ELECTRICAL SPECIFICATIONS

GENERAL

1. ALL ELECTRICAL WORK SHALL IN PERFORMED IN ACCORDANCE TO RULES, REGULATIONS, STANDARDS, CODES, ORDINANCES, AND LAWS OF LOCAL, STATE, AND FEDERAL GOVERNMENTS, AND OTHER AUTHORITIES HAVING JURISDICTION.
2. MATERIALS AND EQUIPMENT SHALL BE MANUFACTURED, INSTALLED, AND TESTED AS SPECIFIED IN LATEST EDITIONS OF PUBLICATIONS, STANDARDS, RULINGS, AND CODES. ALL MATERIAL AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL), AND APPROVED FOR INTENDED SERVICE.
3. PROVIDE SUBMITTALS, INCLUDING PRODUCT DATA AND WIRING DIAGRAMS, FOR ALL SECTIONS LISTED BELOW.
4. THE INTENTION OF THESE CONTRACT DOCUMENT IS TO CALL FOR FINISHED WORK, FULLY TESTED, AND READY OF OPERATION. ANY COMPONENTS OR LABOR NOT SHOWN ON DRAWINGS BUT REQUIRED FOR FUNCTIONING SYSTEM SHALL BE PROVIDED.
5. THE LISTING OF ELECTRICAL DRAWINGS DOES NOT LIMIT RESPONSIBILITY OF DETERMINING THE FULL EXTENT OF WORK REQUIRED BY CONTRACT DOCUMENTS. THE ELECTRICAL CONTRACTOR SHALL REFER TO ARCHITECTURAL, PLUMBING, HVAC, STRUCTURAL, AND OTHER DRAWINGS AND SECTIONS THAT INDICATE TYPES OF CONSTRUCTION WITH WHICH WORK MUST BE COORDINATED. ELECTRICAL CONTRACTOR SHALL CHECK WITH THE GENERAL CONTRACTOR AND OTHER TRADES TO DETERMINE WHETHER THERE WILL BE ANY INTERFERENCE BY SUCH TRADES WITH THE ELECTRICAL WORK. IF THE ELECTRICAL CONTRACTOR FAILS TO CHECK WITH THE GENERAL CONTRACTOR AND THE ELECTRICAL WORK IS LATER FOUND TO INTERFERE WITH OTHER WORK, THE ELECTRICAL CONTRACTOR SHALL MAKE NECESSARY CHANGES, WITHOUT ADDITIONAL COST TO THE OWNER, TO ELIMINATE SUCH INTERFERENCE.
6. WHEN REQUIREMENTS CITED IN THIS PARAGRAPH CONFLICT WITH EACH OTHER OR WITH CONTRACT DOCUMENTS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN CONDUCT OF WORK.

LOW VOLTAGE CONDUCTORS

1. ALL CONDUCTOR INSULATION SHALL B E RATED 600V.
2. MOTOR BRANCH CIRCUITS SHALL BE TYPE XHHW-2 IN A METALLIC RACEWAY. CONDUCTOR SHALL BE STRANDED WITH A MINIMUM SIZE #14 AWG.
3. ALL LIGHTING AND CONVENIENCE RECEPTACLE BRANCH CIRCUITS SHALL BE TYPE THHN/THWN IN METALLIC RACEWAY OR TYPE MC CABLE, AS ALLOWED BY CODE. BRANCH CIRCUIT WIRING SHALL BE SOLD OR STRANDED, MINIMUM SIZE #12 AWG.
4. CONTROL WIRING SHALL BE THHN/THWN IN METALLIC RACEWAY. CONDUCTOR SHALL BE STRANDED WITH A MINIMUM SIZE #14 AWG.

