

# ELECTRICAL SPECIFICATIONS

ELECTRICAL NOTES	GENERAL REQUIREMENTS	GENERAL REQUIREMENTS	BASIC MATERIALS AND METHOD	GENERAL REQUIREMENTS	GENERAL REQUIREMENTS
<p>1. ALL STARTING DEVICES, MOTORS, MOTOR CONTROLLERS, FLOAT SWITCHES, ALARM DEVICES, REMOTE CONTROLS, ETC. SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL CONDUIT, WIRING, AND SAFETY SWITCHES AS REQUIRED IN ORDER TO MAKE EQUIPMENT OPERATIONAL.</p> <p>2. ALL EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED. ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL MEET N.E.C. STANDARDS AND BEAR THE UL LABEL.</p> <p>3. ANY EQUIPMENT WHICH IS SPECIFIED AS "EXISTING TO REMAIN" SHALL MEET THE REQUIREMENTS SPECIFIED FOR NEW EQUIPMENT. IF A DISCREPANCY EXISTS, THE CONTRACTOR SHALL NOTIFY TENANT AND ARCHITECT FOR PROPER COURSE OF ACTION.</p> <p>4. THE ELECTRICAL CONTRACTOR SHALL CLEARLY LABEL THE OUTSIDE OF ALL ELECTRICAL DISTRIBUTION EQUIPMENT IN A PERMANENT MANNER.</p> <p>5. ALL LIGHTING FIXTURES SHALL BE WIRED PER N.E.C.</p> <p>6. ALL WIRE SHALL BE SIZED NOT ONLY FOR LOAD CARRIED BUT ALSO FOR DISTANCE TRAVELLED. LIGHTING CIRCUITS AND CIRCUITS FOR RECEPTACLES SHALL NOT BE MIXED.</p> <p>7. INCLUDE ALL WORK AND CONNECTIONS REQUIRED TO MAKE SYSTEM COMPLETE AND OPERATIONAL. THE ELECTRICAL EQUIPMENT MAY INCLUDE BUT NOT LIMITED TO SIGNAGE, STARTING DEVICES, MOTOR CONTROLLERS, ALARM SYSTEMS, AND EXHAUST FANS.</p> <p>8. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION AND SCHEDULE FOR ALL TELEPHONE EQUIPMENT WITH THE TENANT. THE ELECTRICAL CONTRACTOR SHALL RUN ALL NECESSARY CONDUIT WITH PULL WIRES.</p> <p>9. ALL LIGHTING FIXTURES SHOWN ON LIGHTING PLAN SHALL BE COORDINATED WITH THE ARCHITECTURAL DRAWINGS, INCLUDING THE REFLECTED CEILING PLAN.</p> <p>10. NOT USED.</p> <p>11. THE CIRCUITS USED TO POWER THE CASH REGISTERS SHALL NOT BE USED FOR ANY OTHER PURPOSE. THE CIRCUITS SHALL NOT SHARE THE NEUTRAL OR GROUND WITH OTHER EQUIPMENT. SEPARATE POWER NEUTRAL AND INSULATED GROUND WIRE, MINIMUM SIZE #12 AWG SHALL BE RUN TO THE GROUND TERMINAL ISOLATED FROM NEUTRAL. DO NOT USE THE CONDUIT FOR GROUNDING AS THIS IS NOT ADEQUATE AT HIGH FREQUENCIES.</p> <p>12. THE CONTRACTOR MAY ELECT TO COMBINE (3) CIRCUITS IN ONE HOMERUN: I.E. (1) 'A' PHASE, (1) 'B' PHASE, (1) 'C' PHASE.</p> <p>13. NOT USED</p> <p>14. ALL HOME RUNS SHALL BE IN MINIMUM 3/4" CONDUIT.