

DRAWING LIST

- E0.1 GENERAL NOTES
- E1.1 FLOOR PLANS - LIGHTING
- E3.1 FLOOR PLANS - FIRE ALARM
- E8.1 FLOOR PLANS - DEMO

DISTRIBUTION	
	NEW 208Y/120 PANELBOARD
	NEW 480Y/277 PANELBOARD
	HOMERUN TO PANELBOARD
	EQUIPMENT ON SAME CIRCUIT BUT SEPARATELY CONTROLLED
	CONDUIT CONCEALED IN WALL OR CEILING
	CONDUIT RUN UNDERFLOOR OR UNDERGROUND

EQUIPMENT	
	JUNCTION BOX
	JUNCTION BOX- WALL MOUNT
	DISCONNECT SWITCH - MOUNTED 5' ABOVE FINISHED FLOOR OR ON EQUIPMENT
	COMBINATION STARTER/DISCONNECT - 5' ABOVE FINISHED FLOOR OR ABOVE CEILING
	MOTOR
	MANUAL MOTOR STARTER
	TV OUTLET - MOUNT 18" AFF UNLESS NOTED OTHERWISE.
	MAIN DISTRIBUTION FRAME
	WALL MOUNTED CLOCK - MOUNTING HT. TO CENTER OF DEVICE AS SPECIFIED ON 'E3' SERIES DRAWINGS
	WALL MOUNTED PAGING HORN
	CEILING MOUNTED PAGING SPEAKER
	CEILING MOUNTED LOCAL SPEAKER
	SPEAKER/CLOCK COMBO

FIRE ALARM	
	FIRE ALARM PULL STATION - 42" ABOVE FINISHED FLOOR
	COMBINATION FIRE ALARM HORN W/ VISUAL UNIT (STROBE) - 80" - BOTTOM OF LENS, AFF ALL DEVICES MUST HAVE ADJUSTABLE CANDELA RATINGS
	COMBINATION FIRE ALARM HORN W/ VISUAL UNIT (STROBE) - CEILING MOUNTED ALL DEVICES MUST HAVE ADJUSTABLE CANDELA RATINGS
	VISUAL ONLY UNIT - 80" BOTTOM OF LENS, AFF ALL DEVICES MUST HAVE ADJUSTABLE CANDELA RATINGS
	VISUAL ONLY UNIT - CEILING MOUNTED ALL DEVICES MUST HAVE ADJUSTABLE CANDELA RATINGS
	MAGNETIC DOOR HOLD OPEN (24VAC) (FURNISHED BY OTHERS)
	SMOKE DETECTOR
	DUCT TYPE SMOKE DETECTOR - FURNISH AND INSTALLED BY MC, WIRED BY E.C.
	HEAT DETECTOR
	CARBON MONOXIDE DETECTOR

RECEPTACLES	
	DUPLEX RECEPTACLE - WALL MOUNTED
	QUADRUPLX RECEPTACLE - WALL MOUNTED
	DUPLEX RECEPTACLE - CEILING MOUNTED
	SPECIAL - SINGLE PHASE - WALL MOUNTED (SIZE AS INDICATED)
	SPECIAL - THREE PHASE - WALL MOUNTED (SIZE AS INDICATED)
	DATA OUTLET
	DATA OUTLET (NUMBER DENOTES QUANTITY OF DEVICES)
	COMBINATION TEL/DATA OUTLET (NUMBER DENOTES QUANTITY OF DATA DEVICES)
	TELEPHONE OUTLET, WALL HUNG
	DATA OUTLET, WALL MOUNTED; FOR OWNER PROVIDED WIRELESS SYSTEM
	DATA OUTLET, CEILING MOUNTED; FOR OWNER PROVIDED WIRELESS SYSTEM
	FLOOR BOX WITH DATA OUTLETS AND ELECTRICAL RECEPTACLES (NUMBER DENOTES QUANTITY OF DEVICES)
	MULTI-MEDIA INTERFACE: VGA W/ 3.5MM (AUDIO/VIDEO), HDMI, USB EXTENDER OUTLET
	PLUG LOAD CONTROLLER, WATTSTOPPER #MPL-201. DEVICE SHALL BE MOUNTED ABOVE CEILING. PROVIDE A 4"x4" JUNCTION BOX FOR DEVICE MOUNTING.

