY BOARD WITH 4000K LEDS PROVIDING A NOMINAL 1155 LUMENS.
- 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.
- DIMENSIONS:** NOMINAL 10" DIAMETER OUTER GLASS X 16-1/2" OVERALL HEIGHT

Fixture Type 'E1' Specification

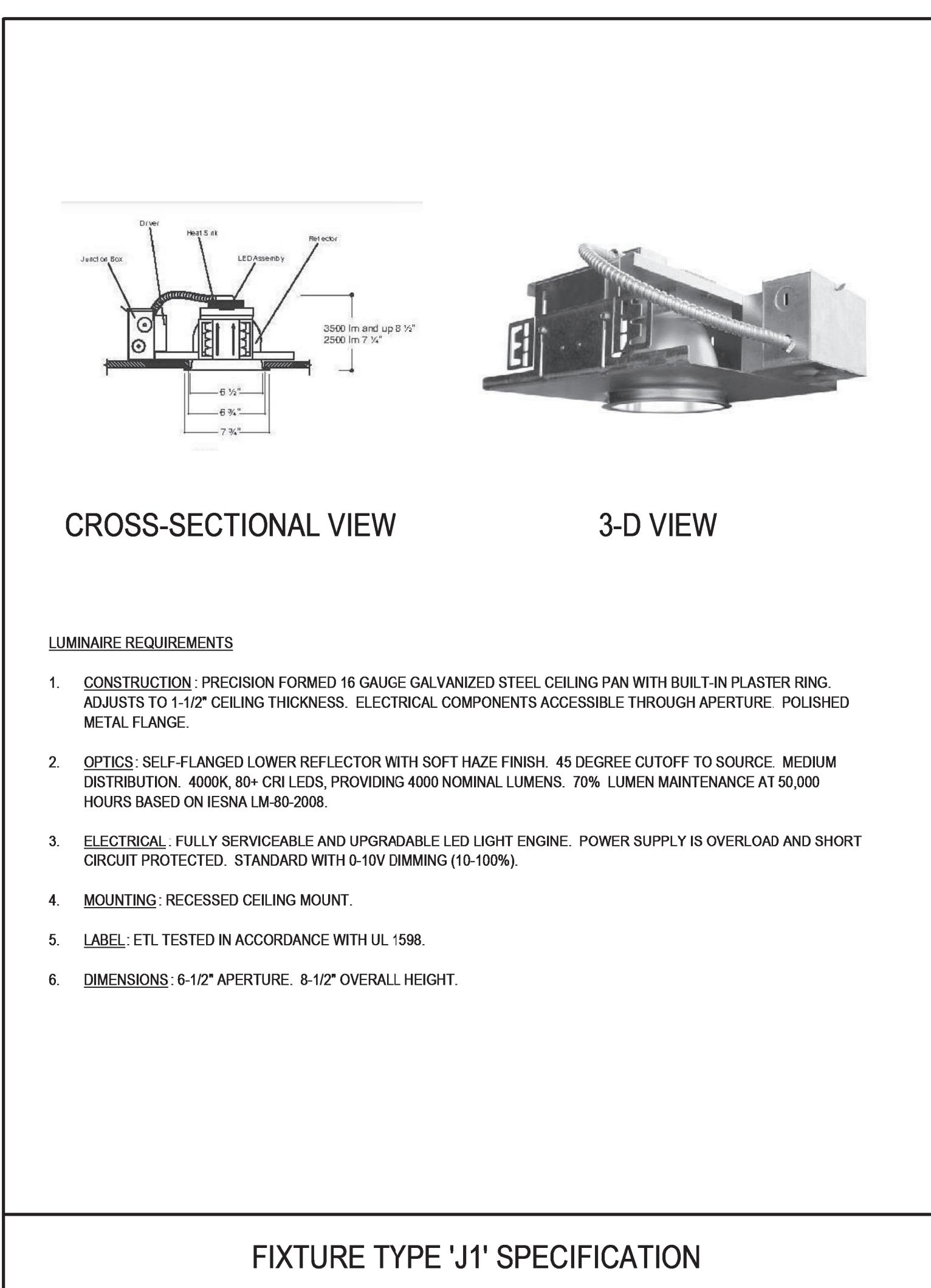


CROSS-SECTIONAL VIEW 3-D VIEW

LUMINAIRE REQUIREMENTS

- CONSTRUCTION:** HEAVY GAUGE STEEL ARCHITECTURAL GRADE OPEN DOWNLIGHT, CAPABLE TO BE INSTALLED IN CEILINGS UP TO 1-1/2" MAXIMUM THICKNESS. ELECTRICAL COMPONENTS ACCESSIBLE FROM BELOW.
- OPTICS:** Spherical CLEAR "AZAK" REFLCTOR. 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.
- ELECTRICAL:** 120/277V OPERATION. DIMMABLE 0-10V.
- MOUNTING:** RECESSED.
- DIMENSIONS:** 7" DIAMETER APERTURE. 8-1/4" HEIGHT (NOT INCLUDING FROSTED CYLINDER)

Fixture Type 'G1' Specification

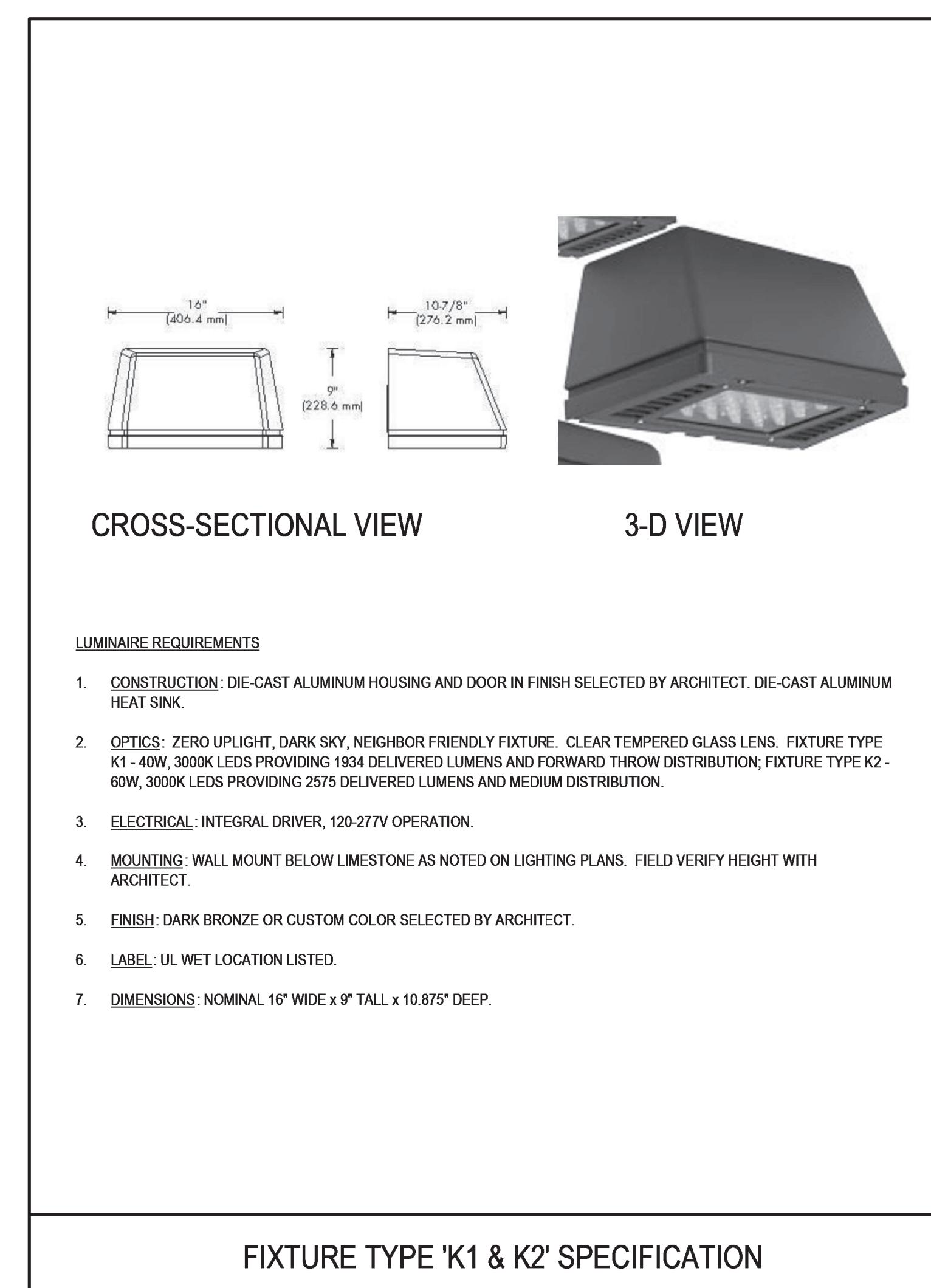


CROSS-SECTIONAL VIEW 3-D VIEW

LUMINAIRE REQUIREMENTS

- 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.
- 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 ENSI ALM-2008.
- ELECTRICAL:** FULLY SERVICABLE AND UPDARABLE LED LIGHT ENGINE. POWER SUPPLY IS OVERLOAD AND SHORT CIRCUIT PROTECTED. STANDARD WITH 0-10V DIMMING (10-100%).
- MOUNTING:** RECESSED CEILING MOUNT.
- LABEL:** ETL TESTED IN ACCORDANCE WITH UL 1598.
- DIMENSIONS:** 6-1/2" APERTURE. 8-1/2" OVERALL HEIGHT.

Fixture Type 'J1' Specification

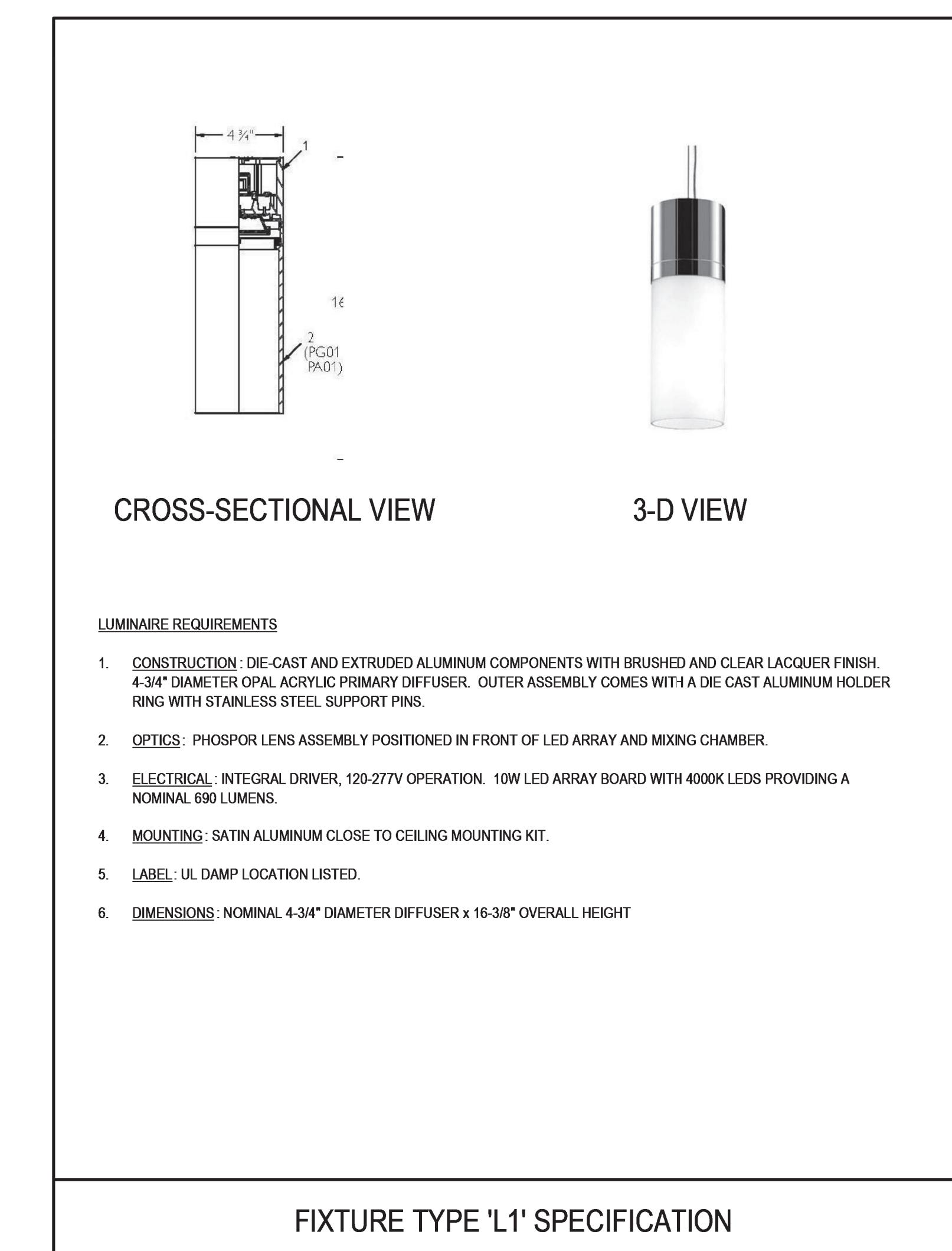


CROSS-SECTIONAL VIEW 3-D VIEW

LUMINAIRE REQUIREMENTS

- CONSTRUCTION:** DIE-CAST ALUMINUM HOUSING AND DOOR IN FINISH SELECTED BY ARCHITECT. DIE-CAST ALUMINUM HEAT SINK.
- 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.
- ELECTRICAL:** INTEGRAL DRIVER, 120-277V OPERATION.
- MOUNTING:** WALL MOUNT BELOW LIMESTONE AS NOTED ON LIGHTING PLANS. FIELD VERIFY HEIGHT WITH ARCHITECT.
- FINISH:** DARK BRONZE OR CUSTOM COLOR SELECTED BY ARCHITECT.
- LABEL:** UL WET LOCATION LISTED.
- DIMENSIONS:** NOMINAL 4-3/4" DIAMETER DIFFUSER X 16-3/8" OVERALL HEIGHT

Fixture Type 'K1 & K2' Specification



CROSS-SECTIONAL VIEW 3-D VIEW

LUMINAIRE REQUIREMENTS

- 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.
- OPTICS:** PHOSPHOR LENS ASSEMBLY POSITIONED IN FRONT OF LED ARRAY AND MIXING CHAMBER.
- ELECTRICAL:** INTEGRAL DRIVER, 120-277V OPERATION. 10W LED ARRAY BOARD WITH 4000K LEDS PROVIDING A NOMINAL 690 LUMENS.
- MOUNTING:** SATIN ALUMINUM CLOSE TO CEILING MOUNTING KIT.
- DIMENSIONS:** NOMINAL 4-3/4" DIAMETER DIFFUSER X 16-3/8" OVERALL HEIGHT

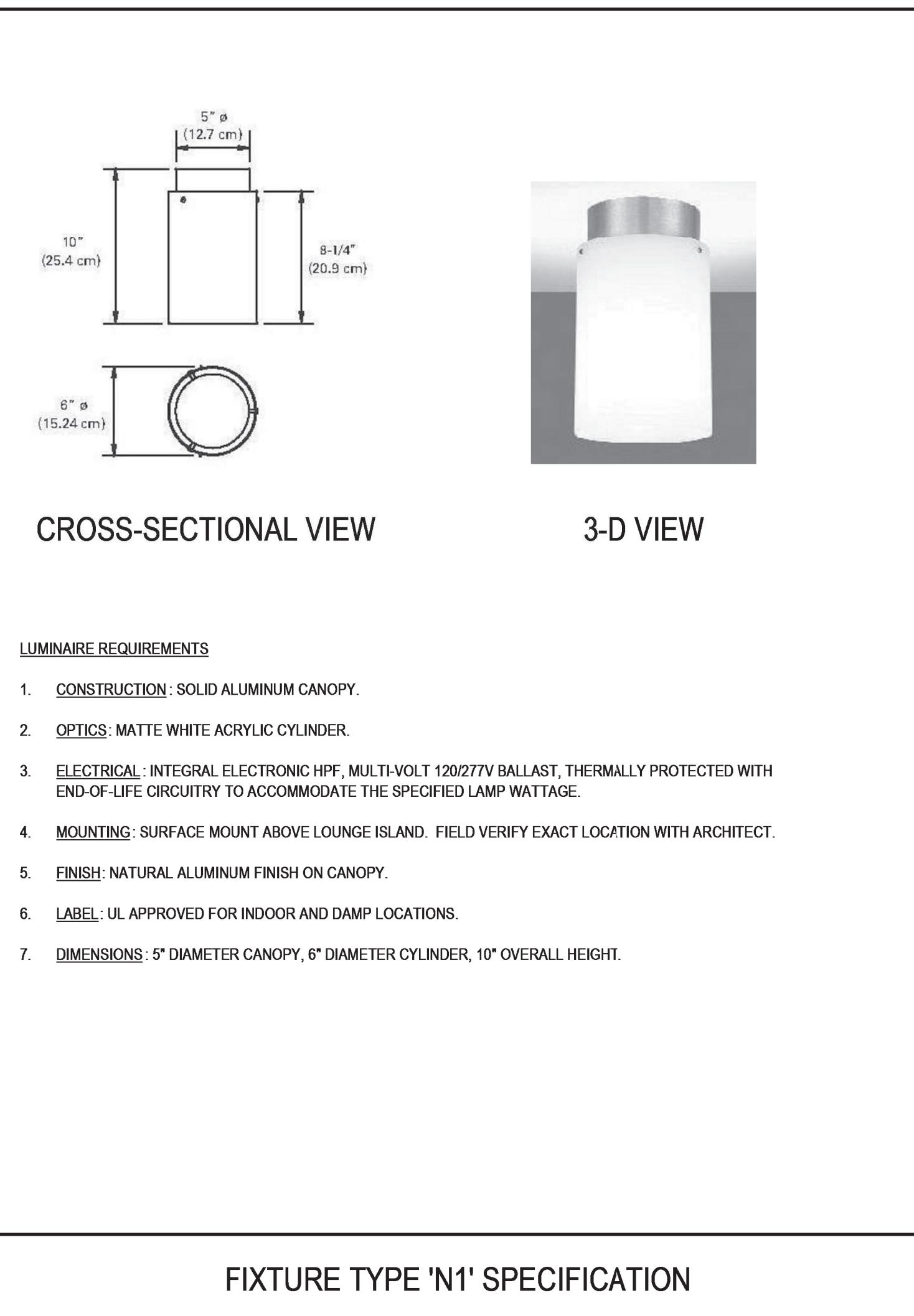
Fixture Type 'L1' Specification



RENOVATION OF THREE RESIDENCE HALLS DRAPER HALL

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565-002
VMDO Project Number 1115