GROUNDING AND BONDING

1. ALL PRODUCTS SHALL BE UL 467 LISTED.
2. BARE GROUNDING CONDUCTOR SHALL BE SOFT DRAWN STRANDED COPPER, SIZED IN ACCORDANCE WITH NEC ARTICLE 250, UNLESS OTHER NOTED ON DRAWINGS.
3. INSULATED GROUNDING CONDUCTOR SHALL BE STRANDED COPPER WITH TYPE TW, THW, OR THHN/THWN INSULATION COLORED GREEN.
4. A SEPARATE INSULATED GREEN COPPER CONDUCTOR SHALL BE INSTALLED AS AN EQUIPMENT GROUNDING CONDUCTOR IN ALL RACEWAY AND WITH EVERY BRANCH CIRCUIT AND CONTROL CIRCUIT. THIS SHALL BE IN ADDITION TO THE GROUNDED METALLIC CONDUIT SYSTEM.
5. ALL CONNECTIONS TO BUILDING STEEL SHALL BE EXOTHERMIC WELD. CONNECTIONS TO EQUIPMENT GROUND BUSSES OR PADS SHALL BE COMPRESSIONS TYPE LUGS, BOLTED TO THE BUS OR PAD.

RACEWAYS AND BOXES

1. INDOORS: APPLY RACEWAY PRODUCTS AS SPECIFIED BELOW UNLESS NOTED OTHERWISE ON DRAWINGS:
   - 1.1. EXPOSED, NOT SUBJECT TO PHYSICAL DAMAGE: EMT.
   - 1.2. CONCEALED IN CEILINGS AND INTERIOR WALLS AND PARTITIONS: TYPE HCF MC CABLE.
   - 1.3. CONNECTION TO VIBRATING EQUIPMENT: FMC, EXCEPT USE LFMC IN DAMP OR WET LOCATIONS.
   - 1.4. BOXES AND ENCLOSURES: NEMA 250, TYPE 1.
2. MINIMUM RACEWAY SIZE: 3/4"-TRADE SIZE
3. RACEWAY FITTINGS: COMPATIBLE WITH RACEWAYS AND SUITABLE FOR USE AND LOCATION.
   - 3.1. EMT: USE SETSCREW OR COMPRESSIONS, STEEL FITTINGS. COMPLY WITH NEMA FB2.10.
   - 3.2. FLEXIBLE CONDUIT: USE ONLY FITTINGS LISTED FOR USE WITH FLEXIBLE CONDUIT. COMPLY WITH NEMA FB 2.20.

CONDUCTOR TERMINATIONS

1. SPLICES AND TAPS IN LIGHTING AND BRANCH CIRCUIT WIRING SHALL BE 3M SCOTCHLOK SPRING CONNECTIONS OR EQUAL.
2. TERMINATL LUGS, CONNECTORS, AND SPLICES SHALL BE TIN PLATED, HIGH CONDUCTIVITY COPPER COMPRESSION TYPE. THEY SHALL HAVE CHAMFERED BARRELS AND BE PERMANENTLY IDENTIFIED WITH CONDUCTOR SIZES.
3. SPLICES SHALL BE LONG BARREL BUTT TYPE WITH A CENTER STOP IN THE SPLICE BARREL.
4. FOR NON-JACKETED METAL CLAD CABLE IN DRY LOCATIONS, CABLE TERMINATIONS SHALL BE OZ GEDNEY TYPE PK FOR USE WITH GALVANIZED STEEL ARMOR OR TYPE PK-A FOR USE WITH ALUMINUM ARMOR. CABLE TERMINATIONS SHALL BE PROVIDED WITH LOCKNUTS AND BUSHINGS.

IDENTIFICATION

1. ALL POWER WIRING CONDUCTORS SHALL BE COLOR CODED AS FOLLOWS:

PHASE	208Y/120V	480Y/277V
PHASE A	BLACK	BROWN
PHASE B	RED	ORANGE
PHASE C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
GROUND	GREEN	GREEN

2. ALL PANELBOARDS WITH LOADS MODIFIED BY THIS PROJECT SHALL BE PROVIDED WITH REVISED, TYPEWRITTEN PANELBOARD DIRECTORIES.
3. ALL JUNCTION BOXES SHALL BE LABELED WITH CIRCUIT INFORMATION.