NOTES:
 1. DEVICES TO BE MOUNTED 18" ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE.
 2. A.C. = ABOVE COUNTERTOP APPROXIMATELY 42" ABOVE FINISHED FLOOR.
 3. GFI = GROUND FAULT INTERRUPTER

PHASING PLAN: DESIGN IS BASED UPON ARCHITECTURAL PHASING PLAN AND CIVIL PHASING PLAN. IF CONSTRUCTION PHASING PLAN DIFFERS FROM ARCHITECTURAL PHASING PLAN AND CIVIL PHASING PLAN, THEN CONTRACTOR SHALL MAINTAIN EXISTING EQUIPMENT THROUGH CONSTRUCTION AS REQUIRED AT NO ADDITIONAL COST TO OWNER.

LIGHTING CONTROL	
	SINGLE POLE LIGHT SWITCH - FLUSH MOUNTED
	THREE-WAY LIGHT SWITCH - FLUSH MOUNTED
	FOUR-WAY LIGHT SWITCH - FLUSH MOUNTED
	OCCUPANCY SENSOR - WALLSTATION, WATTSTOPPER #LMDW-100-W
	LOW-VOLTAGE 1-BUTTON WALLSTATION, WATTSTOPPER #LMSW-101-W (PROVIDE W/ ENGRAVING)
	LOW-VOLTAGE 3-BUTTON WALLSTATION, WATTSTOPPER #LMSW-103-W (PROVIDE W/ ENGRAVING)
	LOW-VOLTAGE 4-BUTTON WALLSTATION, WATTSTOPPER #LMSW-104-W (PROVIDE W/ ENGRAVING)
	LOW-VOLTAGE DIMMING WALLSTATION, WATTSTOPPER #LMDM-101-W (PROVIDE W/ ENGRAVING)
	DIGITAL PARTITION SWITCH, WATTSTOPPER #LMPS-104-W (PROVIDE WITH ENGRAVING)
	LOW-VOLTAGE VACANCY/OCCUPANCY SENSOR - DUAL TECHNOLOGY, CEILING MOUNTED WATTSTOPPER #LMDC-100 (REFER TO SEQUENCE OF OPERATIONS FOR VAC/OCC MODE)
	PHOTOSENSOR - SINGLE ZONE SWITCHING AND DIMMING, CLOSED LOOP WATTSTOPPER #LMLS-400
	ROOM CONTROLLER, 1-LOAD, 2-LOAD, OR 3-LOAD AS REQUIRED PER ROOM. DEVICE SHALL BE MOUNTED ABOVE CEILING. WATTSTOPPER #LMRC-220 FOR LED RETROFIT LUMINAIRES.
	EMERGENCY LIGHTING CONTROL UNIT. DEVICE SHALL BE MOUNTED ABOVE CEILING. WATTSTOPPER #ELU200
	NETWORK BRIDGE CONTROLLER (NOT SHOWN ON PLANS). PROVIDE (1) ONE PER ROOM. DEVICE SHALL BE MOUNTED ABOVE CEILING. WATTSTOPPER #LMBC-300
	PARTITION INTERFACE, WATTSTOPPER #LMI0-102. DEVICE SHALL BE MOUNTED ABOVE CEILING.
	ISOLATED RELAY INTERFACE, WATTSTOPPER #LMRL-100. DEVICE SHALL BE MOUNTED ABOVE CEILING. TIES INTO ROOM VAV BOXES. NOT SHOWN ON DRAWINGS.
	LOW-VOLTAGE WIRING PER MANUFACTURER'S RECOMMENDATIONS

GENERAL LIGHTING CONTROL NOTES:

- CONTRACTOR TO FIELD VERIFY NUMBER OF RELAYS REQUIRED PER CIRCUIT AND PROVIDE APPROPRIATE DEVICE.
- PROVIDE A 4"x4" JUNCTION BOX FOR DEVICE MOUNTING.
- PROVIDE A 4"x4" JUNCTION BOX IF DEVICE IS BEING MOUNTED WITHOUT THE ROOM CONTROLLER.
- DEVICE MOUNTING BRACKET SHALL BE ZIP TIED TO STRUCTURE.
- MOUNT SWITCHES AND WALLSTATIONS 48" AFF.
- REFER TO LIGHTING CONTROL SEQUENCE OF OPERATIONS ON 'E5' SERIES DRAWINGS FOR WALLSTATION ENGRAVING SCHEDULE.