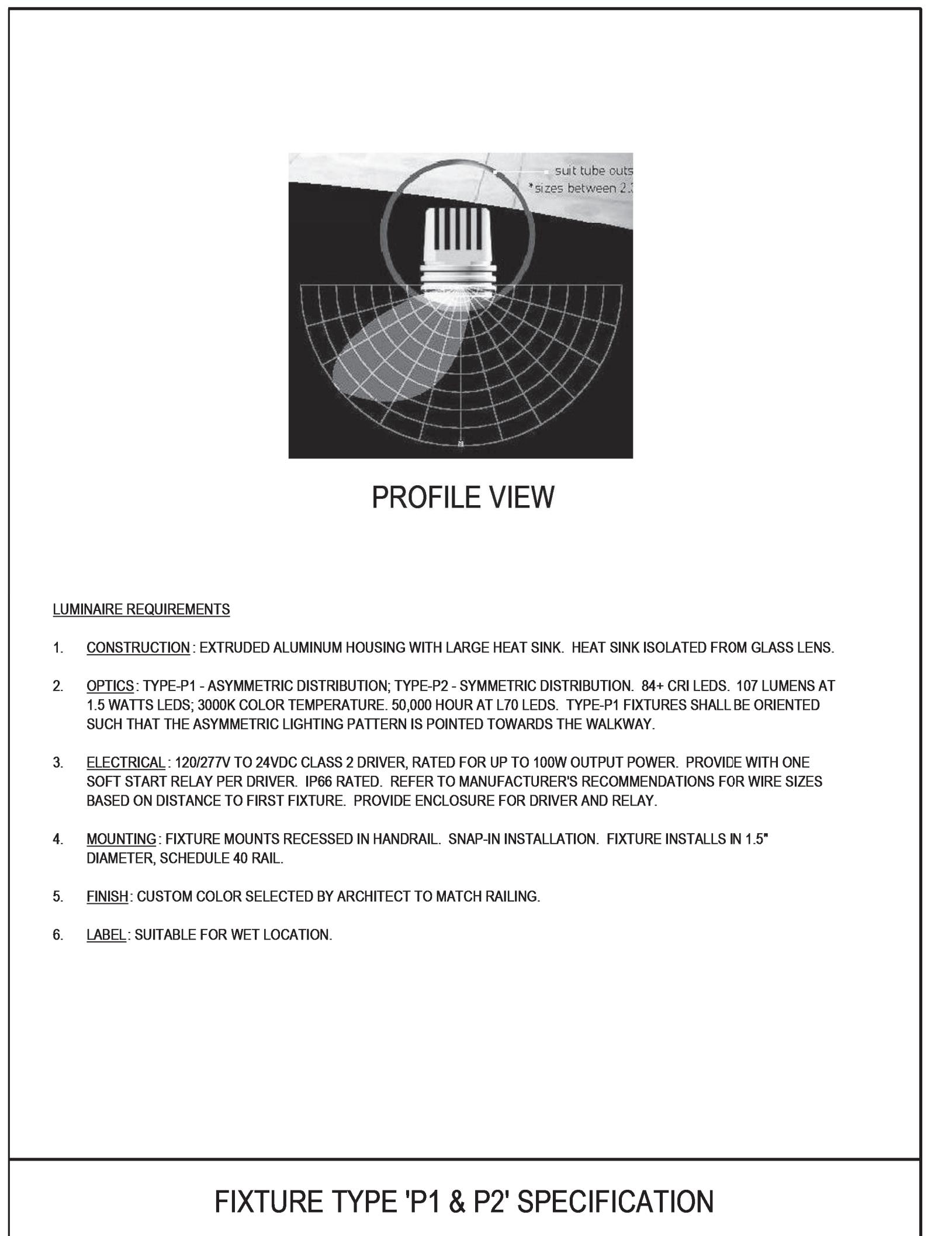
CROSS-SECTIONAL VIEW

3-D VIEW

LUMINAIRE REQUIREMENTS

1. CONSTRUCTION: SOLID ALUMINUM CANOPY.
2. OPTICS: MATTE WHITE ACRYLIC CYLINDER.
3. ELECTRICAL: INTEGRAL ELECTRONIC HPS, MULTIVOLT 120/277V BALLAST, THERMALLY PROTECTED WITH END-OF-LIFE CIRCUITRY TO ACCOMMODATE THE SPECIFIED LAMP WATTAGE.
4. MOUNTING: SURFACE MOUNT ABOVE LOUNGE 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

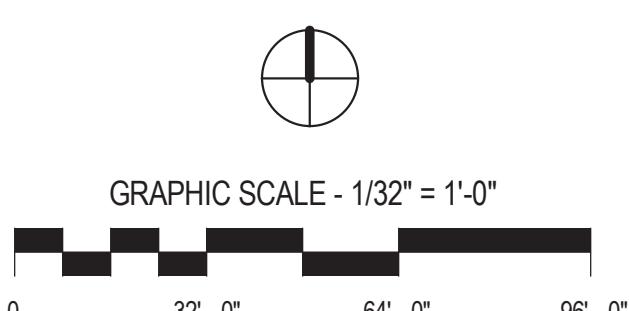


PROFILE VIEW

FIXTURE TYPE 'P1 & P2' SPECIFICATION

Checked By RGW
Drawn By BSM

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.

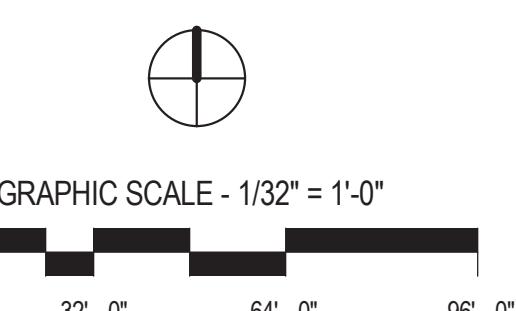


ISSUES AND REVISIONS		
NO.	SUBMITTAL	DATE
1	BID DOCUMENTS Addendum 1	06.19.14
2	Addendum 2	06.24.14
3	Addendum 3 CONSTRUCTION SET	06.25.14
		05.01.15

ELECTRICAL LIGHTING Fixture SPECIFICATIONS

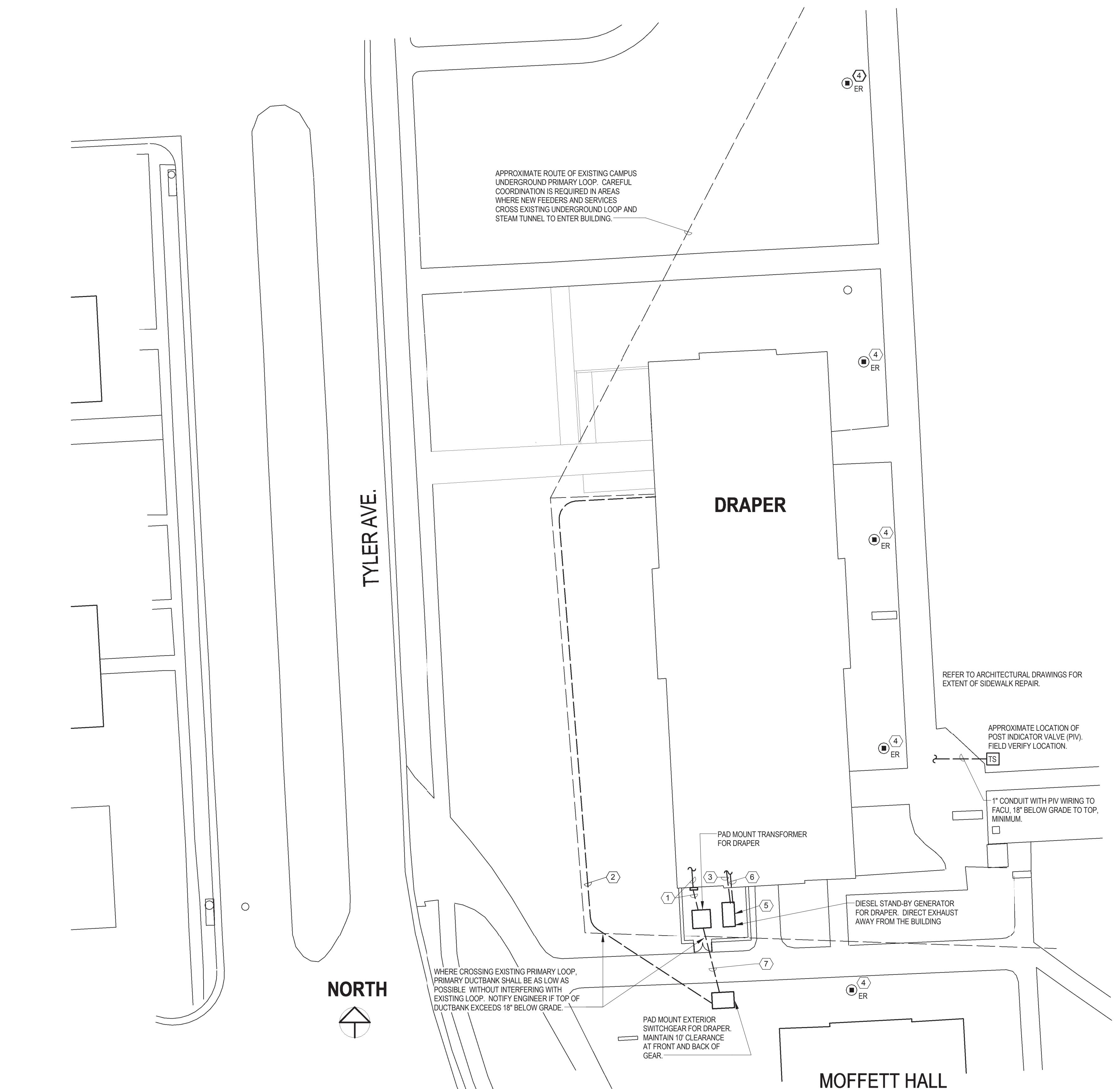
RENOVATION OF THREE
RESIDENCE HALLS
DRAPER HALLRADFORD UNIVERSITY
RADFORD, VIRGINIAProject Code 217-17565-002
VMDO Project Number 1115Checked By RGW
Drawn By BSM

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.



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 BLB-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, 38" BELOW GRADE TO TOP, MINIMUM. COORDINATE WITH NEW AND EXISTING UTILITIES.

CONTACT INFORMATION: DIG NOTICE:

PROJECT MANAGER: PAUL E.Y.
RADFORD UNIVERSITY
(540) 831-7808

POWER COMPANY: TIMOTHY LOGWOOD
RADFORD ELECTRIC DEPARTMENT
701 N. Main Street
RADFORD, VA 24141
(540) 731-3641

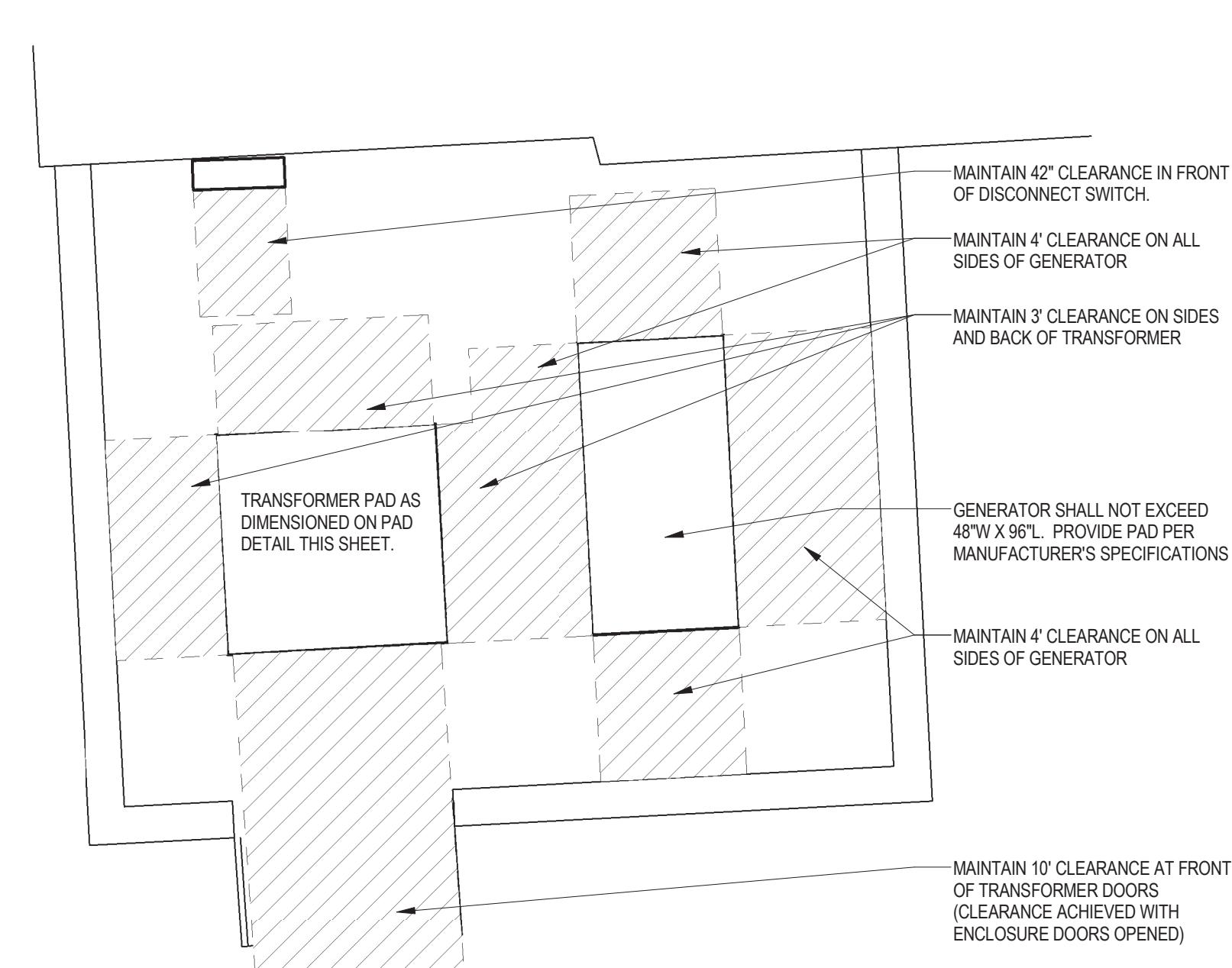
CAMPUS TEL COMMUNICATIONS: JEFFRY LEGGE
RADFORD UNIVERSITY
(540) 831-7727

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 AS-BUILT DOCUMENTS.