LIGHTING CONTROL DEVICES

1. VACANCY SENSORS SHALL DUAL-TECHNOLOGY (PIR AND ULTRASONIC) TYPE WITH MANUAL ON/AUTOMATIC OFF OPERATION.
   - 1.1. DETECTION COVERAGE: DETECT OCCUPANCY WITHIN A 180-DEGREE PATTERN CENTERED ON THE SENSOR OVER AN AREA OF 900 SQUARE FEET.
   - 1.2. ADAPTIVE TECHNOLOGY: SENSOR SHALL HAVE SELF-ADJUSTING CIRCUITRY TO DETECT AND MEMORIZES USAGE PATTERNS OF THE SPACE TO HELP ELIMINATE FALSE "OFF" SWITCHING.
   - 1.3. WHERE INDICATED ON THE DRAWINGS, 0-10V DIMMING SHALL BE PROVIDED INTEGRAL TO VACANCY SENSOR. BASIS OF DESIGN SHALL BE WATTSTOPPER, CAT. NO. DW-311.

WIRING DEVICES

1. RECEPTACLES SHALL BE SPECIFICATION GRADE, 125V, 20A RATED DUPLEX RECEPTACLE. RECEPTACLE SHALL COMPLY WITH NEMA WD 6, CONFIGURATION 5-20R.
2. SPECIFICATION GRADE, GFCI RECEPTACLES SHALL BE INSTALLED WITHIN 6 FEET OF ANY WATER SOURCE. GFCI RECEPTACLES SHALL BE SELF-TESTING TYPE.
3. WIRING DEVICE COLOR SHALL COORDINATED WITH OWNER AND ARCHITECT.

INTERIOR LIGHTING

1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE LIGHT FIXTURES AS SPECIFIED IN LIGHT FIXTURE SCHEDULE ON SHEET E-601 OR COMPARABLE PRODUCT BY ANOTHER MANUFACTURER.
2. LIGHT FIXTURES SHALL BE PROVIDED WITH HOUSINGS, TRIMS, DRIVERS, REFLECTORS, WIRING, AND ALL OTHER COMPONENTS REQUIRED FOR A COMPLETE INSTALLATION.
3. LED FIXUTRES
   - 3.1. LEDS INSTALLED WITHIN SAME FIXTURE SHALL COLOR MATCHED UTILIZING A 3-STEP MACADAM ELLIPSE STANDARD OR BETTER.
   - 3.2. PROVIDE KELVIN COLOR TEMPERATURE AS SPECIFIED IN THE FIXTURE SCHEDULE. IF FIXTURE CATALOG NUMBER DOES NOT SPECIFY, STANDARD COLOR TEMPERATURE SHALL BE 3500K.
4. LED DRIVERS: PROVIDE LOW ENERGY SOLID STATE DRIVERS WITH THE FOLLOWING FEATURES:
   - 4.1. UL CLASS 2 RATED
   - 4.2. SURGE PROTECTION FROM AC LINE SIDE SURGES
   - 4.3. AC LINE ISOLATION
   - 4.4. CONSTANT CURRENT DRIVERS BASED ON THE FIXTURES LISTED IN THE SCHEDULE.
   - 4.5. ANALOG (0-10V) DIMMING.
   - 4.6. MODULE TEMPERATURE PROTECTION.
5. COORDINATE LIGHT FIXTURE INSTALLATION WITH OTHER TRADES. ALL LIGHTING SHALL BE COORDINATED WITH MECHANICAL PIPING AND DUCTWORK TO ALLOW FOR PROPER CLEARANCE.
6. LUMINAIRES INSTALLED IN SUSPENDED CEILING SHALL BE INDEPENDENTLY SUPPORTED, DIRECTLY FROM BUILDING STRUCTURE. EACH LUMINAIRE SHALL BE SUPPORTED AT EACH END.

GENERAL COMMUNICATIONS

1. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL CABLE TRAY, HORIZONTAL AND BACKBONE CABLING, ASSOCIATED HARDWARE AND DEVICES, TERMINATIONS, GROUNDING AND BONDING MATERIALS, ETC AS NOTED ON DRAWINGS, IN SPECIFICATIONS, OR AS NEEDED FOR COMPLETE SYSTEM INSTALLATION.
2. CONTRACTOR SHALL TEST ALL COMPONENTS OF INSTALLATION SYSTEM TO ENSURE COMPLIANCE WITH TRANSMISSION STANDARDS OF TIA-568-C.2.
3. ENSURE PROPER SEPARATION OF ALL TELECOMMUNICATION CABLES FROM EMI SOURCES. REQUIRED SEPARATION DISTANCES SHALL BE IN COMPLIANCE WITH RECOMMENDATIONS IN BICSI'S "TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL" AND TIA-569-D.