GENERAL NOTES:

- VERIFY ALL CONDITIONS AND MEASUREMENTS ON SITE PRIOR TO THE INSTALLATION OF ANY EQUIPMENT.
- INSTALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND EQUIPMENT MANUFACTURER'S RECOMMENDED INSTRUCTIONS.
- CONTACT THE UTILITY COMPANIES PRIOR TO BEGINNING WORK.
- INSTALL FIRE ALARM SYSTEMS IN ACCORDANCE WITH NFPA 72.
- THE INTENT OF THE FIRE ALARM AUDIBLE DEVICES IS TO PROVIDE A SOUND LEVEL OF +15db OVER AMBIENT IN ALL OCCUPIED AREAS OF THE BUILDING. PROVIDE DEVICES IN A QUANTITY AND CAPACITY TO MEET THIS REQUIREMENT.
- INSTALL CONDUIT AND BOXES ABOVE SUSPENDED CEILING OR CONCEALED IN WALLS.
- WHERE NOTED ON THE DRAWINGS, INSTALL WIRE AND DEVICES IN SURFACE MOUNTED RACEWAY. EXTEND CONDUIT TO RACEWAY ENTRANCE.
- THE DRAWINGS DO NOT INDICATE PULL-SPICE BOXES. INSTALL BOXES TO MEET JOB CONDITIONS AND NEC REQUIREMENTS.
- FASTEN HORIZONTAL CONDUIT TO THE BUILDING PERMANENT STRUCTURE AT A SPACING NOT MORE THAN 7'-6". FASTEN EXPOSED CONDUIT ON MASONRY AT A SPACING NOT MORE THAN 5'-0". USE BEAM CLAMPS AND STUD ANCHORS. DO NOT USE FRICTION CLAMPS.
- INSTALL EXPANSION FITTINGS WITH BONDING JUMPERS WHERE CONDUITS PASS THROUGH EXPANSION OR CONTROL JOINTS.
- INSTALL AN INDEPENDENT GROUND WIRE FOR ALL FEEDERS AND SUBFEEDERS SHOWN ON THE ONE-LINE DIAGRAM. INSTALL AN INDEPENDENT GROUND IN ALL CONDUITS, WHETHER INDICATED OR NOT ON THE DRAWINGS. SIZE WIRE PER NEC REQUIREMENTS.
- GROUND ALL ELECTRICAL EQUIPMENT PER THE NATIONAL ELECTRICAL CODE. DO NOT EXCEED 10 OHMS.
- COORDINATE THE INSTALLATION OF LIGHTING FIXTURES, RECEPTACLES, DISCONNECT SWITCHES, AND SWITCHES WITH THE INSTALLATION OF OTHER EQUIPMENT.
- THE LOCATION OF SWITCHES, BOXES, AND CONDUITS PROVIDING POWER TO EQUIPMENT SHOWN ON THE DRAWINGS IS APPROXIMATE. COORDINATE FINAL LOCATION OF ELECTRICAL DEVICES WITH THE INSTALLATION OF OTHER EQUIPMENT. DO NOT MOUNT ELECTRICAL DEVICES TO INTERFERE WITH EQUIPMENT ACCESS.
- WHEREVER THE INSTALLATION OF ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS IS IMPRACTICAL DUE TO LOCAL INTERFERENCE OR OTHER REASONS, CONTACT THE ENGINEER AND INSTALL THE EQUIPMENT AT NEW LOCATIONS AS DIRECTED.
- SIZE CONDUITS IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE BUT NOT LESS THAN 3/4". WHERE FIXTURES ARE SUPPORTED FROM CONDUIT, THE MINIMUM SIZE SHALL BE 1".
- MOUNT PANELBOARDS WITH TOP OF ENCLOSURE AT 6'-0" ABOVE FINISHED FLOOR.
- PROVIDE ALL PANELBOARDS WITH SOLID NEUTRAL AND EQUIPMENT GROUND BUS.
- COORDINATE CABLE LENGTH AND VOLTAGE DROP LIMITATIONS FOR ALL SYSTEMS AND MAKE ANY ADJUSTMENTS NECESSARY, INCLUDING, BUT NOT LIMITED TO, WIRE AND CONDUIT SIZE INCREASE AND/OR ADDING EQUIPMENT TO MAKE A COMPLETE AND OPERABLE SYSTEM AND TO MEET REFERENCED CODE AND STANDARDS REQUIREMENTS. THIS SHALL BE DONE AT NO ADDITIONAL COST.
- THE E.C. IS RESPONSIBLE FOR PHASING WORK ACCORDING TO THE ARCHITECTURAL PHASING PLAN. COORDINATE WITH THE G.C. AND ALL DISCIPLINES.
- INSTALL PLENUM RATED CABLE FOR ALL SYSTEMS INCLUDING FIRE ALARM, SOUND, TELEPHONE, DATA, CLOAK, ETC.
- THE OWNER WILL RETAIN SALVAGE RIGHTS TO ALL LIGHT FIXTURES PRIOR TO DISPOSAL BY THE CONTRACTOR.
- FURNISH AND INSTALL J-HOOKS 4'-0" ON CENTER OR OTHER APPROPRIATE SUPPORT SYSTEM FOR ALL SYSTEMS CABLES NOT INSTALLED IN CONDUIT.
- ALL EXISTING OR NEW EXPOSED CONDUIT SHALL BE PAINTED THE SAME COLOR OF THE CEILING OR WALL. COORDINATE WITH THE ARCHITECTURAL PLANS FOR PROPER PAINT COLORS NEEDED.
- MEASURE STEADY STATE LOAD CURRENTS AT EACH PANELBOARD FEEDER; RE-ARRANGE CIRCUITS IN THE PANELBOARD TO BALANCE THE PHASE LOADS TO WITHIN 5 PERCENT OF EACH OTHER. MAINTAIN PROPER PHASING FOR MULTI-WIRE BRANCH CIRCUITS.
- CUT OPENINGS IN FLOORS, WALLS, ROOFS, AND CEILINGS REQUIRED FOR INSTALLATION OF ELECTRICAL EQUIPMENT, WIRING, CONDUIT, ETC. PATCH AND REPAIR ANY EXISTING FLOORS, WALLS, ROOF, AND CEILING OPENINGS LEFT BY REMOVAL OR INSTALLATION OF ELECTRICAL EQUIPMENT, WIRING, CONDUIT, ETC. PATCHING SHALL MATCH THE EXISTING ADJACENT SUBSTRATE.
- THE FOLLOWING INSTALLATION STANDARDS SHALL BE FOLLOWED ON ALL WALL MOUNTED DEVICES, UNLESS NOTED OTHERWISE: (A) EXISTING MASONRY WALLS: SURFACE MOUNTED RACEWAY. RUN FEED FROM CEILING IN RACEWAY; (B) EXISTING STUD WALLS: FLUSH MOUNTED WALL DEVICES, CUT WALL AND FISH AS REQUIRED; (C) NEW WALLS: FLUSH MOUNTED WALL DEVICES.
- FIRE ALARM CABLING ABOVE RECESSED CEILINGS AND IN INACCESSIBLE LOCATIONS MAY BE ROUTED EXPOSED. ALL OTHER AREAS SHALL HAVE CABLE IN CONDUIT.
- THE CONTRACTOR IS RESPONSIBLE FOR HANGING ALL CONDUITS, LIGHT FIXTURES, AND OPEN AIR SYSTEMS CABLES LOCATED ABOVE THE EXISTING ACCESSIBLE CEILING SYSTEMS TO THE EXISTING STRUCTURE TO FACILITATE THE CEILING REMOVAL. THE CONTRACTOR IS ALSO RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF THIS CABLING AND ALL ASSOCIATED EXISTING SYSTEM FUNCTIONS UNTIL SUCH A TIME THAT PHASING AND NEW SYSTEM INSTALLATION ALLOWS FOR REMOVAL.
- INCLUDE THE FOLLOWING ADDITIONAL EQUIPMENT AND DEVICES IN THE BASE BID FOR INSTALLATION AS DIRECTED BY THE AUTHORITY HAVING JURISDICTION REVIEW: (5) UNIVERSAL EXIT SIGNS, (5) COMBINATION FIRE ALARM HORN/STROBES, (5) FIRE ALARM SMOKE DETECTORS.