</p> <p>15. CIRCUIT NUMBERS ARE FOR REFERENCE ONLY. BREAKERS MAY BE ARRANGE AS NECESSARY TO ACCOMMODATE EXISTING EQUIPMENT THAT IS TO REMAIN.</p> <p>16. CONCEALED CONDUIT NOT BEING REUSED MAY BE ABANDONED. EXPOSED CONDUIT SHOWN FOR DEMOLITION SHALL BE REMOVED BACK TO ASSOCIATED PANELBOARD.</p> <p>17. CUT AND PATCH AS REQUIRED. TRENCH OR CORE BORE EXISTING FLOORS PER LANDLORD REQUIREMENTS. PAY LANDLORD'S ROOFING CONTRACTOR FOR ROOF PENETRATIONS REQUIRED BY THIS WORK.</p> <p>18. ORDER EQUIPMENT WITHIN 5 DAYS OF RECEIPT OF CONTRACT TO MAINTAIN SCHEDULE.</p> <p>19. DRAWINGS ARE DIAGRAMMATIC. VERIFY ALL DIMENSIONS AND LENGTHS, AND ADJUST EQUIPMENT AND RACEWAY LOCATIONS TO AVOID CONFLICTS WITH OTHER CONSTRUCTION.</p> <p>20. MAKE MINOR ADJUSTMENTS TO WORK WHERE REQUESTED BY TENANT, WHEN SUCH ADJUSTMENTS ARE NECESSARY FOR PROPER OPERATION AND WITHIN THE INTENT OF THE CONTRACT.</p> <p>21. NOTIFY THE ENGINEER OF ERRORS, DISCREPANCIES OR OMISSIONS BEFORE CONSTRUCTION OR FABRICATION OF AFFECTED WORK, OR FAILING SUCH NOTICE. BE RESPONSIBLE FOR CORRECTING THE SAME.</p> <p>22. CONCEAL RACEWAY IN FINISHED SPACES. ROUTE SQUARE WITH BUILDING LINES AND PROPERLY SUPPORT. DO NOT ATTACH TO OR PENETRATE HVAC DUCTS.</p> <p>23. BOXES, NEMA OSI IN INTERIOR DRY LOCATIONS, CAST WEATHERPROOF TYPE IN WET LOCATIONS.</p> <p>24. FLOOR BOXES: SURFACE, 4" SQUARE STEEL. INSTALL ON SIDE, CONCEALED BENEATH CASEWORK OR EQUIPMENT.</p>	<p>1. GENERAL CONDITIONS: BIDDERS SHALL EXAMINE ALL DRAWINGS AND READ ALL PARTS OF THE SPECIFICATIONS TO AVOID OMISSIONS, DUPLICATIONS, AND TO INSURE COMPLETE EXECUTION OF ALL WORK FOR ELECTRICAL.</p> <p>2. GENERAL: A. THE WORK UNDER THIS SECTION SHALL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT AND INCIDENTAL COSTS NECESSARY TO FURNISH AND INSTALL ALL ELECTRICAL WORK, EQUIPMENT, LAMPS, ETC., INDICATED ON THE DRAWINGS, AND AS SPECIFIED HEREIN. B. CONTRACTORS PROPOSING TO UNDERTAKE WORK UNDER THIS DIVISION SHALL VISIT THE SITE OF WORK AND FULLY INFORM THEMSELVES OF ALL CONDITIONS THAT EFFECT THE WORK AND COST THEREOF, AND EXAMINE THE DRAWINGS AND SPECIFICATIONS AS RELATED TO THE SITE CONDITIONS. C. TENDER OF PROPOSAL SHALL CONVEY FULL AGREEMENT TO THE ITEMS AND CONDITIONS INDICATED ON THE DRAWINGS. SHOULD THE CONTRACTOR FIND DISCREPANCIES OR OMISSIONS IN THE CONTRACT DOCUMENTS OR BE IN DOUBT AS TO THE INTENT THEREOF, HE SHALL IMMEDIATELY OBTAIN CLARIFICATIONS FROM THE ENGINEER AND/OR OWNER'S REPRESENTATIVE PRIOR TO SUBMITTING HIS PROPOSAL FOR WORK. D. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE MALL ELECTRICAL SPECIFICATIONS, COORDINATE AND VERIFY WORK PRIOR TO START OF CONSTRUCTION.</p> <p>3. SCOPE FURNISH LABOR, MATERIALS, TOOLS, EQUIPMENT, ETC., REQUIRED FOR A COMPLETE INSTALLATION OF ELECTRICAL SYSTEMS AND WORK, IN ACCORDANCE WITH LOCAL CODES AND GOVERNING BODIES HAVING JURISDICTION, AS SHOWN ON THE DRAWINGS, AND AS SPECIFIED, INCLUDING BUT NOT LIMITED TO THE FOLLOWING (AS APPLICABLE). A. REVISE SERVICE ENTRANCE SYSTEM (CONFORM TO MALL REQUIREMENTS) B. POWER DISTRIBUTION SYSTEM. C. LIGHTING SYSTEMS (ALSO SEE REFLECTED CEILING PLAN). D. ELECTRICAL ENERGIZING - MISCELLANEOUS FAN AND MOTOR. E. MOTOR POWER WIRING SYSTEM. F. TELEPHONE EMPTY CONDUIT SYSTEM (INCLUDING TERMINAL BOXES AND OUTLETS). G. CONVENIENCE RECEPTACLE OUTLET SYSTEMS. H. EMERGENCY LIGHT, BATTERIES, WIRING AND INSTALLATION. I. GROUNDING IN ACCORDANCE WITH 1999 NEC AND ALL MALL REQUIREMENTS.</p> <p>4. WORKMANSHIP: A. USE EXPERIENCED, WELL QUALIFIED CRAFTSMEN, IN GOOD STANDING IN THEIR RESPECTIVE LABOR UNIONS. B. USE CAPABLE AND EXPERIENCED SUPERINTENDENTS, AUTHORIZED BY THE CONTRACTOR TO INSTRUCT WORK, MAKE JOB DECISIONS AND ACT FOR THE CONTRACTOR IN ALL MATTERS PERTAINING TO THE CONTRACT. 5. PERMITS, TESTS AND INSPECTIONS: A. APPLY FOR SECURE AND PAY FOR ALL REQUIRED PERMITS, FEES, LICENSES AND ROYALTIES TO ACCOMPLISH THE WORK. B. APPLY FOR, SECURE AND PAY FOR ALL REQUIRED TESTS AND INSPECTIONS TO ACCOMPLISH THE WORK IN CONFORMANCE WITH ALL CODES AND JURISDICTIONS. C. FURNISH SIGNED CERTIFIED AND ACCEPTABLE COPIES OF ALL ITEMS COVERED IN (A) AND (B) ABOVE TO THE OWNER FOR HIS RECORDS. D. COMPLY WITH RULES AND REGULATIONS OF JURISDICTIONAL AUTHORITIES AND LANDLORD SPECIFICATIONS AND REPORT ANY DEVIATIONS ON DRAWINGS TO OWNER.</p>	<p>6. CODES, RULES AND REGULATIONS: THE CONTRACTOR SHALL FURNISH, WITHOUT EXTRA CHARGE ANY ADDITIONAL MATERIALS AND LABOR, THAT MAY BE REQUIRED FOR COMPLIANCE WITH ALL GOVERNING LAWS, RULES AND REGULATIONS, EVEN THOUGH THE WORK IS NOT MENTIONED IN THESE SPECIFICATIONS OR SHOWN ON THE DRAWINGS. NOTHING IN PLANS OR SPECIFICATIONS SHALL BE DEEMED AS AUTHORITY TO VIOLATE ANY GOVERNING CODE.