COMMUNICATION GROUNDING AND BONDING

1. EACH DATA CLOSET SHALL BE PROVIDE WITH TELECOMMUNICATION GROUNDING BUSBAR. BUSBAR SHALL BE PREDRILLED RECTANGULAR COPPER BAR, 1/4 BY 2 INCHES IN CROSS SECTION. THE BUSBAR SHALL BE FOR WALL MOUNTING, SHALL BE NRTL LISTED AS COMPLYING WITH UL 467, AND SHALL COMPLY WITH TIA-607-B.
   - 1.1. PROVIDE STAND-OFF BRACKETS THAT PROVIDE AT LEAST A 2-INCH CLEARANCE TO ACCESS THE REAR OF THE BUSBAR. BRACKETS AND ASSOCIATED BOLTS SHALL BE STAINLESS STEEL.
2. ALL CONNECTIONS SHALL BE IRREVERSIBLE AND LISTED FOR THE PURPOSE.
3. BONDING CONDUCTORS BETWEEN THE TGB AND STRUCTURAL STEEL SHALL NO SMALLER THAN NO. 6 AWG.
4. ALL GROUNDING AND BONDING CONNECTIONS SHALL BE MADE IN COMPLIANCE WITH NEC, NECA 1, AND TIA 607-B.
5. ONCE GROUNDING AND BONDING SYSTEM HAS BEEN INSTALLED, TEST THE BONDING CONNECTIONS OF THE SYSTEM AND GROUND LOOP CURRENTS. IF THE RESISTANCE TO GROUND AT THE BCT (BONDING CONDUCTOR FOR TELECOMMUNICATIONS) EXCEEDS 5 OHMS, NOTIFY ENGINEER PROMPTLY AND INCLUDE RECOMMENDATIONS TO REDUCE GROUND RESISTANCE.

CABLE TRAYS

1. CABLE TRAY FOR DATA CLOSETS SHALL BE LADDER STYLE WITH TWO LONGITUDINAL SIDE RAILS AND TRANSVERSE RUNGS. CABLE TRAY SHALL HAVE THE FOLLOWING PROPERTIES:
   - 1.1. WIDTH: 12 INCHES.
   - 1.2. MINIMUM USEABLE LOAD DEPTH: 3 INCHES.
   - 1.3. RUNG SPACING: 9 INCHES, ON CENTER.
   - 1.4. CLASS DESIGNATION: NEMA VE1, CLASS 8C.
2. BASIS OF DESIGN: PROVIDE COOPER B-LINE, CAT. NO SB13AL12FB AND ALL ASSOCIATED SUPPORT KITS. EQUAL PRODUCT BY ANOTHER MANUFACTURER MAY ALSO BE CONSIDERED.
3. PROVIDE ALL NECESSARY TEES, CROSSES, RISERS, ELBOWS, CABLE TRAY SUPPORTS AND CONNECTORS, INCLUDING BONDING JUMPERS, AND OTHER FITTINGS REQUIRED FOR INSTALLATION AS SHOWN ON DRAWINGS, INDICATED IN SPECIFICATIONS AND/OR AS RECOMMENDED BY MANUFACTURER.
4. CABLE TRAY SHALL BE GROUNDED IN ACCORDANCE WITH NFPA 70 (NEC) AND BONDING SHALL BE COMPLETED IN ACCORDANCE TO ANSI/NECA/BICSI-607.
5. ALL PENETRATIONS OF CABLE TRAY THROUGH FIRE AND SMOKE BARRIERS SHALL BE SEALED, COMPLYING WITH ARCHITECTURAL SPECIFICATIONS. ENSURE ALL FIRESTOPPING METHODS ARE UL LISTED FOR INTENDED APPLICATIONS.
6. INSTALL CABLE TRAYS AS A COMPLETE SYSTEM, INCLUDING FASTENERS, HOLD-DOWN CLIPS, SUPPORT SYSTEMS, BARRIER STRIPS, ADJUSTABLE HORIZONTAL AND VERTICAL SPLICE PLATES, ELBOWS, REDUCERS, TEES, CROSSES, CABLE DROPOUTS, ADAPTERS, COVERS, AND BONDING.