GENERAL LIGHTING FIXTURE NOTES:

- COORDINATE MOUNTING HEIGHTS WITH 'A' SERIES DRAWINGS PRIOR TO INSTALLATION.
- VERIFY ALL CEILING TYPES SHOWN ON THE 'A' SERIES DRAWINGS AND PROVIDE ALL NECESSARY MOUNTING ACCESSORIES.
- EXIT SIGNS SHALL BE CEILING, WALL, OR END MOUNTED. FIELD COORDINATE FINAL MOUNTING REQUIREMENTS.
- EXIT SIGNS SHALL HAVE DIRECTIONAL CHEVRONS AS REQUIRED. FIELD COORDINATE FINAL CHEVRON CONFIGURATION.
- PROVIDE FIXTURES WITH DLC LISTING OR ENERGY STAR.
- PROVIDE APPROPRIATE CABLE LENGTH FOR ALL PENDANT MOUNTED FIXTURES. REFER TO 'A' SERIES FLOOR PLANS, SECTIONS, AND INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION. WHEN MOUNTING HEIGHT OF ANY LIGHT FIXTURES IS NOT CLEARLY STATED OR SHOWN ON DRAWINGS, CONTACT ENGINEER FOR APPROPRIATE LENGTH PRIOR TO INSTALLATION.