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

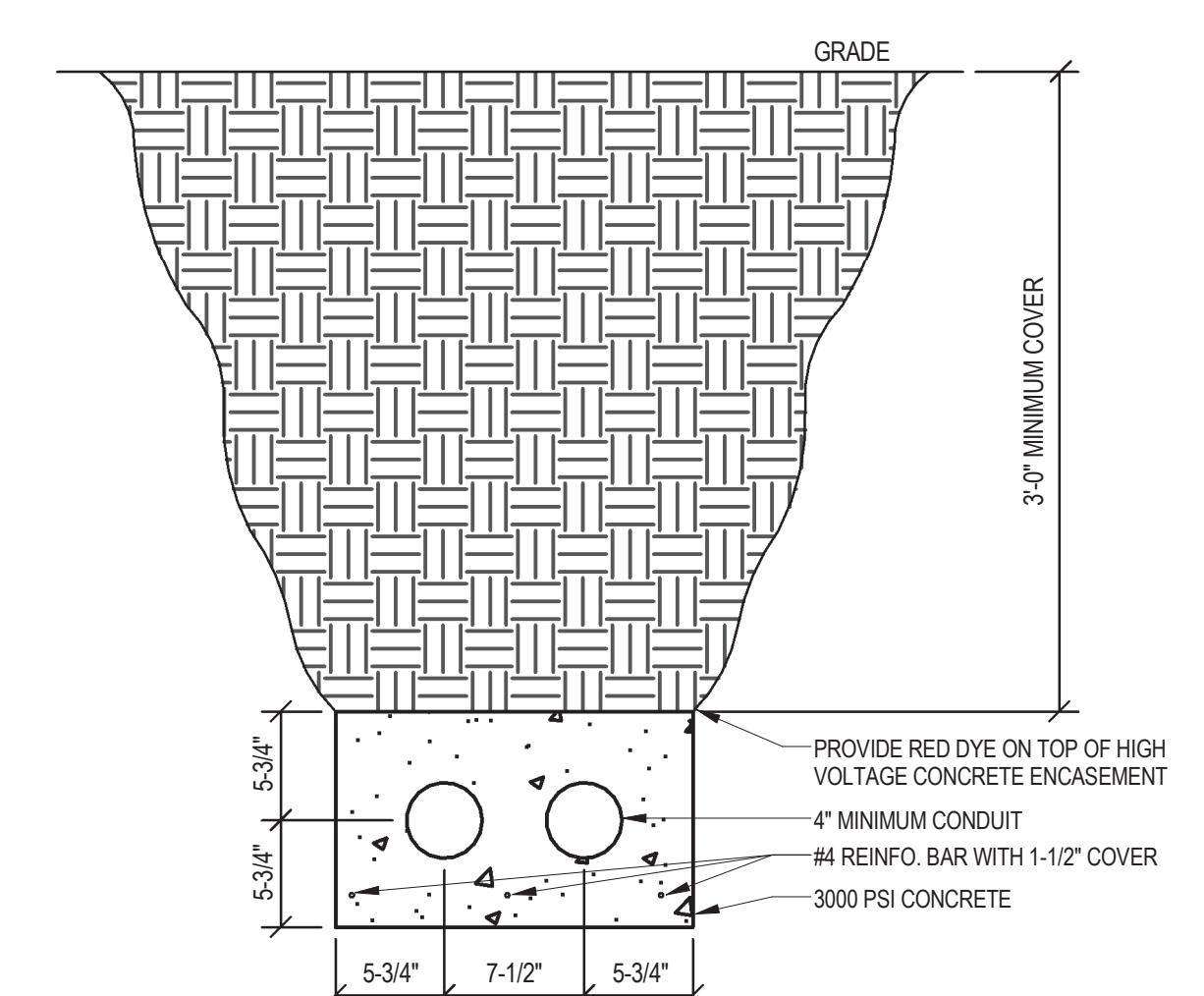
GRAPHIC SCALE - 1/32" = 1'-0"

ISSUES AND REVISIONS		DATE
NO. SUBMITTAL	BID DOCUMENTS	05.19.14
1	Addendum 1	06.19.14
2	Addendum 2	06.24.14
3	Addendum 3	06.25.14
	CONSTRUCTION SET	05.01.15



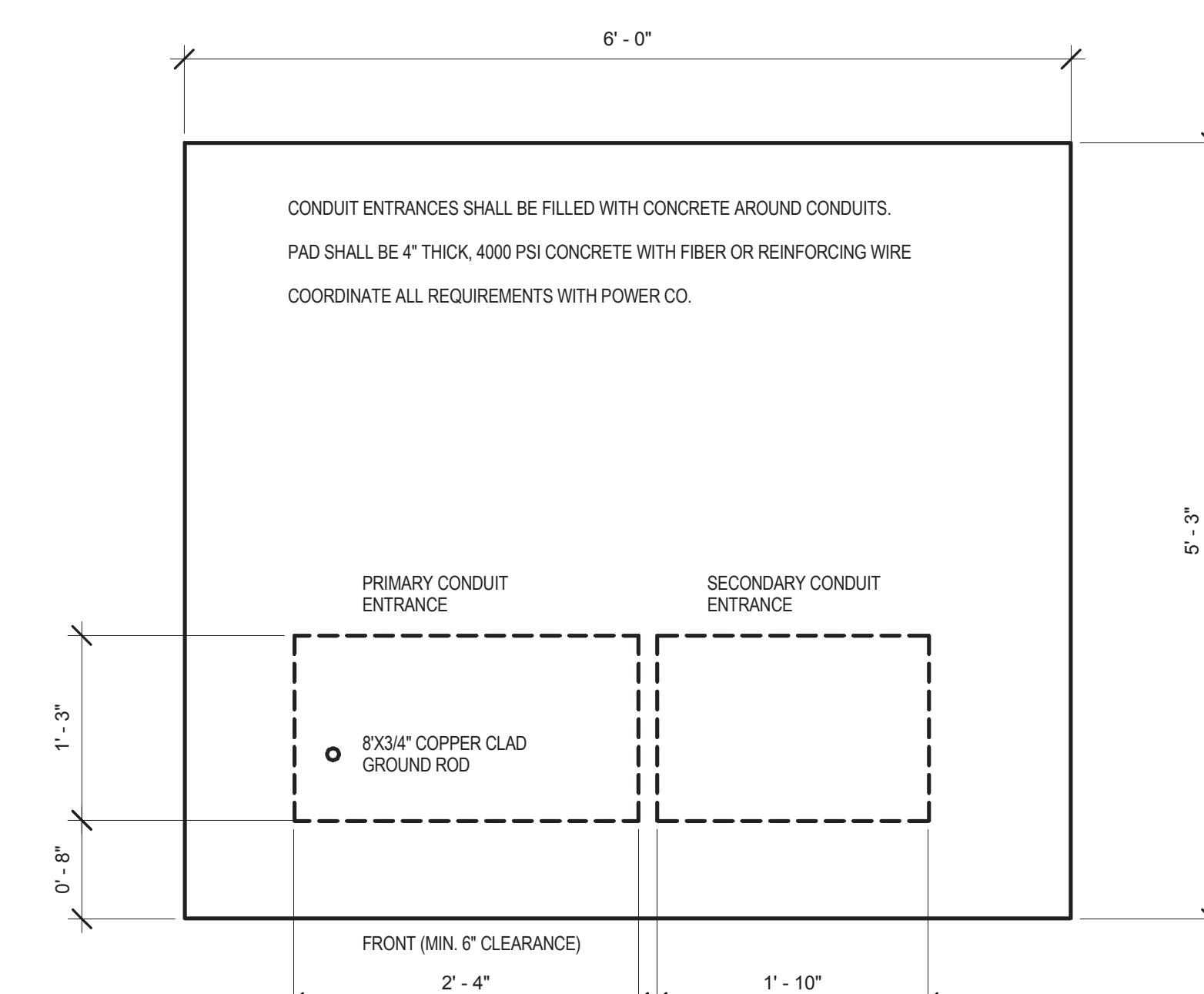
DRAPER SITE ENCLOSURE CLEARANCE PLAN

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



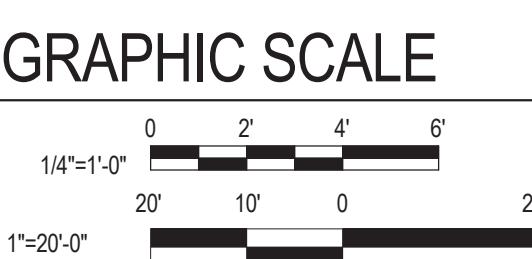
PRIMARY DUCT BANK DETAIL

NO SCALE



POWER CO. TRANSFORMER PAD DETAIL

NO SCALE





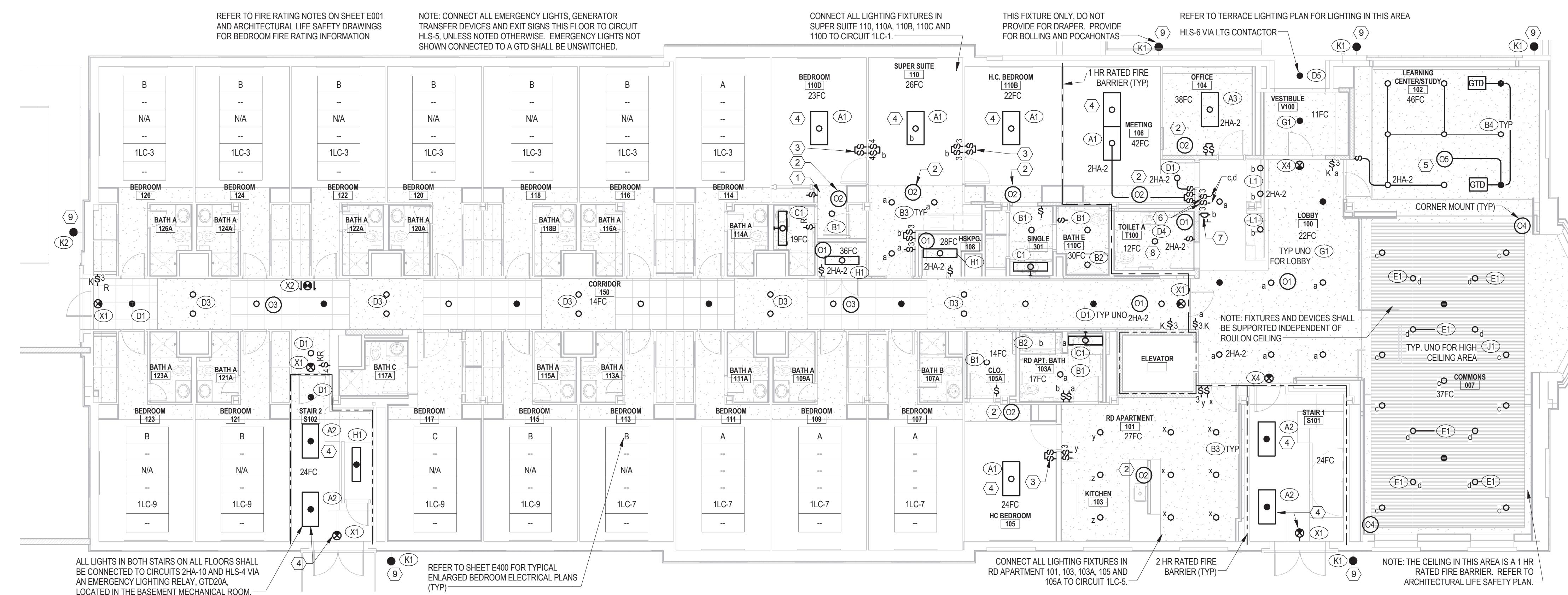
RENOVATION OF THREE RESIDENCE HALLS DRAPER HALL

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565-002
VMDO Project Number 1115

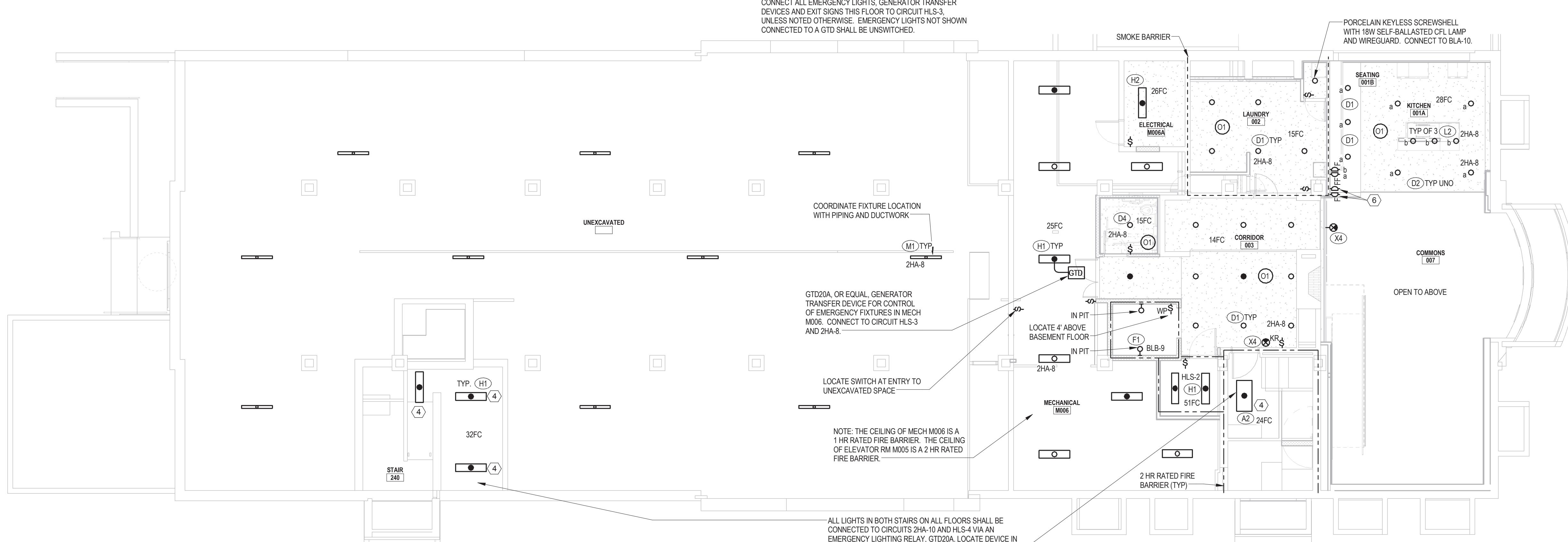
Checked By RGW
Drawn By BSM

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.



FIRST FLOOR LIGHTING PLAN

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



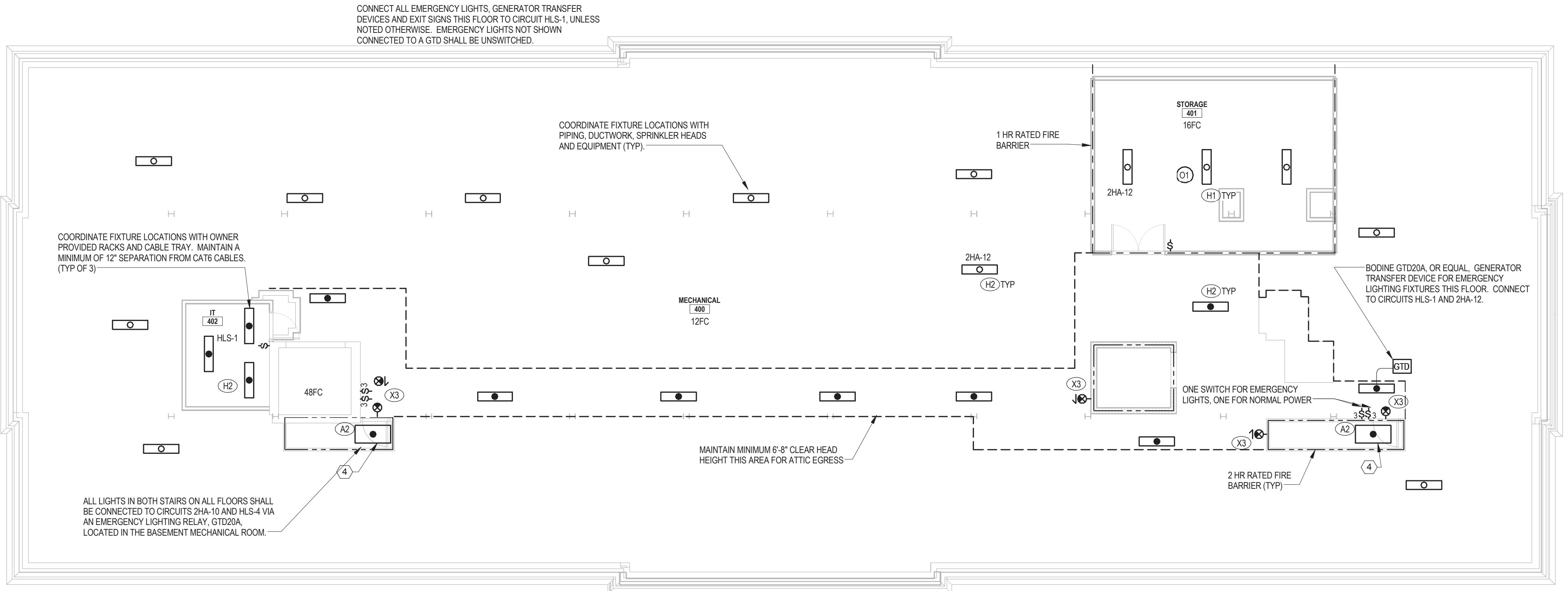
BASEMENT FLOOR LIGHTING PLAN

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

LIGHTING PLAN NOTES :

NOTE: ALL PLANS NOTES MAY APPLY TO THIS SHEET

- CONNECT SWITCH(E) IN SERIES WITH ROOM OCCUPANCY SENSOR SUCH THAT LIGHTS WILL BE ON ONLY WHEN SWITCH(E) ARE CLOSED AND SENSOR CONTACT IS CLOSED. BATHROOM LIGHTING SWITCH SHALL BE INDEPENDENT OF ROOM OCCUPANCY SENSOR.
- 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).
- CONNECT SWITCHES IN SERIES WITH ROOM OCCUPANCY SENSOR SUCH THAT LIGHTS WILL BE ON ONLY WHEN SWITCHES ARE CLOSED AND SENSOR CONTACT IS CLOSED.
- REUSE EXISTING OUTLET BOX AND CONDUIT FOR NEW FIXTURE.
- 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(S).
- 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 04 OCCUPANCY SENSORS. CONNECT TO CIRCUIT 2HA-2.
- 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. CONNECT TO CIRCUIT 2HA-2.
- PROVIDE FIXTURE WITH FIRE RATED PROTECTIVE ENCLOSURE PER THE SPECIFICATIONS.
- 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.