OPTICAL FIBER BACKBONE CABLING

1. REFER TO TELECOMMUNICATION RISER DIAGRAM FOR ADDITIONAL CABLING INFORMATION.
2. BACKBONE CABLING SYSTEM SHALL COMPLY WITH TRANSMISSION STANDARD IN TIA-568-C.1.
3. PROVIDE OPTICAL FIBER BACKBONE CABLING WITH THE FOLLOWING PROPERTIES:
   - 3.1. DESCRIPTION: 50/125-MICROMETER, NON-CONDUCTIVE, TIGHT BUFFER OPTICAL FIBER CABLE (OM3)
   - 3.2. STRAND COUNT: 12 STRANDS
   - 3.3. MAXIMUM ATTENUATION: 3.50 DB/KM @ 850NM; 1.5DB/KM @ 1300NM.
   - 3.4. MINIMUM OVERFILLED MODAL BANDWIDTH-LENGTH PRODUCT: 1500 MHZ-KM @ 850NM; 500 MHZ-KM @ 1300NM.
   - 3.5. MINIMUM EFFECTIVE MODEL BANDWIDTH-LENGTH PRODUCT: 2000 MHZ-KM @ 850NM.
   - 3.6. JACKET COLOR: AQUA.
   - 3.7. PLENUM RATED; LISTED AND LABELED BY NRTL AS COMPLYING WITH UL 444, UL 1651, AND NFPA 70.
4. OPTICAL FIBER HARDWARE
   - 4.1. PROVIDE WALL MOUNTED INTERCONNECT CENTER EQUAL TO SIEMONS, CAT NO SWIC3 FOR FIBER BACKBONE TERMINATIONS IN EACH OF THE DATA CLOSETS.
     - 4.1.1. NUMBER OF CONNECTORS PER FIELD: ONE FOR EACH FIBER OF CABLE ASSIGNED TO THE FIELD, PLUS 25% SPARES.
   - 4.2. CONNECTOR TYPE: TYPE LC, COMPLYING WITH TIA-604-10-B.
   - 4.3. ALL OPTICAL FIBER HARDWARE SHALL COMPLY WITH FIBER OPTIC CONNECTOR INTERMATEABILITY STANDARD (FOCIS) SPECIFICATIONS OF THE TIA-640 SERIES AND WITH TIA-568-C.3.
5. COMPLY WITH TIA-607-B FOR BACKBONE GROUNDING REQUIREMENTS.
6. COMPLY WITH TIA-606-B AND UL 969 FOR BACKBONE LABELING REQUIREMENTS. COORDINATE ADMINISTRATION LABELS WITH OWNER.
7. FACTORY TEST MULTIMODE OPTICAL FIBER CABLES ACCORDING TO TIA-526-14-B AND TIA-568-C.3.
8. INSTALLATION OF OPTICAL FIBER BACKBONE SHALL COMPLY WITH NECA 1, NECA 301, NECA/BICSI 568, TIA-568-C.1, AND TIA-568-C.3. INSTALLATION SHALL ALSO COMPLY WITH BICSI ITSIMM, CH. 6, "CABLE TERMINATION PRACTICES."