ABBREVIATIONS:

A	AMP	AMPERE
AC	ABOVE COUNTER	
AF	ABOVE FINISHED FLOOR	
AFG	ABOVE FINISHED GRADE	
AHU	AIR HANDLING UNIT	
ALT	ALTERNATE	
APP	AREA PROTECTION PANEL	
ATC	AUTOMATIC TEMPERATURE CONTROL	
ATS	AUTOMATIC TRANSFER SWITCH	
BFF	BELOW FINISHED FLOOR	
BFG	BELOW FINISHED GRADE	
C	CONDUIT	
CU	CONDENSING UNIT	
CUH	CABINET UNIT HEATER	
DM	DIAMETER	
DM	DIGITAL METER	
DWG	DRAWING	
E.C.	ELECTRICAL CONTRACTOR	
EF	EXHAUST FAN	
ELEC	ELECTRICAL	
ELEV	ELEVATION	
EP	EXPLOSION PROOF	
EX	EXISTING BACK BOX TO REMAIN	
ETR	EXISTING TO REMAIN	
EXR	EXISTING DEVICE TO BE RELOCATED	
FC	FAN COIL UNIT	
FLA	FULL LOAD AMPERES	
G, GND, GRD	GROUND	
G.C.	GENERAL CONTRACTOR	
H.C.	HEATING CONTRACTOR	
HD	HIGH INTENSITY DISCHARGE	
HP	HORSE POWER	
HVAC	HEATING, VENTILATION & AIR CONDITIONING	
KCMIL	THOUSAND CIRCULAR MILS	
KVA	KILOVOLT AMPERES	
KW	KILOWATT	
M.C.	MECHANICAL CONTRACTOR	
MNTD	MOUNTED	
NEC	NATIONAL ELECTRIC CODE	
NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION	
OHF	OVERHEAD FIBER	
P.C.	PLUMBING CONTRACTOR	
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR	
TYP	TYPICAL	
UH	UNIT HEATER	
UF	UNDERGROUND FIBER	
V	VOLTS	
WG	WIRE GUARD	
WP	WEATHERPROOF	

THE SYMBOLS AND ABBREVIATIONS SHOWN ARE STANDARDS AND DO NOT NECESSARILY APPEAR ON THE DRAWINGS.

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	MODEL NO.	DESCRIPTION	LAMP	WATTAGE	VOLTAGE	MOUNTING	REMARKS
E1	LITHONIA	EU2-LED-M12	DUAL HEAD EMERGENCY BATTERY FIXTURE	LED	2 W	MVOLT	WALL	PROVIDE WITH UL924 COMPLIANT BATTERY
E2	LITHONIA	LHQM-LED-R-HO	DUAL HEAD COMBINATION EXIT AND EMERGENCY BATTERY FIXTURE	LED	10 W	MVOLT	UNIVERSAL	PROVIDE WITH UL924 COMPLIANT BATTERY
E3	LITHONIA	ELA-T-QWP-L0309	WEATHERPROOF DUAL HEAD REMOTE LAMP	LED	2 W	9.6V	WALL	FED FROM FIXTURE E2 BATTERY PACK
OA	RAB LIGHTING	VXBRL026NDGPCS	WALL MOUNT VAPORTIGHT LED FIXTURE	LED	26 W	120V	WALL	PROVIDE WITH INTEGRAL PHOTOCCELL
RA	LITHONIA	203TL-4-40L-E2L-LP840	2X4 LENSED TROFFER	LED	31 W	MVOLT	RECESSED	CONTROL HOUSE RECESSED
SA	LITHONIA	FEML48-4000LM-LPFL-MD-MVOLT-G210-40K-80CRI	4' GASKETED AND LENSED SURFACE FIXTURE	LED	31 W	MVOLT	WALL	CONTROL HOUSE SURFACE
SB	LITHONIA	FEML48-4000LM-LPFL-MD-MVOLT-G210-40K-80CRI	4' GASKETED AND LENSED SURFACE FIXTURE	LED	31 W	MVOLT	SURFACE	TOILET ROOM
SC	LITHONIA	FEML48-6000LM-LPFL-MD-MVOLT-G210-40K-80CRI-MHCH96	4' GASKETED AND LENSED SUSPENDED FIXTURE	LED	44 W	MVOLT	SUSPENDED	PROVIDE WITH CHAIN SUSPENSION KIT

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RENOVATIONS TO
 CAPE FEAR RIVER MEMORIAL LIFT BRIDGE
 NORTH CAROLINA DEPT. OF TRANSPORTATION



GENERAL NOTES

PILOT SCALE:
 1/2" = 1'-0"
 FILENAME:
 ELEC1.dwg
 DATE:
 DECEMBER 20, 2017

PROJECT
 15BPP.15

E0.1



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