LIGHTING PLAN NOTES :

- NOTE: ALL PLANS NOTES MAY APPLY TO THIS SHEET
1. CONNECT SWITCHES IN SERIES WITH ROOM OCCUPANCY SENSOR SUCH THAT LIGHTS WILL BE ON ONLY WHEN SWITCH(S) 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 INOCCUPIED. THE OTHER RELAY IN THE OCCUPANCY SENSOR SHALL CONTROL THE SWITCHED FIXTURES VIA THE IN-SERIES SWITCHES.
 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 Q4 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 'Q1' 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-1 VIA LTG CONTACTOR.

VMDO ARCHITECTS

201 E MARKET STREET
CHARLOTTESVILLE, VA 22902
P 434.236.5684 F 434.236.4495
www.vmdo.com



LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101
Roanoke, Virginia 24011
Ph: (540) 342-1816
Fax: (540) 344-3410
Comm. No.: 13111
©Lawrence Perry and Associates, Inc.

RADFORD
UNIVERSITY

RENOVATION OF THREE
RESIDENCE HALLS
DRAPER HALL

ATTIC FLOOR LIGHTING PLAN

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



RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565-002
VMDO Project Number 1115

Checked By RGW
Drawn By BSM

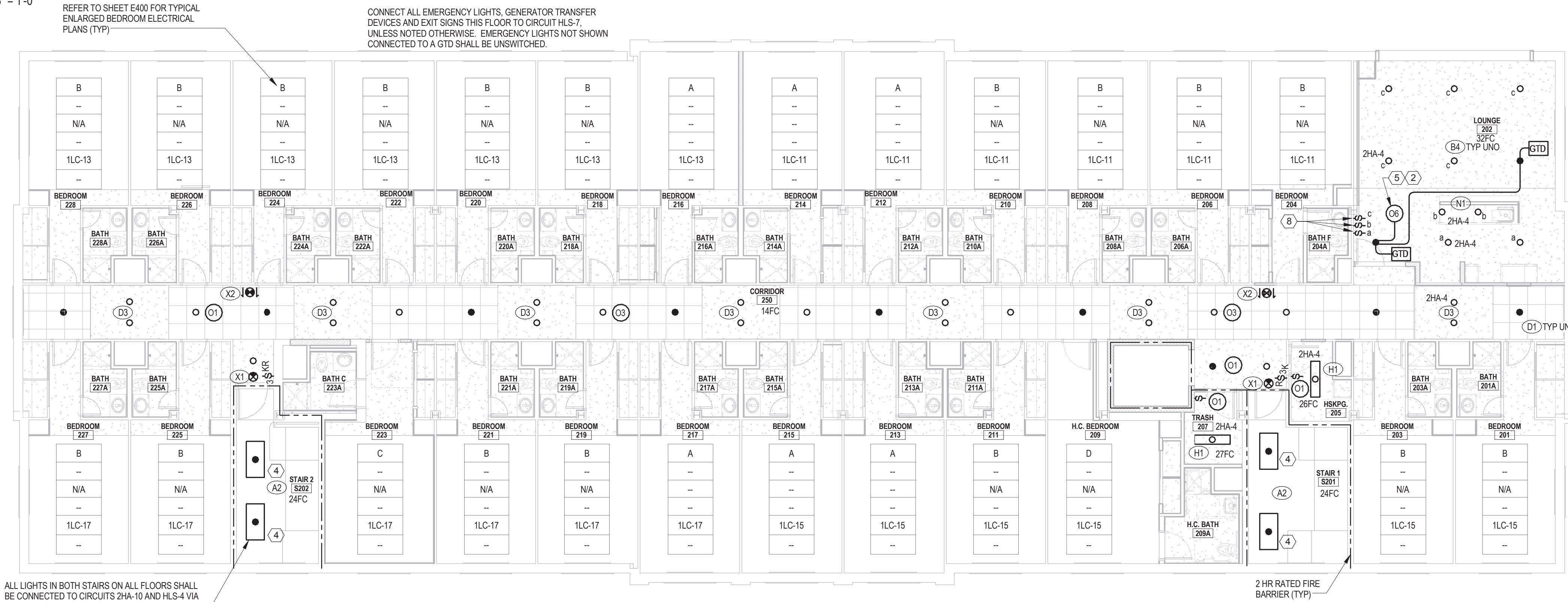
Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.



GRAPHIC SCALE - 1/32" = 1'-0"
0 32'-0" 64'-0" 96'-0"

THIRD FLOOR LIGHTING PLAN

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



ISSUES AND REVISIONS
NO. SUBMITTAL DATE
5 BID DOCUMENTS 06.18.14
1 Addendum 1 06.19.14
2 Addendum 2 06.24.14
3 Addendum 3 06.25.14
CONSTRUCTION SET 05.01.15

SECOND, THIRD AND ATTIC FLOOR LIGHTING PLANS

SECOND FLOOR LIGHTING PLAN

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

E102

RENOVATION OF THREE
RESIDENCE HALLS
DRAPER HALL

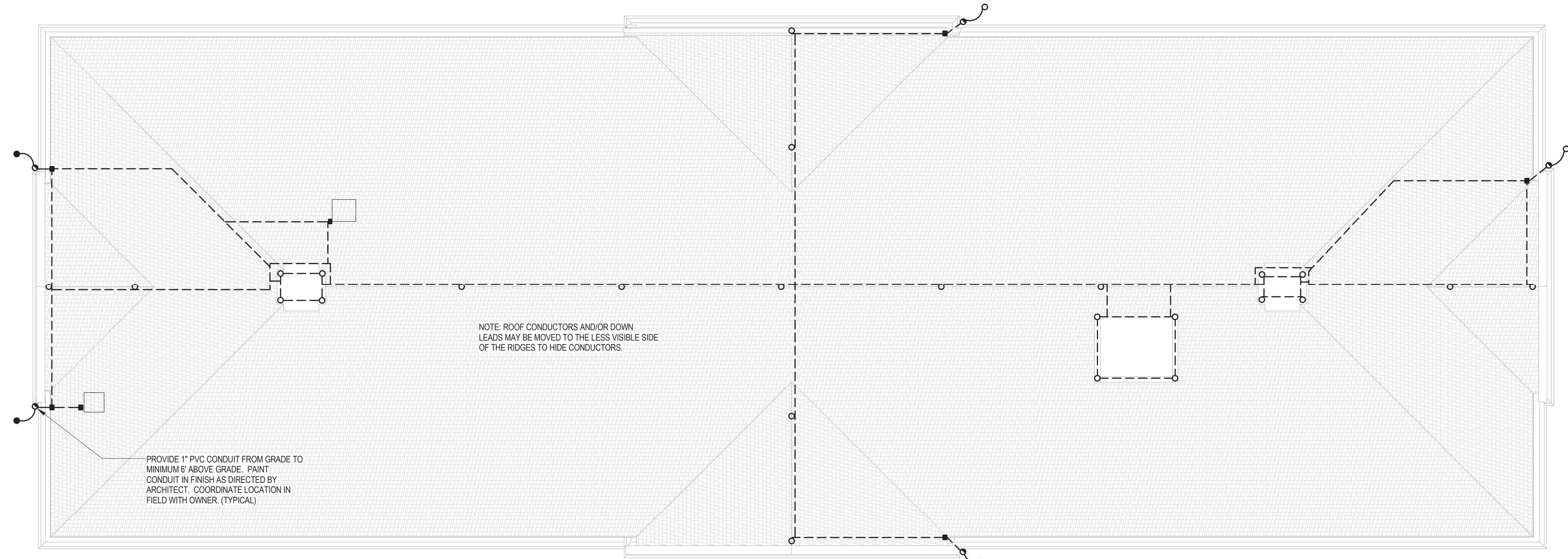
RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code
VMDO Project Number

217-17565-002
1115

Checked By _____
Drawn by _____
Checker _____
Author _____

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.



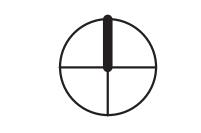
LIGHTNING PROTECTION PLAN

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

LIGHTNING PROTECTION LEGEND	
SYMBOL	DESCRIPTION
○	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. ALL VENTING HOLES, DRAWDOWNS, AND PIPING ON 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 SPECIFICATIONS SECTION 26.413.13 "LIGHTNING PROTECTION FOR BUILDINGS" FOR ADDITIONAL SYSTEM REQUIREMENTS.



GRAPHIC SCALE - 1/32" = 1'-0"
0 32'-0" 64'-0" 96'-0"

ISSUES AND REVISIONS		
NO.	SUBMITTAL	DATE
1	BID DOCUMENTS Addendum 1	05.19.14 06.19.14
2	Addendum 2	06.24.14
3	Addendum 3 CONSTRUCTION SET	06.25.14 05.01.15

**LIGHTNING PROTECTION
PLAN**

E203



LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101
Roanoke, Virginia 24011
Ph: (540) 342-1816
Fax: (540) 344-3410
Comm. No.: 13111
©Lawrence Perry and Associates, Inc.



RENOVATION OF THREE RESIDENCE HALLS DRAPER HALL

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565-002
VMDO Project Number 1115



FIRST 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 BELOW.

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 CABLES 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 TIDS. COORDINATE EXACT ROUTE WITH OTHER DISCIPLINES. PROVIDE CONDUIT SIZE AS INDICATED. THESE CONDUITS SHALL NOT BE USED FOR FIRE ALARM CABLEING. 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 10" X 6" LOCABLE ENCLOSURE FOR LAUNDRY SYSTEM. EXTEND ONE (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 IN ENCLOSURE.

7. MOUNT SMOKE DETECTOR IN BULKHEAD SUCH THAT TOP OF SMOKE DETECTOR IS 6" BELOW CEILING. SPEAKER/STROBE AND MASS NOTIFICATION DEVICE SHALL ALIGN HORIZONTALLY.

8. PROVISIONS FOR WALL MOUNTED TELEVISION. PROVIDE ONE RECESSED DOUBLE GANG OUTLET BOX AT 18" OR 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 RECESSED DOUBLE GANG OUTLET BOXES. 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 LLS-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 MULL AND BULHEAD 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 5'-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.

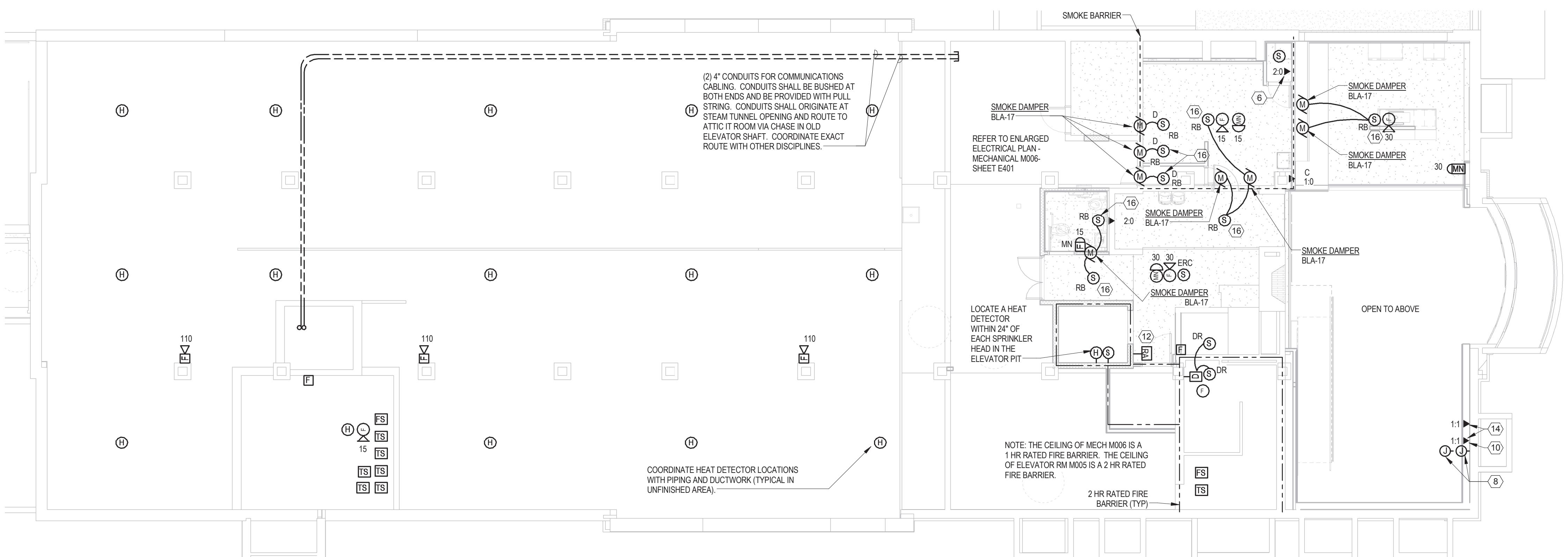
16. PROVIDE SMOKE DETECTOR (OR DUCT SMOKE DETECTOR, AS INDICATED) WITH RELAY FOR CONTROL OF SMOKE DAMPER(S). COORDINATE WHICH DETECTORS CONTROL SPECIFIC DAMPERS WITH DAMPER INSTALLER. AS AN OPTION TO THE CONTRACTOR, CONTROL MODULES MAY BE PROVIDED FOR CONTROL OF SMOKE DAMPERS. FIRE ALARM SHOP DRAWING SUBMITTAL SHALL CLEARLY IDENTIFY METHOD OF CONTROL AND DAMPER CONTROLLED.

17. CONNECT SPRINKLER SYSTEM ELECTRONIC BELL TO CIRCUIT LLS-6. 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 6' 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.

Checked By _____
Drawn By _____
Author _____

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.



BASEMENT FLOOR FIRE ALARM AND TELECOMMUNICATIONS PLAN

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

ISSUES AND REVISIONS

NO.	SUBMITTAL	DATE
1	BID DOCUMENTS Addendum 1	05.19.14
2	Addendum 2	06.19.14
3	Addendum 3	06.24.14
	CONSTRUCTION SET	06.25.14
		05.01.15

BASEMENT AND FIRST FLOOR FIRE ALARM AND TELECOMMUNICATIONS PLANS

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 BELOW.

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 CABLEING. ROUTE CONDUIT VIA NEW WALL AND UNDER FLOOR TO POKE-THRU DEVICE. EXTEND CONDUIT TO ACCESSIBLE CEILING SPACE IN CORRIDOR. PROVIDE TWO DATAPHONE 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 6" 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 MASS 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 NEARBY ACCESSORIES. COULD ALSO USE ALL RACEWAYS AND BOXES REQUIRED IN INTERIOR CARPENTRY. CONNECT ELECTRIC STRIKER 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 5' 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-6. 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.

VMDO ARCHITECTS

201 E MARKET STREET
CHARLOTTESVILLE, VA 22902
P 434.236.5684 F 434.236.4936
www.vmdo.com



LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101
Roanoke, Virginia 24011
Ph (540) 342-1816
Fax (540) 344-3410
Comm. No.: 13111
©Lawrence Perry and Associates, Inc.

RADFORD UNIVERSITY

RENOVATION OF THREE
RESIDENCE HALLS
DRAPER HALL

RADFORD UNIVERSITY
RADFORD, VIRGINIA

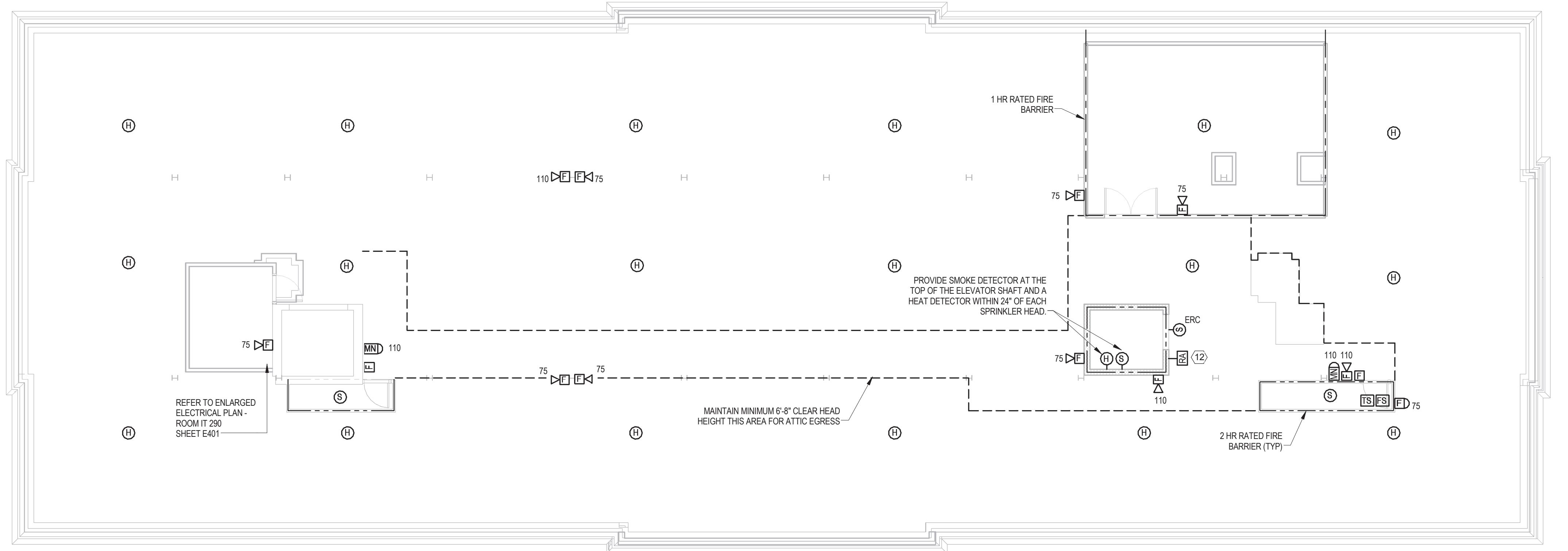
Project Code
VMDO Project Number
217-17565-002
1115

Checked By
Drawn By
Author

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.