COPPER HORIZONTAL CABLING

1. REFER TO TELECOMMUNICATION RISER DIAGRAM FOR ADDITIONAL CABLING INFORMATION.
2. HORIZONTAL CABLING SYSTEM SHALL COMPLY WITH TRANSMISSION STANDARD IN TIA-568-C.1.
3. PROVIDE COPPER HORIZONTAL CABLING WITH THE FOLLOWING PROPERTIES:
   - 3.1. DESCRIPTION: CATEGORY 6 - FOUR-PAIR, BALANCED TWISTED PAIR CABLE, CERTIFIED TO MEET TRANSMISSION CHARACTERISTICS OF CATEGORY 6 CABLES AT FREQUENCIES UP TO 250MHZ.
   - 3.2. CONDUCTOR: 100-OHM, 23 AWG SOLID COPPER.
   - 3.3. SHIELDING/SCREENING: UNSHIELDED TWISTED PAIR (UTP)
   - 3.4. JACKET COLOR: GREEN
   - 3.5. ROHS COMPLIANT.
   - 3.6. PLENUM RATED; LISTED AND LABELED BY NRTL AS COMPLYING WITH UL 444, UL 1651, AND NFPA 70.
4. TWISTED PAIR CABLE HARDWARE
   - 4.1. PROVIDE 19" RACK-MOUNTED, 48-PORT, CATEGORY 6 PATCH PANELS. PANELS SHALL BE MODULAR TYPE, HOUSING NUMBERED JACK UNITS WITH IDC-TYPE CONNECTORS AT EACH JACK LOCATION FOR PERMANENT TERMINATION OF PAIR GROUPS OF INSTALLED CABLES.
     - 4.1.1. NUMBER OF CONNECTORS PER FIELD: ONE FOR EACH FOUR-PAIR CABLE INDICATED, PLUS 25% SPARES.
   - 4.2. JACKS: FEMALE, EIGHT POSITION; FIXED TELECOMMUNICATIONS CONNECTOR DESIGNED FOR TERMINATION OF A SINGLE FOUR-PAIR, 100-OHM, UNSHIELDED OR SHIELDED TWISTED PAIR CABLE, COMPLYING WITH TIA-568-C.2.
5. TELECOMMUNICATION OUTLETS:
   - 5.1. JACKS: 100-OHM, BALANCED, TWISTED-PAIR CONNECTOR; FOUR-PAIR, EIGHT-POSITION MODULAR, COMPLYING WITH TIA/EIA-568-B.1.
6. WIRELESS ACCESS POINTS: PROVIDE TWO DATA JACKS TO EACH LOCATION NOTED ON THE DRAWINGS.
7. COMPLY WITH TIA-607-B FOR HORIZONTAL CABLE GROUNDING REQUIREMENTS.
8. COMPLY WITH TIA-606-B AND UL 969 FOR BACKBONE LABELING REQUIREMENTS. COORDINATE ADMINISTRATION LABELS WITH OWNER.
9. FACTORY TEST TWISTED PAIR CABLES ACCORDING TO TIA-568-C.2.
10. INSTALLATION OF OPTICAL FIBER BACKBONE SHALL COMPLY WITH NECA 1, NECA/BICSI 568, TIA-568-C.0, TIA-568-C.1, AND TIA-568-C.2. INSTALLATION SHALL ALSO COMPLY WITH BICSI ITSIMM, CH. 5, "CABLE TERMINATION PRACTICES."

FIRE ALARM SYSTEM

1. FIRE ALARM CONTROL PANEL (NOTIFIER, MODEL NO. AFP-200) IS EXISTING TO REMAIN.
2. ALL NEW DEVICES SHALL BE COMPATIBLE WITH AND CONNECTED TO EXISTING FIRE ALARM SYSTEM. PROVIDE ALL NECESSARY COMPONENTS, WIRING, AND PROGRAMMING REQUIRED TO ENSURE FULLY FUNCTIONAL SYSTEM UPON COMPLETION OF PROJECT.
3. NEW NOTIFICATION DEVICES: INDIVIDUALLY ADDRESSABLE, CONNECTED TO A SIGNALING-LINE CIRCUIT, EQUIPPED FOR MOUNTING AS INDICATED, AND WITH SCREW TERMINALS FOR SYSTEM CONNECTIONS.
   - 3.1. NOTIFICATIONS UNITS SHALL BE HORN/STROBE, ELECTRIC-VIBRATING- POLARIZED TYPE WITH XENON STROBE LIGHTS, COMPLYING WITH UL 464 AND 1971. HORNS SHALL PRODUCE A SOUND PRESSURE LEVEL OF 90DBA, MEASURED 10 FEET FROM THE HORN. STROBES SHALL HAVE A LIGHT OUTPUT AS NOTED ON DRAWINGS.
   - 3.2. HORN/STROBE UNITS SHALL HAVE THE WORD "FIRE" ENGRAVED ON HOUSING IN MINIMUM 1-INCH-HIGH LETTERS.
   - 3.3. HORN/STROBE UNITS SHALL BE WHITE.
4. PROVIDE RECORD OF FIRE ALARM SYSTEM INSPECTION AND TESTING AS REQUIRED BY NFPA 72.

NO.	DATE	DESCRIPTION
0	02.13.18	ISSUED FOR CONSTRUCTION

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BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET
PORTLAND, MAINE

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ELECTRICAL SPECIFICATIONS

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