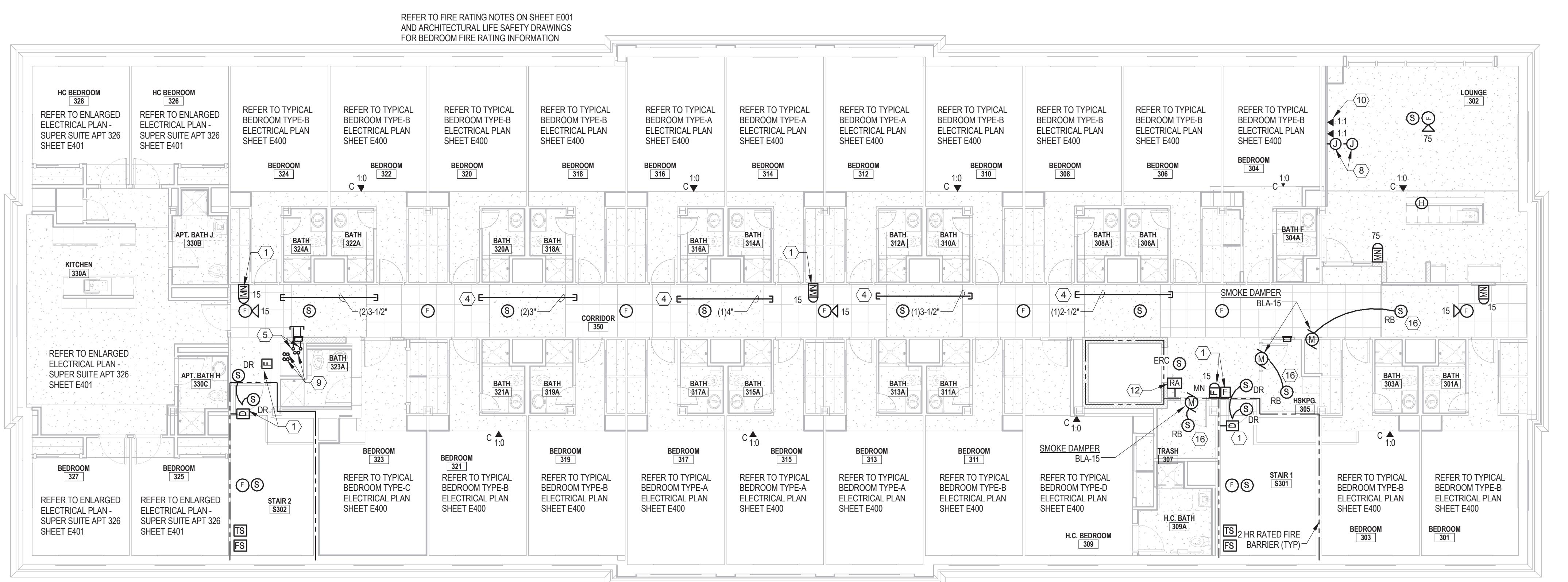


GRAPHIC SCALE - 1/32" = 1'-0"
0 32'-0" 64'-0" 96'-0"



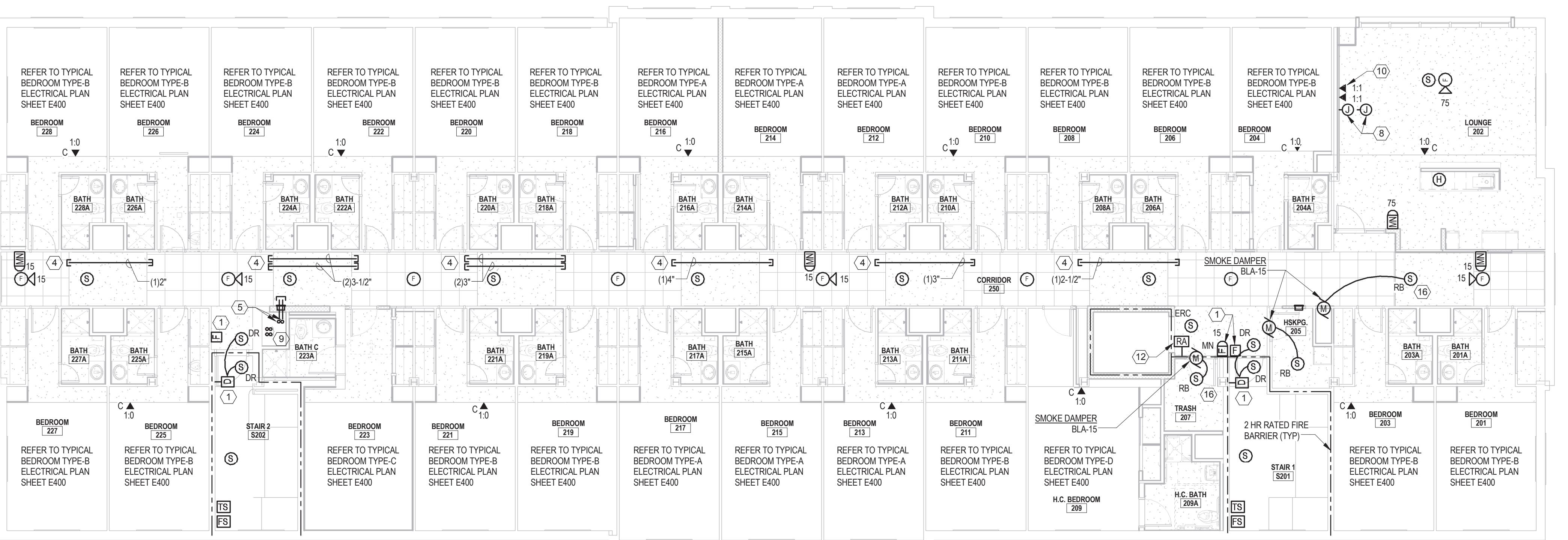
ATTIC FLOOR FIRE ALARM AND TELECOMMUNICATIONS PLAN

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



THIRD FLOOR FIRE ALARM AND TELECOMMUNICATIONS PLAN

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



SECOND FLOOR FIRE ALARM AND TELECOMMUNICATIONS PLAN

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

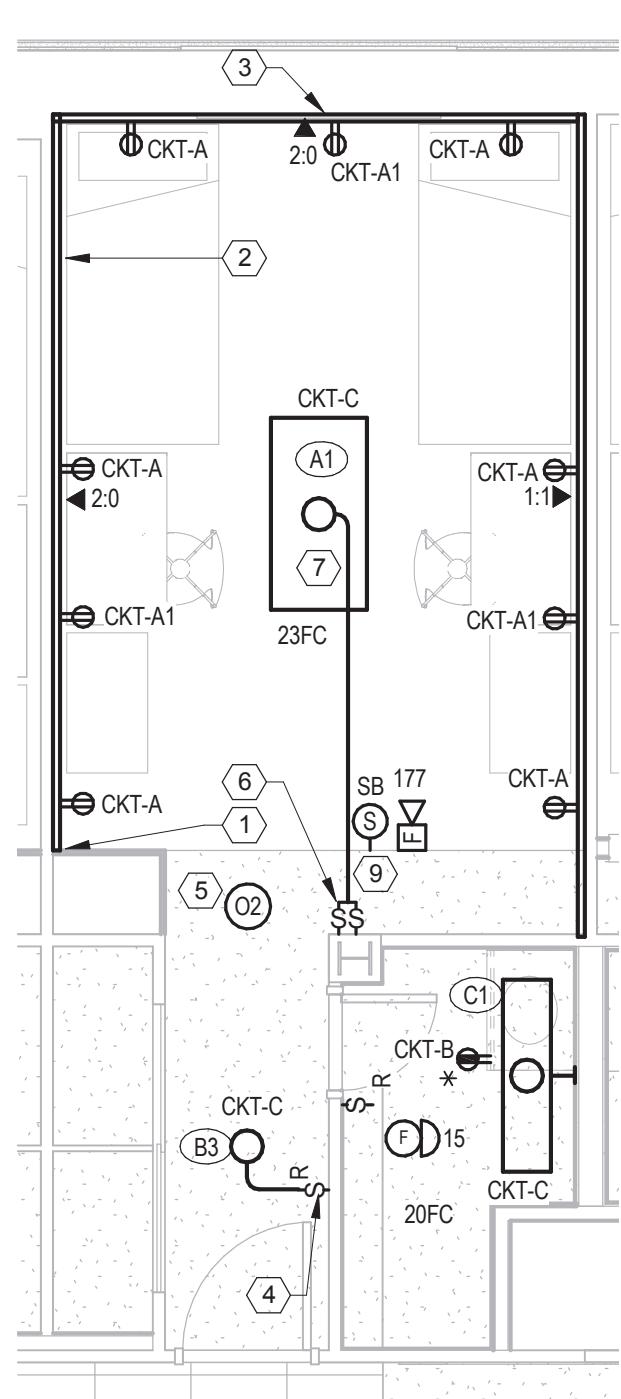
ISSUES AND REVISIONS
NO. SUBMITTAL DATE
1 BID DOCUMENTS 05.19.14
2 Addendum 1 06.19.14
2 Addendum 2 06.24.14
3 Addendum 3 06.25.14
CONSTRUCTION SET 05.01.15

SECOND, THIRD AND
ATTIC FLOOR FIRE
ALARM AND
TELECOMMUNICATIONS
PLANS

E302

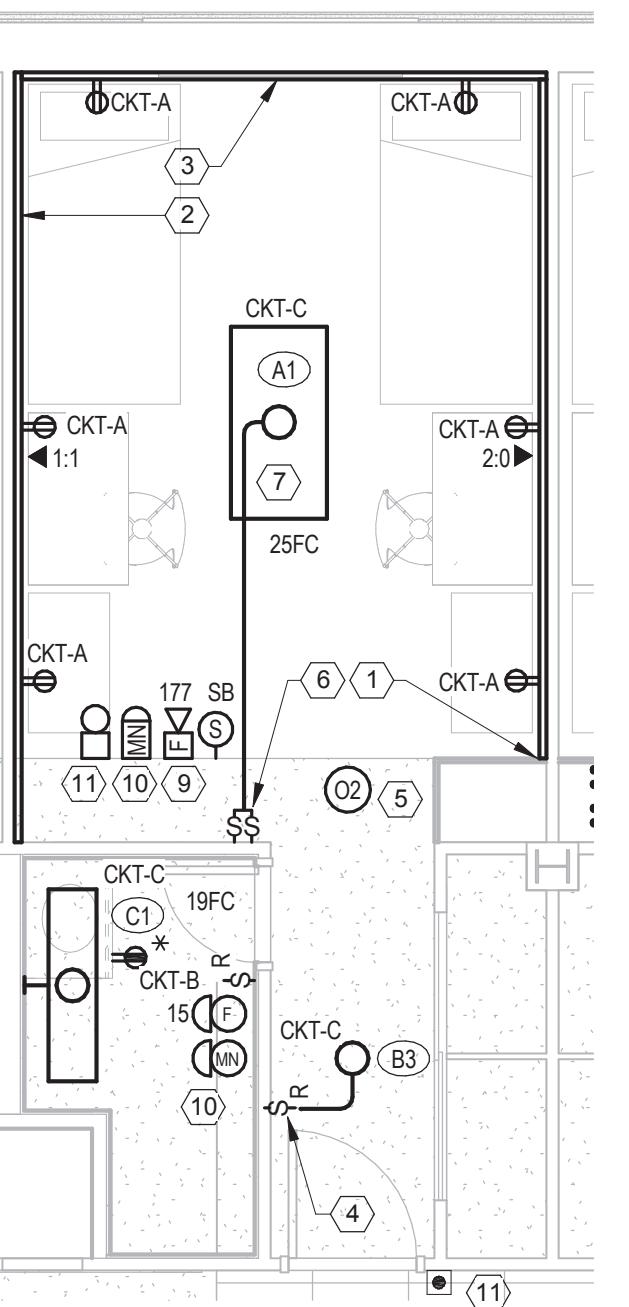
TYPICAL BEDROOM PLAN NOTES :○

1. FEED SURFACE RACEWAY WITH (1) 1-1/2" CONDUIT FOR TELECOMMUNICATIONS AND (1) CONDUIT SIZED AS REQUIRED FOR POWER. CONDUITS SHALL ROUTE DOWN IN CHASE AND FEED DIRECTLY INTO HORIZONTAL RUN OF SURFACE RACEWAY. CONDUITS SHALL RUN FROM ACCESSIBLE CORRIDOR CEILING SPACE TO CHASE AND DOWN TO SURFACE RACEWAY. VERTICAL SURFACE RACEWAY "DROPS" AND EXPOSED CONDUITS SHALL NOT BE PERMITTED.
2. ROUTE TWO CHANNEL METALLIC SURFACE RACEWAY AROUND ROOM AS INDICATED SUCH THAT TOP OF RACEWAY IS JUST BELOW WINDOW SILL (HEIGHT VARIES BY FLOOR).
3. PROVIDE SPACE IN RACEWAY FOR WINDOW SENSOR (SENSOR FURNISHED AND INSTALLED BY MECHANICAL). PROVIDE TRANSITION IN RACEWAY FOR WIRING UP TO WINDOW.
4. CONNECT SWITCH(ES) IN 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.
5. PROVIDE AUXILIARY HVAC RELAY IN OCCUPANCY SENSOR. MECHANICAL SHALL CONNECT RELAY TO THERMOSTAT CONTROLLING ROOM FAN COIL UNIT (FAN COIL UNIT SHOWN ON FULL FLOOR PLANS).
6. REUSE EXISTING SINGLE-GANG OUTLET BOX AND CONDUIT FOR NEW AC COMBINATION DEVICE WITH TWO SPST SWITCHES. CONNECT SWITCHES IN SERIES WITH ROOM OCCUPANCY SENSOR SUCH THAT LIGHTS WILL BE ON ONLY WHEN SWITCHES ARE CLOSED AND SENSOR CONTACT IS CLOSED.
7. REUSE EXISTING OUTLET BOX AND CONDUIT FOR NEW FIXTURE.
8. FEED SURFACE RACEWAY WITH (1) 1-1/2" CONDUIT FOR TELECOMMUNICATIONS AND (1) CONDUIT SIZED AS REQUIRED FOR POWER. CONDUITS SHALL ROUTE DOWN IN CHASE IN ADJACENT ROOM AND FEED DIRECTLY INTO THE BACK OF THE HORIZONTAL RUN OF SURFACE RACEWAY. CONDUITS SHALL RUN FROM ACCESSIBLE CORRIDOR CEILING SPACE TO CHASE AND DOWN TO SURFACE RACEWAY. VERTICAL SURFACE RACEWAY "DROPS" AND EXPOSED CONDUITS SHALL NOT BE PERMITTED.
9. MOUNT SMOKE DETECTOR IN BULKHEAD SUCH THAT TOP OF SMOKE DETECTOR IS 6" BELOW CEILING. SPEAKER/STROBE AND SMOKE DETECTOR SHALL ALIGN HORIZONTALLY.
10. PROVIDE MASS NOTIFICATION STROBE BEDROOMS 121, 204, 209, 225 AND 304, AND IN BATHROOMS 121A, 204A, 209A, 225A AND 304A. MASS NOTIFICATION STROBES SHALL BE AT SAME HEIGHT (WHERE WALL MOUNTED) AND OF SAME CANDLES RATING AS FIRE ALARM STROBE IN SAME SPACE.
11. PROVIDE WIRELESS DOOR CHIME WITH BUILT-IN STROBE LIGHT AND COMPATIBLE PUSH-BUTTON IN ROOMS 121, 304, 209, 225 AND 304 ONLY. PROVIDE SINGLE RECEPTACLE IN FACE OF BULKHEAD FOR WIRELESS DOORBELL/STROBE. CENTER OF RECEPTACLE SHALL BE SAME HEIGHT AS OTHER NOTIFICATION DEVICES IN BULKHEAD. CONNECT RECEPTACLE TO BEDROOM RECEPTACLE CIRCUIT.



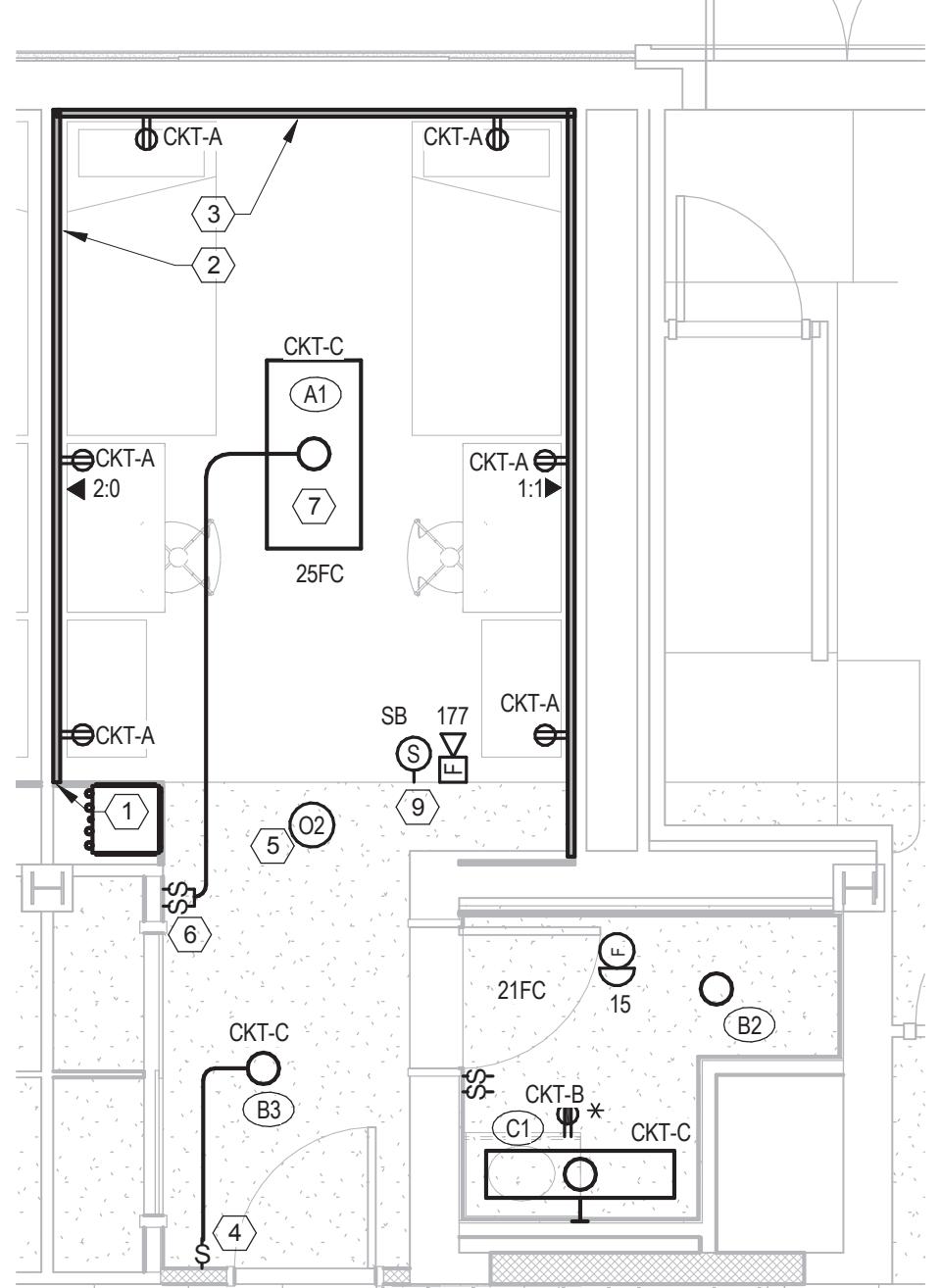
TYPICAL ENLARGED BEDROOM ELECTRICAL PLAN - TYPE 'A'

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



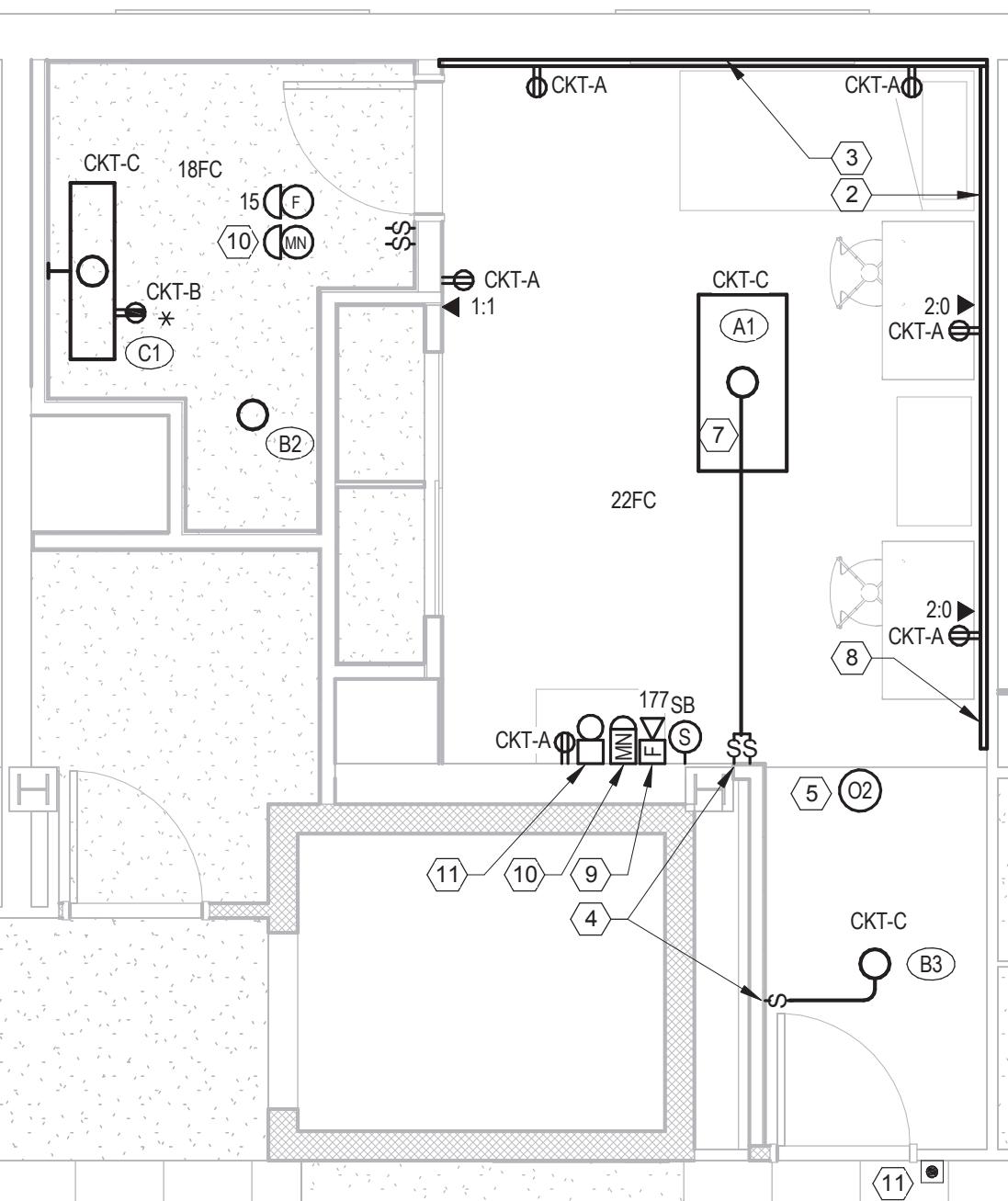
TYPICAL ENLARGED BEDROOM ELECTRICAL PLAN - TYPE 'B'

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



TYPICAL ENLARGED BEDROOM ELECTRICAL PLAN - TYPE 'C'

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



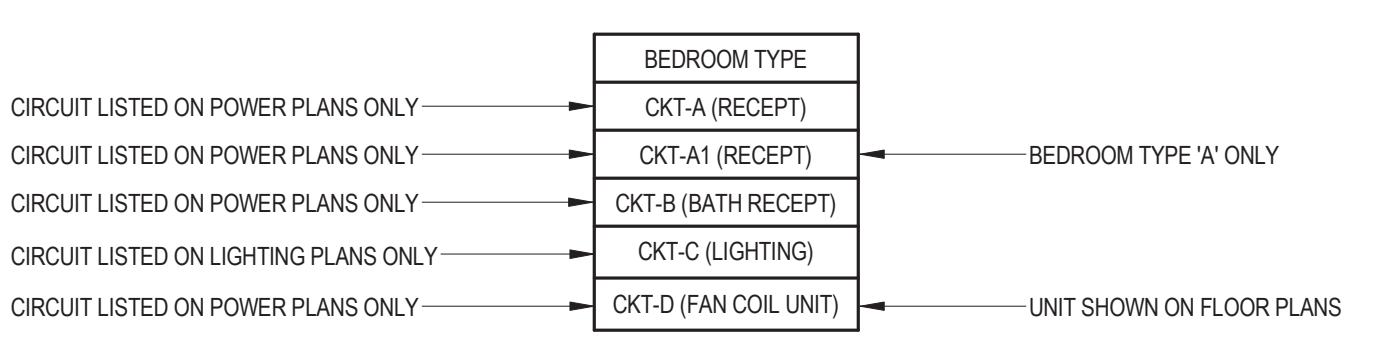
TYPICAL ENLARGED BEDROOM ELECTRICAL PLAN - TYPE 'D'

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

NOTE: FIRE ALARM NOTIFICATION DEVICES IN THE FOLLOWING BEDROOMS SHALL BE PROVIDED WITH AN AMBER ALERT STROBE IN ADDITION TO FIRE ALARM NOTIFICATION STROBE (APPLIES TO STROBE IN BEDROOM AND BATHROOM):
- BEDROOM 121, 204, 209, 225 AND 304.

NOTE: WALLS SEPARATING BACK-TO-BACK BATHROOMS ARE 1/2 HR RATED FIRE PARTITIONS. RECESSED OUTLET BOXES INSTALLED IN THESE WALLS SHALL CONFORM TO VUSBC REQUIREMENTS FOR RATED WALLS.

AVERAGE LIGHTING LEVELS ARE SIMILAR TO THOSE SHOWN FOR OTHER BEDROOMS AND PRIVATE TOILETS ON THE LIGHTING PLAN.
NOTE: SOME BEDROOMS HAVE CHASES THAT ARE NOT SHOWN ON THESE TYPICAL PLANS. EXACT SIZES AND SHAPES OF THE BEDROOMS MAY VARY FROM WHAT IS SHOWN ON THESE TYPICAL PLANS. CAREFULLY COORDINATE SURFACE RACEWAYS WITH CHASES AND EXACT ROOM SIZES AND SHAPES AS SHOWN ON THE FULL FLOOR PLANS.



**TYPICAL BEDROOM ANNOTATION
BLOCK FOR CIRCUIT NUMBERS**

Checked By RGW
Drawn By BSM

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.

GRAPHIC SCALE - 1/32" = 1'-0"
0 32'-0" 64'-0" 96'-0"

ISSUES AND REVISIONS		
NO.	SUBMITTAL	DATE
1	BID DOCUMENTS Addendum 1	05.19.14 06.19.14
2	Addendum 2	06.24.14
3	Addendum 3	06.25.14
	CONSTRUCTION SET	05.01.15

**TYPICAL FLOOR PLANS -
BEDROOMS -
ELECTRICAL**

E400

VMDO ARCHITECTS

201 E MARKET STREET
CHARLOTTESVILLE, VA 22902
P 434.236.5684 F 434.236.4995
www.vmdo.com

LPA

LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101
Roanoke, Virginia 24011
Ph: (540) 342-1816
Fax: (540) 344-3410
Comm. No.: 13111
©Lawrence Perry and Associates, Inc.

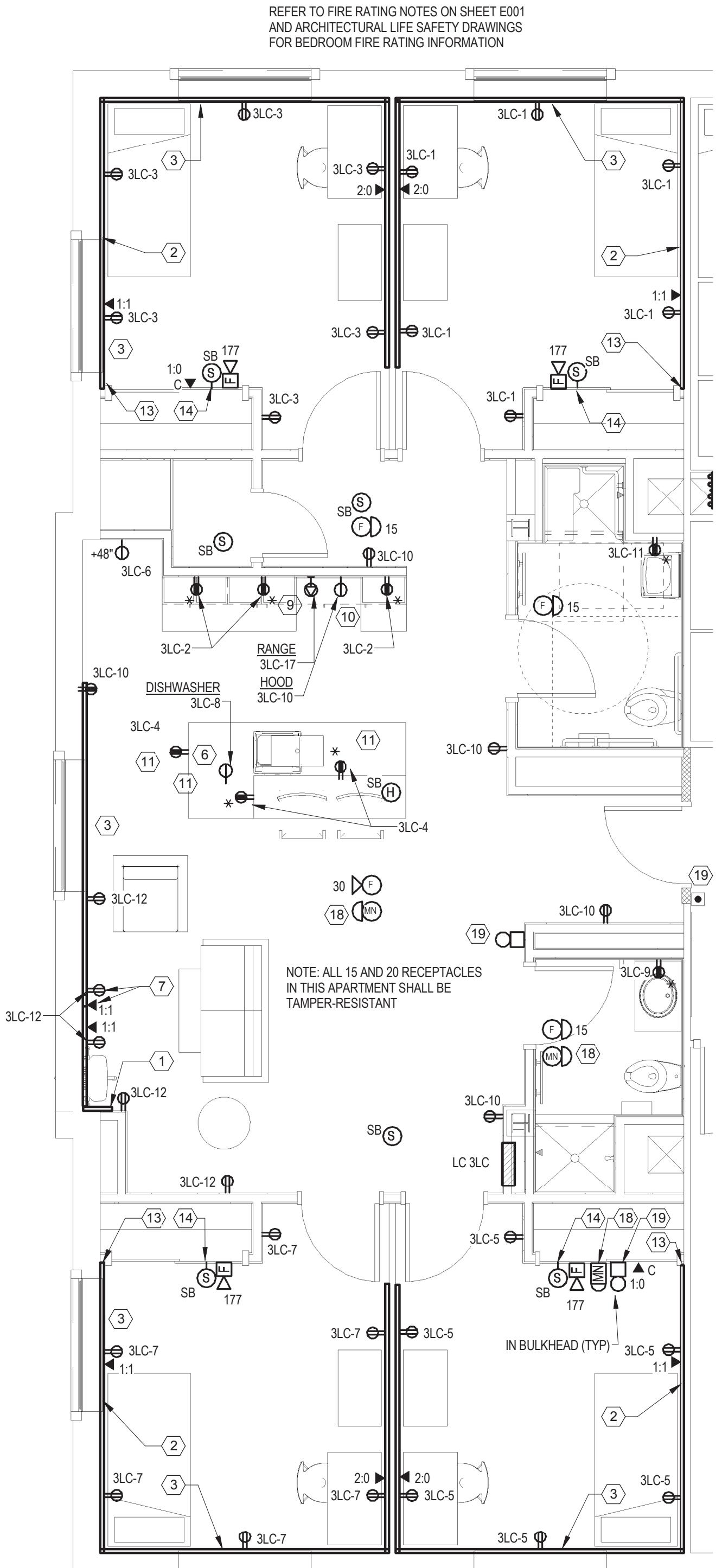
RADFORD UNIVERSITY
RADFORD, VIRGINIA
Project Code 217-17565-002
VMDO Project Number 1115



RENOVATION OF THREE RESIDENCE HALLS DRAPER HALL

RADFORD UNIVERSITY
RADFORD, VIRGINIAProject Code 217-17565-002
VMDO Project Number 1115Checked By RGW
Drawn By BSM

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.





LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101
Roanoke, Virginia 24011
Ph: (540) 342-1816
Fax: (540) 344-3410
Comm. No.: 13111
©Lawrence Perry and Associates, Inc.

RADFORD UNIVERSITY

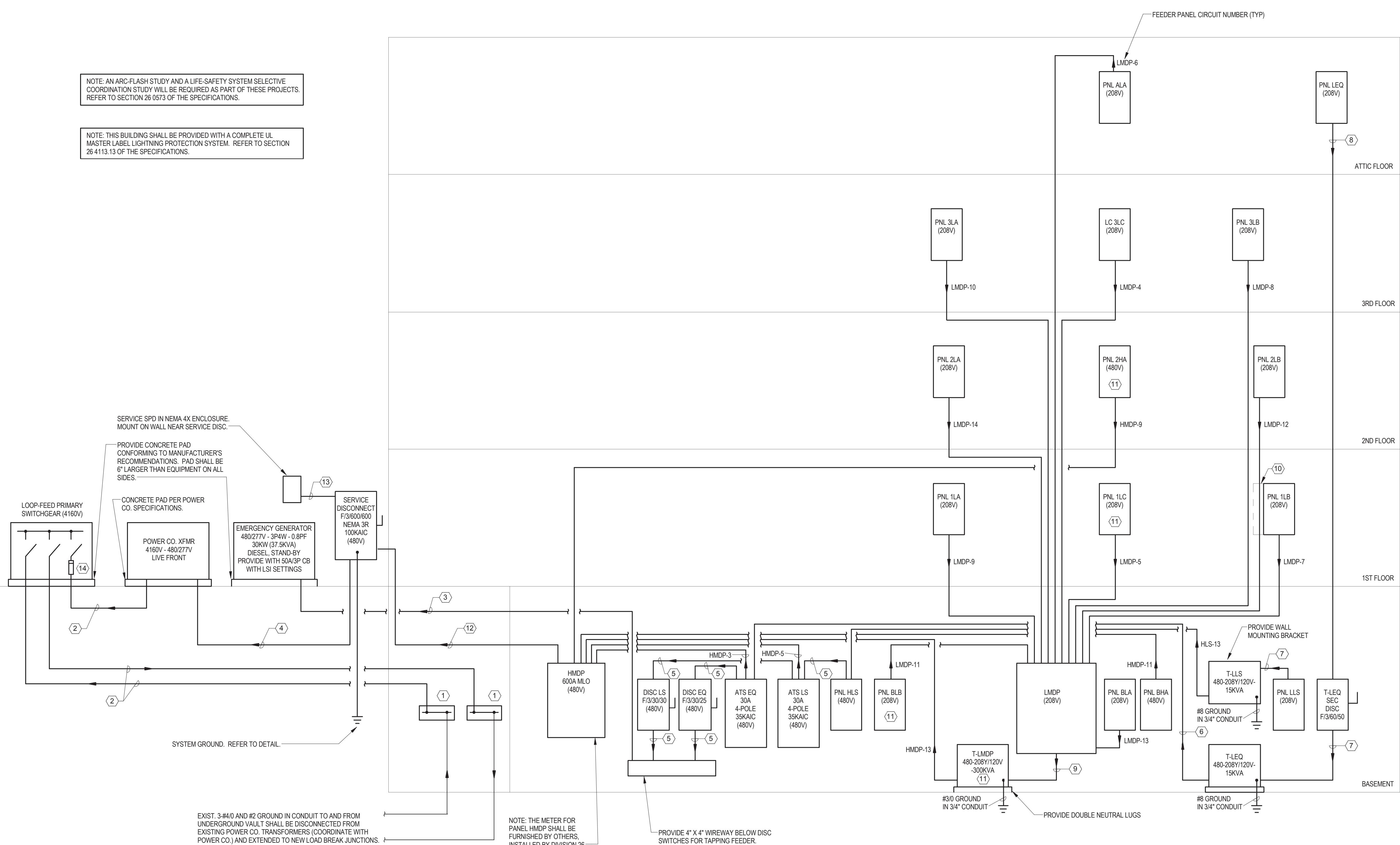
RENOVATION OF THREE
RESIDENCE HALLS
DRAPER HALL

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565-002
VMDO Project Number 1115

Checked By RGW
Drawn By BSM

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.



POWER RISER DIAGRAM - DRAPER

NO SCALE

'X' INDICATES QUANTITY OF DATAPHONE CABLES TO BE PULLED TO OUTLET BY CONTRACTOR
(P) INDICATES OUTLET 42" AFF TO CENTER FOR COURTESY PHONE
'Y' INDICATES QUANTITY OF CATV CABLES TO BE PULLED TO OUTLET BY CONTRACTOR
(C) INDICATES OUTLET ON WALL ABOVE A.C.T. CEILING, JUST BELOW EXISTING RADIO DUCTING, OR IN EXPOSED STRUCTURE
() NO SUBSCRIPT INDICATES OUTLET 18" AFF TO CENTER, OR AT BEDROOM HORIZONTAL SURFACE RACEWAY ELEVATION
SEE SPECIFICATIONS FOR TELECOMMUNICATIONS CABLEING REQUIREMENTS



GRAPHIC SCALE - 1/32" = 1'-0"
0 32'-0" 64'-0" 96'-0"

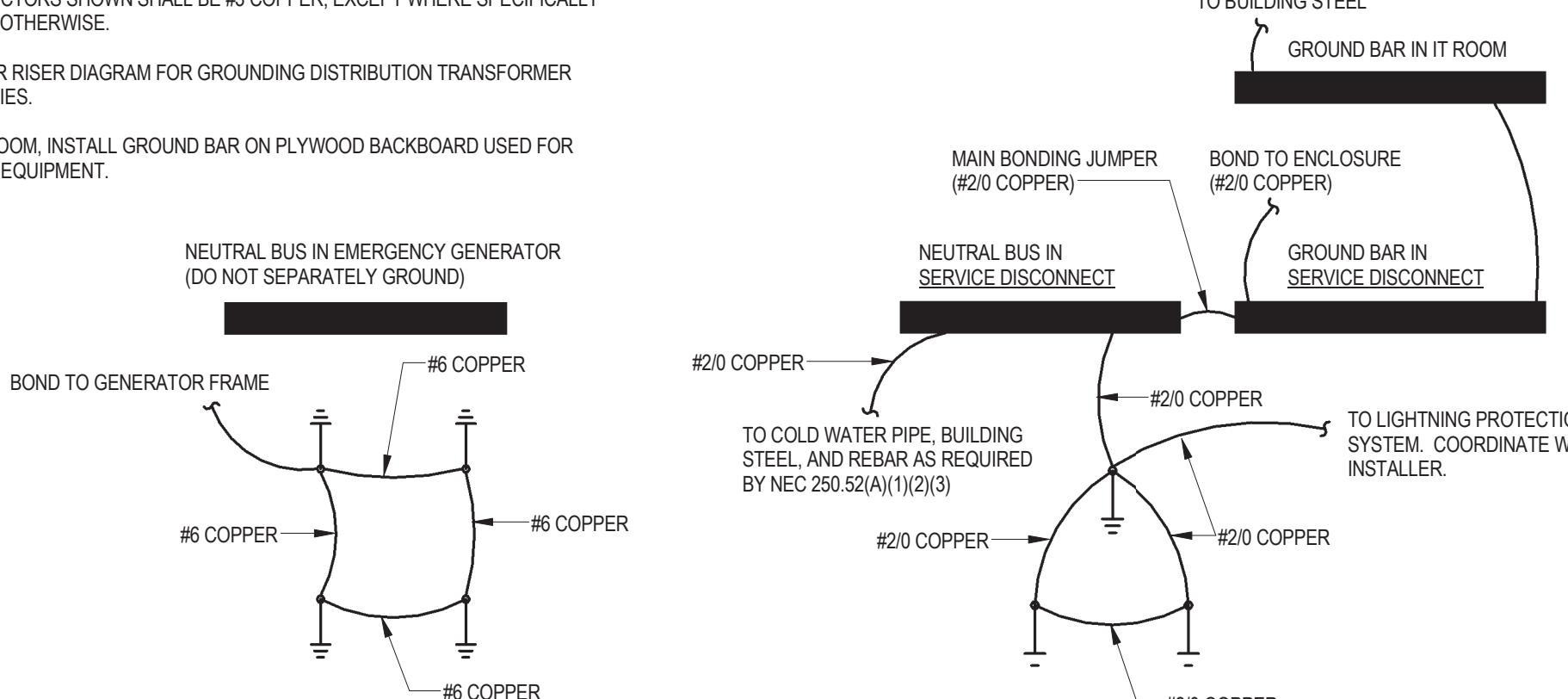
COMMUNICATIONS SYMBOL DETAIL

NO SCALE

ISSUES AND REVISIONS	
NO.	SUBMITTAL
	BID DOCUMENTS
1	Addendum 1
2	Addendum 2
3	Addendum 3
	CONSTRUCTION SET
	DATE
	05.19.14
	06.19.14
	06.24.14
	06.25.14
	05.01.15

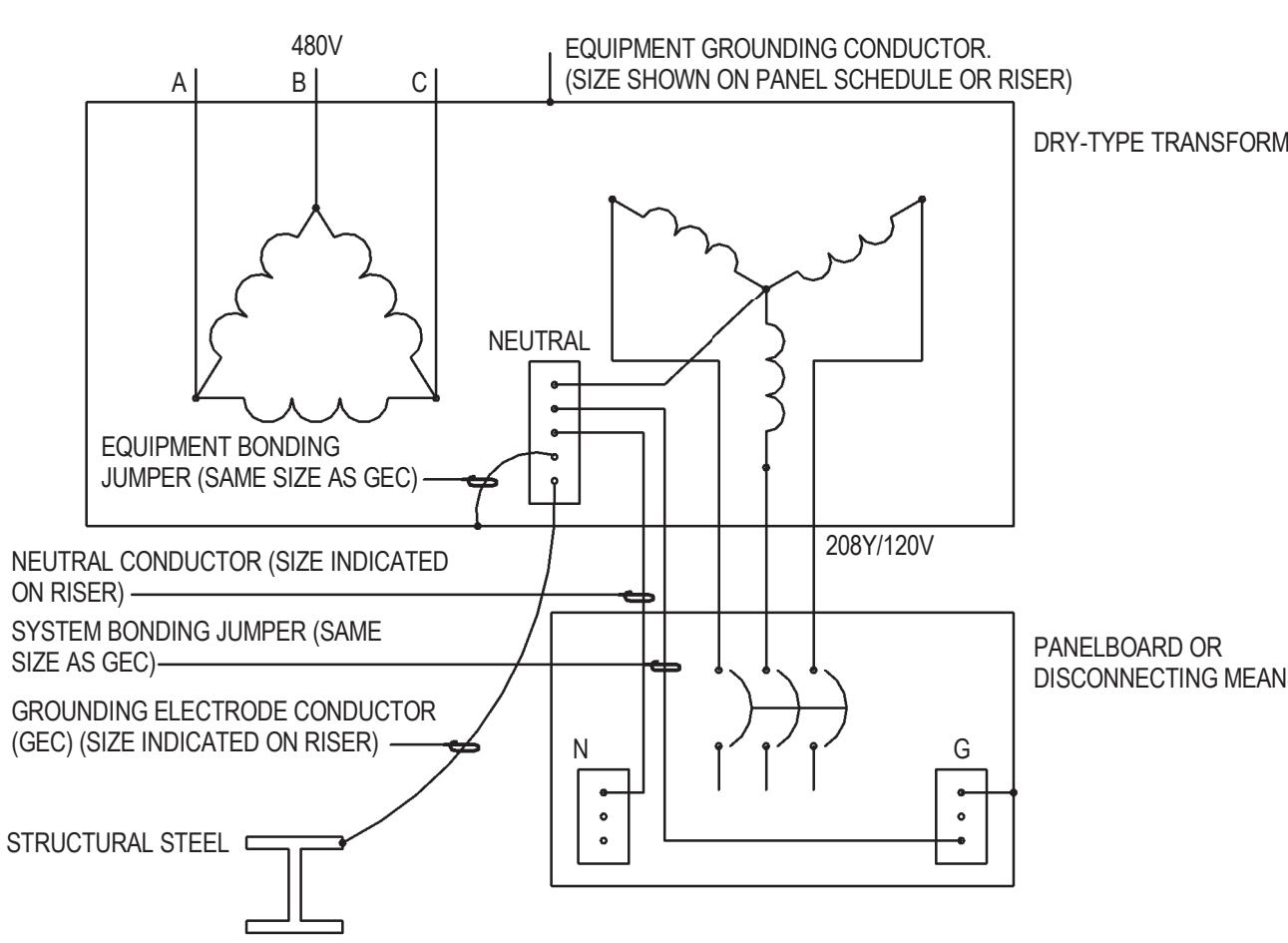
GROUNDING SCHEMATIC GENERAL NOTES:

1. ALL GROUND ROD CONNECTIONS SHALL BE THERMO WELD. THE THREE #3 GROUND RODS SHOWN IN THE TRIPOLI SHALL BE 10 FEET APART. THE FOUR (4) GROUND RODS SHOWN AROUND THE GENERATOR SHALL BE EVENLY SPACED AT LEAST 6 FEET APART.
2. ALL CONDUCTORS SHOWN SHALL BE #6 COPPER, EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE.
3. SEE POWER RISER DIAGRAM FOR GROUNDING DISTRIBUTION TRANSFORMER SECONDARIES.
4. IN THE IT ROOM, INSTALL GROUND BAR ON PLYWOOD BACKBOARD USED FOR MOUNTING EQUIPMENT.



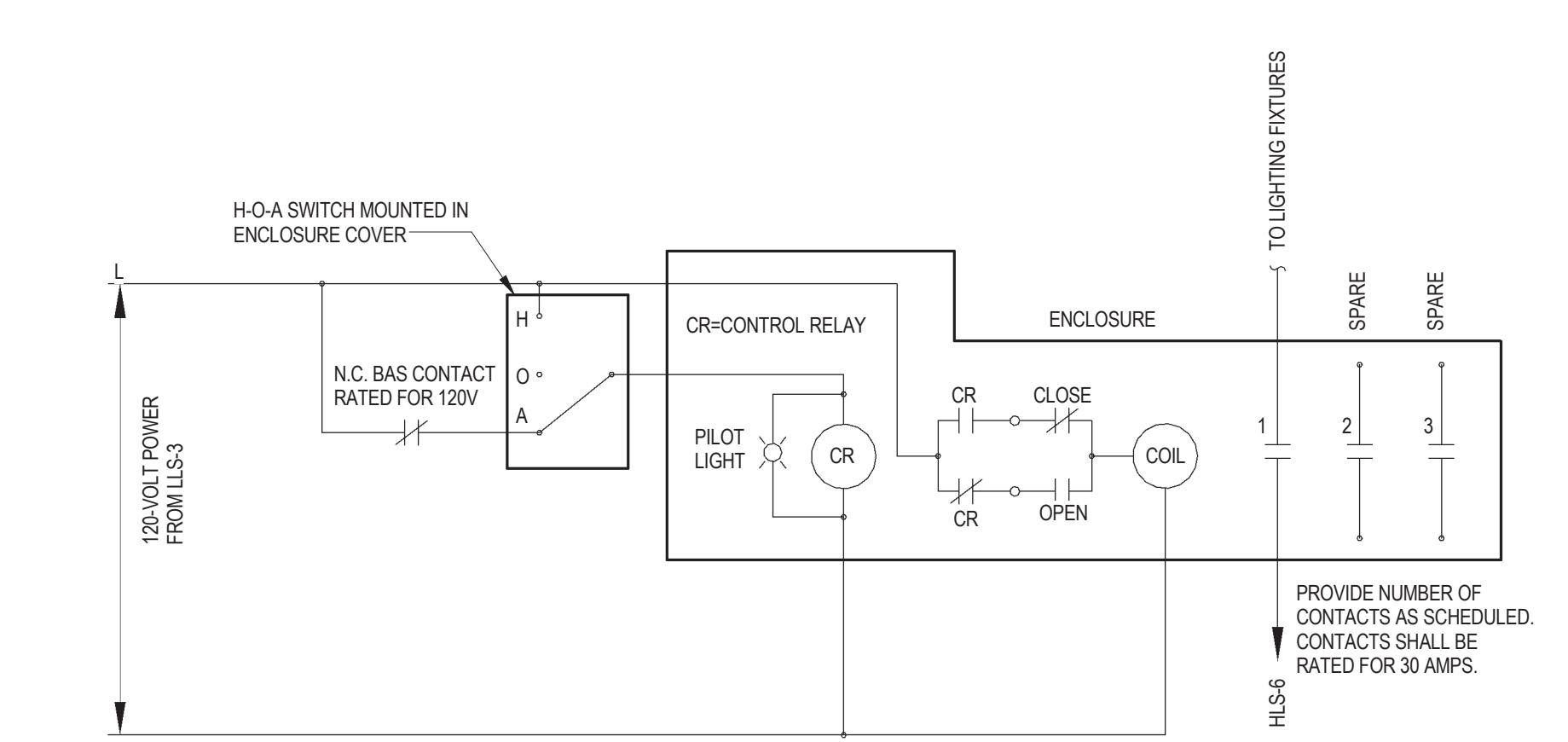
BUILDING GROUNDING SCHEMATIC

NO SCALE



TRANSFORMER GROUNDING DETAIL

NO SCALE



EMERGENCY LIGHTING CONTACTOR WIRING DIAGRAM

SCALE: NONE

NOTE: WIRING MUST BE INSTALLED SUCH THAT CONTACTS FED FROM LIGHTING CIRCUITS WILL CLOSE UPON LOSS OF POWER TO THE BAS (I.E. EXTERIOR EGRESS LIGHTING SHALL ENERGIZE UPON LOSS OF POWER)

ELECTRICAL DETAILS
AND DIAGRAMS



LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101
Roanoke, Virginia 24011
Ph: (540) 342-1816
Fax: (540) 344-3410
Comm. No.: 13111
©Lawrence Perry and Associates, Inc.



RENOVATION OF THREE
RESIDENCE HALLS
DRAPER HALL

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code 217-17565-002
VMDO Project Number 1115

100A PROVISION

100A PROVISION

100A PROVISION

PANEL-HLS VIA ATS LS

ELEVATOR

SPARE

HWP-1

PANEL-2HA

HWP-2

PANEL-BHA

CWP-1

PANEL-LMDP (VIA XFMR)

CWP-2

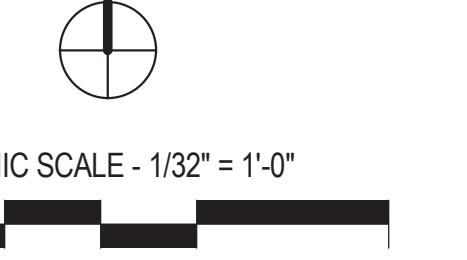
250A PROVISION

100A PROVISION

- CIRCUIT 10 IS NON-COINCIDENT WITH CIRCUIT 8 AND CIRCUIT 11 IS NON-COINCIDENT WITH CIRCUIT 12.

Checked By RGW
Drawn By BSM

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.



GRAPHIC SCALE - 1/32" = 1'-0"

0 32' - 0" 64' - 0" 96' - 0"

ISSUES AND REVISIONS
NO. SUBMITTAL DATE
5 BID DOCUMENTS 06.19.14
1 Addendum 1 06.19.14
2 Addendum 2 06.24.14
3 Addendum 3 06.25.14
CONSTRUCTION SET 05.01.15

PANELBOARD
SCHEMES

E501

PANEL BLB

CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	L1	L2	L3	CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	L1	L2	L3	
1	REC STAR 1	201	#12	#12	#12	3/4"	.72			2	SEWAGE PUMP CONTROL PANEL	151	#12	#12	#12	3/4"	.2			
3	REC STAR 2	201	#12	#12	#12	3/4"		.72		4	ELEV PIT SUMP PUMP	201	#12	#12	#12	3/4"	.7			
5	REC-CRAWL SPACE / SUMP ALARM	201	#12	#12	#12	3/4"			.72	6	INSTANTANEOUS WATER HEATER	201	#12	#12	#12	3/4"		.53		
7	EF-4, UH-2, UH-1 (BASEMENT)	151	#12	#12	#12	3/4"	.82			8	HWCP-1, HWCP-2	151	#12	#12	#12	3/4"	.77			
9	LTGREC ELEVATOR PIT	201	#12	#12	#12	3/4"		.3		10	ERV-3 (BASEMENT)	151	#12	#12	#12	3/4"	.18			
11	R/C ELEVATOR MACH ROOM	201	#12	#12	#12	3/4"			.18	12	BAS PANELS	201	#12	#12	#12	3/4"	.1			
13	REC BASEMENT MECH ROOM	201	#12	#12	#12	3/4"	.9			14	GENERATOR JACKET HEATER	201	#12	#12	#12	3/4"	.15			
15	SPARE	201	-	-	-	-				16	GENERATOR RECEPTACLE	201	#12	#12	#12	3/4"	.18			
17	SUMP ALARM	201	#12	#12	#12	3/4"		.18		18	SPARE	201	-	-	-	-	-	-		
19	SPARE	201	-	-	-	-				20	SPARE	201	-	-	-	-	-	-		
21	MECH M006 MODS	201	#12	#12	#12	3/4"	.54			22	SPARE	201	-	-	-	-	-	-		
23	SPARE	201	-	-	-	-				24	SPARE	201	-	-	-	-	-	-		
25	SPARE	201	-	-	-	-				26	SPARE	201	-	-	-	-	-	-		
27	OU-2 (CRAWL SPACE)	202	#10	-	#10	3/4"	.12			28	SPARE	201	-	-	-	-	-	-		
29	16.5MCA-1PH-208V	-	#10	-	-	-		.12		30	SPARE	201	-	-	-	-	-	-		
31	OU-1 (CRAWL SPACE)	202	#12	-	#12	3/4"	.121			32	SPARE	201	-	-	-	-	-	-		
33	16.5MCA-1PH-208V	-	#12	-	-	-		.121		34	SPARE	201	-	-	-	-	-	-		
35	HPU-1 (CRAWL SPACE)	202	#12	-	#12	3/4"		.126		36	EXIST LIGHTS	201	#10	#10	#10	3/4"	.15			
37	16.5MCA-1PH-208V	-	#12	-	-	-		.126		38	EXIST LIGHTS	201	#10	#10	#10	3/4"	.15			
39	WHR-3 MECHANICAL M006	302	#10	-	#10	3/4"	.225			40	EXIST TUNNEL LIGHTS	201	#10	#10	#10	3/4"	.15			
41	4.5KW-1PH-208V	-	#10	-	-	-		.225		42	EXIST LOAD	201	#10	#10	#10	3/4"	.15			
43	SPARE	201	-	-	-	-		.44		44	SPARE	202	-	-	-	-	-	-		
45	SPARE	201	-	-	-	-		.46		46	+	202	-	-	-	-	-	-		
47	SPARE	201	-	-	-	-		.48		48	SPACE ONLY	201	-	-	-	-	-	-		
49	SPARE	201	-	-	-	-		.50		50	SPACE ONLY	201	-	-	-	-	-	-		
51	SPARE	201	-	-	-	-		.52		52	EXIST LOAD	502	#6	-	#10	3/4"	.41			
53	SPARE	201	-	-	-	-		.54		54	+	-	#6	-	-	-	.41			
																			PHASE LOAD TOTALS 8.88 12.88 15.42	

PANELBOARD HMDP SCHEDULE

480Y/277 VOLT, 3-PH, 4-WIRE, GROUND BUS, SOLID NEUTRAL, 600A BUSSING, WALL MOUNT, 35000 AIC, "M" BESIDE BREAKER INDICATES FEEDER TO BE SUB-METERED											
CKT NO.	CIRCUIT BREAKER POLES	AMPS	# SETS	PHASE	NEUT	GND	COND	L1	L2	L3	SERVING
MAIN LUGS	-	-	-	-	-	-	-	-	-	-	
1	3	--	-	-	-	-	-	-	-	-	100A PROVISION
2	3	--	-	-	-	-	-	-	-	-	100A PROVISION
3	3	25	1	10	10	10	3/4"				PANEL-LD-VIA ATS EQ
4	3	--	-	-	-	-	-	-	-	-	100A PROVISION
5	3	30	1	10	10	10	3/4"				PANEL-HLS-VIA ATS LS
6	3	110	1	2	--	-	2	1-			



**RENOVATION OF THREE
RESIDENCE HALLS
DRAPER HALL**

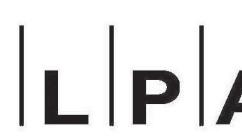
RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code
VMDO Project Number
217-17565-002
1115

217-17565-002
1115

PANEL HLS																				
VOLTAGE: 480Y/277V		MAIN: 30A MCB		INTEGRAL SPD: YES																
SYSTEM: 3PH, 4W		BUS RATING: 100A		MOUNTING: SURFACE																
GND: YES		GROUND BUS: YES										INTERRUPT RATING: 25,000 AIC								
CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	L1	L2	L3	CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	L1	L2	L3	
1	ATTIC EMERGENCY LTG	201	#12	#12	#12	3/4"	.7			2	LTG ELEVATOR RM	201	#12	#12	#12	3/4"	.12			
3	BASEMENT EMERGENCY LTG	201	#12	#12	#12	3/4"	.33			4	LTG STAIRWELLS	201	#12	#12	#12	3/4"	1.1			
5	1ST FLR EMERGENCY LTG	201	#12	#12	#12	3/4"				6	EXTERIOR EMERGENCY LTG	201	#12	#12	#12	3/4"				.44
7	2ND FLR EMERGENCY LTG	201	#12	#12	#12	3/4"	.3			8	SPARE	201	-	-	-	-	-	-	-	
9	3RD FLR EMERGENCY LTG	201	#12	#12	#12	3/4"	.28			10	SPARE	201	-	-	-	-	-	-	-	
11	SPARE	201	-	-	-	-				12	SPARE	201	-	-	-	-	-	-	-	
13	PANEL LLS	253	#10	-	#10	3/4"	5.14			14	SPACE ONLY	-	-	-	-	-	-	-	-	
15	(VIA T-LLS)	-	#10	-	-	-	3.06			16	SPACE ONLY	-	-	-	-	-	-	-	-	
17	*	-	#10	-	-	-	1.64			18	SPACE ONLY	-	-	-	-	-	-	-	-	
MAIN CIRCUIT BREAKER SHALL HAVE LS1 ADJUSTABLE TRIP SETTINGS														PHASE LOAD TOTALS		6.26	4.77	2.51		
LOADS (KVA)														PHASE LOAD TOTALS						
LOADS (KVA)														LOADS (KVA)		CONNECTED		DEMAND	DEMAND	
LIGHTING														KITCHEN EQUIPMENT		0	1.0	0		
REC TO 10 KVA														CONTINUOUS		0	1.25	0		
REC REMAINING														NON-CONTINUOUS		8.84	1.0	8.84		
SPACE HEATING														DEMAND		0	1.0	0		
AIR CONDITIONING														TOTAL CONNECTED LOAD		13.5	KVA	16.3	AMPS	
NON-SEASONAL MOTORS														MIN FEEDER / PANEL CAPACITY		14.7	KVA	17.7	AMPS	
LARGEST MOTOR														OVERALL DEMAND FACTOR		1.09				
WATER HEATING														PHASE LOAD TOTALS						

PANEL 1LA																			
VOLTAGE: 208Y/120V		MAIN: 225A MLO		INTEGRAL SPD: NO															
SYSTEM: 3PH, 4W		BUS RATING: 225A		MOUNTING: FLUSH															
GND: YES		GROUND BUS: YES										INTERRUPT RATING: 10,000 AIC							
CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	L1	L2	L3	CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	L1	L2	L3
1	BATHROOM REC 107A	201	#12	#12	#12	3/4"	.25			2	BATHROOM REC 114A	201	#12	#12	#12	3/4"	.25		
3	BATHROOM REC 109A	201	#12	#12	#12	3/4"				4	BATHROOM REC 116A	201	#12	#12	#12	3/4"			.25
5	BATHROOM REC 111A	201	#12	#12	#12	3/4"				6	BATHROOM REC 118A	201	#12	#12	#12	3/4"			.25
7	BATHROOM REC 113A	201	#12	#12	#12	3/4"	.25			8	BATHROOM REC 120A	201	#12	#12	#12	3/4"			.25
9	BATHROOM REC 115A	201	#12	#12	#12	3/4"	.25			10	BATHROOM REC 122A	201	#12	#12	#12	3/4"			.25
11	BATHROOM REC 117A	201	#12	#12	#12	3/4"				12	BATHROOM REC 124A	201	#12	#12	#12	3/4"			.25
13	BATHROOM REC 121A	201	#12	#12	#12	3/4"	.25			14	BATHROOM REC 126A	201	#12	#12	#12	3/4"			.25
15	BATHROOM REC 123A	201	#12	#12	#12	3/4"	.25			16	REC SUPER SUITE 110	201	#12	#12	#12	3/4"			.144
17	SPARE	201	-	-	-	-				18	SMALL APPLIANCE SUPER SUITE 110	201	#12	#12	#12	3/4"			.15
19	REGRADING HOOD RD APT 101	201	#12	#12	#12	3/4"	.9			20	SMALL APPLIANCE SUPER SUITE 110	201	#12	#12	#12	3/4"			.15
21	REC RD APT 101	201	#12	#12	#12	3/4"				22	BATHROOM REC 110C	201	#12	#12	#12	3/4"			.25
23	DISHWASHER RD APT 103	201	#12	#12	#12	3/4"				24</									



LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101
Roanoke, Virginia 24011
Ph (540) 342-1816
Fax (540) 344-3410
Com. No.: 13111
©Lawrence Perry and Associates, Inc.



RENOVATION OF THREE RESIDENCE HALLS DRAPER HALL

RADFORD UNIVERSITY
RADFORD, VIRGINIA

Project Code
VMDO Project Number
217-17565-002
1115

PANEL 2LB																				
VOLTAGE: 208Y/120V SYSTEM: 3PH, 4W SOLID NEUTRAL: YES																				
MAIN: 225A MLO BUS RATING: 225A GROUND BUS: YES							INTEGRAL SPD: NO MOUNTING: FLUSH INTERRUPT RATING: 10,000 AIC													
CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	L1	L2	L3	CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	L1	L2	L3	
1	REC BEDROOM 201	20/1	#12	#12	#12	3/4"	1.08			2	REC BEDROOM 204	20/1	#12	#12	#12	3/4"	1.08			
3	REC BEDROOM 203	20/1	#12	#12	#12	3/4"		1.08		4	REC BEDROOM 206	20/1	#12	#12	#12	3/4"	1.08			
5	REC BEDROOM 209	20/1	#12	#12	#12	3/4"			1.08	6	REC BEDROOM 208	20/1	#12	#12	#12	3/4"		1.08		
7	REC BEDROOM 211	20/1	#12	#12	#12	3/4"	1.08			8	REC BEDROOM 210	20/1	#12	#12	#12	3/4"	1.08			
9	REC BEDROOM 213	20/1	#12	#12	#12	3/4"		1.08		10	REC BEDROOM 212	20/1	#12	#12	#12	3/4"	1.08			
11	REC BEDROOM 213	20/1	#12	#12	#12	3/4"			1.08	12	REC BEDROOM 214	20/1	#12	#12	#12	3/4"			54	
13	REC BEDROOM 215	20/1	#12	#12	#12	3/4"	1.08			14	REC BEDROOM 214	20/1	#12	#12	#12	3/4"	1.08			
15	REC BEDROOM 215	20/1	#12	#12	#12	3/4"		1.08		16	REC BEDROOM 214	20/1	#12	#12	#12	3/4"		54		
17	REC BEDROOM 217	20/1	#12	#12	#12	3/4"	1.08			18	REC BEDROOM 216	20/1	#12	#12	#12	3/4"	1.08			
19	REC BEDROOM 217	20/1	#12	#12	#12	3/4"	54			20	REC BEDROOM 216	20/1	#12	#12	#12	3/4"	54			
21	REC BEDROOM 219	20/1	#12	#12	#12	3/4"	1.08			22	REC BEDROOM 218	20/1	#12	#12	#12	3/4"	1.08			
23	REC BEDROOM 221	20/1	#12	#12	#12	3/4"	1.08			24	REC BEDROOM 220	20/1	#12	#12	#12	3/4"	1.08			
25	REC BEDROOM 223	20/1	#12	#12	#12	3/4"	1.08			26	REC BEDROOM 222	20/1	#12	#12	#12	3/4"	1.08			
27	REC BEDROOM 225	20/1	#12	#12	#12	3/4"	1.08			28	REC BEDROOM 224	20/1	#12	#12	#12	3/4"	1.08			
29	REC BEDROOM 227	20/1	#12	#12	#12	3/4"	1.08			30	REC BEDROOM 226	20/1	#12	#12	#12	3/4"	1.08			
31	SPARE	20/1	-	-	-	-	-			32	REC BEDROOM 228	20/1	#12	#12	#12	3/4"	1.08			
33	SPARE	20/1	-	-	-	-	-			34	SPARE	20/1	-	-	-	-	-	-		
35	SPARE	20/1	-	-	-	-	-			36	SPARE	20/1	-	-	-	-	-	-		
37	SPARE	20/1	-	-	-	-	-			38	SPARE	20/1	-	-	-	-	-	-		
39	SPARE	20/1	-	-	-	-	-			40	SPARE	20/1	-	-	-	-	-	-		
41	SPARE	20/1	-	-	-	-	-			42	SPARE	20/1	-	-	-	-	-	-		
NOTE 1: PROVIDE AFCI BREAKER(S) FOR CIRCUIT(S) 1, 2, 4																				
NOTE 2: PROVIDE PANEL WITH ADDITIONAL GUTTER SPACE FOR FEEDER TO 2LB OR 3LB TO PASS THROUGH. FIELD VERIFY WHICH EXISTING FEEDER PASSES THROUGH.																				
NOTE 3: PROVIDE 200% RATED NEUTRAL BAR.																				
PHASE LOAD TOTALS 10.8 9.72 9.72																				

PANEL 1LB																				
VOLTAGE: 208Y/120V SYSTEM: 3PH, 4W SOLID NEUTRAL: YES																				
MAIN: 225A MLO BUS RATING: 225A GROUND BUS: YES							INTEGRAL SPD: NO MOUNTING: FLUSH INTERRUPT RATING: 10,000 AIC													
CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	L1	L2	L3	CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	L1	L2	L3	
1	REC BEDROOM 105 (RD APT)	20/1	#12	#12	#12	3/4"	1.08			2	REC BEDROOM 110B	20/1	#12	#12	#12	3/4"	1.44			
3	REC BEDROOM 107	20/1	#12	#12	#12	3/4"		1.08		4	REC BEDROOM 110D	20/1	#12	#12	#12	3/4"	1.08			
5	REC BEDROOM 107	20/1	#12	#12	#12	3/4"				6	REC BEDROOM 114	20/1	#12	#12	#12	3/4"		1.08		
7	REC BEDROOM 109	20/1	#12	#12	#12	3/4"	1.08			8	REC BEDROOM 116	20/1	#12	#12	#12	3/4"	1.08			
9	REC BEDROOM 109	20/1	#12	#12	#12	3/4"				10	REC BEDROOM 118	20/1	#12	#12	#12	3/4"		1.08		
11	REC BEDROOM 111	20/1	#12	#12	#12	3/4"				12	REC BEDROOM 118	20/1	#12	#12	#12	3/4"		1.08		
13	REC BEDROOM 111	20/1	#12	#12	#12	3/4"				14	REC BEDROOM 120	20/1	#12	#12	#12	3/4"		1.08		
15	REC BEDROOM 113	20/1	#12	#12	#12	3/4"				16	REC BEDROOM 122	20/1	#12	#12	#12	3/4"		1.08		
17	REC BEDROOM 115	20/1	#12	#12	#12	3/4"				18	REC BEDROOM 124	20/1	#12	#12	#12	3/4"		1.08		
19	REC BEDROOM 117	20/1	#12	#12	#12	3/4"				20	REC BEDROOM 126	20/1	#12	#12	#12	3/4"		1.08		
21	REC BEDROOM 121	20/1	#12	#12	#12	3/4"				22	REC LOBBY 100	20/1	#12	#12	#12	3/4"		.72</		