</p> <p>7. ACCURACY OF DATA: A. THE DATA GIVEN HEREIN AND ON THE DRAWINGS ARE AS EXACT AS COULD BE SECURED, BUT THEIR ABSOLUTE ACCURACY IS NOT GUARANTEED. THE SPECIFICATIONS AND DRAWINGS ARE FOR THE ASSISTANCE AND GUIDANCE OF THE CONTRACTOR, EXACT LOCATIONS, DISTANCES, LEVELS, ETC. WILL BE GOVERNED BY THE BUILDING AND THE CONTRACTOR SHALL USE THE DATA CONTAINED HEREIN WITH THIS UNDERSTANDING. B. THE EXACT LOCATION OF EACH AND EVERY OUTLET OF EACH WIRING SYSTEM, NOT DIMENSIONED ON THE DRAWINGS SHALL BE AS DIRECTED BY THE OWNER OR HIS SELECTED REPRESENTATIVE. C. CONSULT THE TENANT CRITERIA MANUAL FOR ADDITIONAL INFORMATION. 8. CLEAN-UP: REMOVE ALL SURPLUS MATERIAL, EQUIPMENT AND DEBRIS INCIDENTAL TO THIS WORK AND LEAVE THE PREMISES IN A CONDITION ACCEPTABLE TO THE TENANT. 9. GUARANTEE: FURNISH A WRITTEN CERTIFIED GUARANTEE, IN ACCEPTABLE FORM TO THE TENANT, AGAINST ANY DEFECTIVE WORKMANSHIP, MATERIAL AND OPERATING EQUIPMENT. THIS GUARANTEE SHALL BE IN FORCE AND EFFECTIVE FOR A PERIOD OF ONE (1) YEAR AFTER ACCEPTANCE OF THE INSTALLATION. 10. TEMPORARY ELECTRIC SERVICE: THE ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY ELECTRICAL WIRING FOR CONSTRUCTION USE AS FOLLOWS: THE SERVICE ENTRANCE AND FEEDER SHALL BE 60 AMPS, SINGLE PHASE, 3 WIRE 120/208 VOLT FUSED MAIN DISCONNECT, THE FEEDER TO SERVE THE TEMPORARY DISTRIBUTION WIRING PROVIDING TEMPORARY LIGHTING IN ALL AREAS AS INDICATED ON DRAWING AND WHEREVER REQUIRED FOR THE OPERATION OF 120 VOLT SINGLE PHASE PORTABLE TOOLS AND EQUIPMENT NOT TO EXCEED 1 HP. PROVIDE GROUND FAULT PROTECTION FOR ALL 10 RECEPTACLES NOT TO BECOME A PERMANENT PART OF THE INSTALLATION. 11. STRUCTURAL CONDITIONS: NOTCHING AND BORING OF STRUCTURAL MEMBERS WILL NOT BE PERMITTED UNLESS APPROVED BY THE LANDLORD. THE CONTRACTOR SHALL LAYOUT HIS WORK AND OBTAIN THE APPROVAL OF THE MALL FOR THE NECESSARY HOLES AND NOTCHES BEFORE PROCEEDING WITH THE INSTALLATION. WHERE NOTCHES AND HOLES ARE APPROVED, THEY SHALL BE CAREFULLY HELD TO THE MINIMUM SIZES ACTUALLY REQUIRED. 12. COOPERATION WITH OTHER CONTRACTORS: CONTRACTOR SHALL COOPERATE WITH ALL OTHER CONTRACTORS FURNISHING LABOR, MATERIALS AND ALL WORK, SO THAT THE WORK AS A WHOLE SHALL BE EXECUTED AND COMPLETED WITHOUT CONFLICT OR DELAY. IN THE EVENT OF ANY MECHANICAL OBSTRUCTION, I.E., PLUMBING OR AIR CONDITIONING DUCTS IN WAY OF ELECTRICAL EQUIPMENT, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE TENANT BEFORE COMMENCING ANY WORK.</p>	<p>1. RACEWAYS AND BOXES: A. WHERE SIZE OF RACEWAY OR BOXES ARE NOT INDICATED, THE CONTRACTOR SHALL SIZE THESE ITEMS AS REQUIRED FOR THE INSTALLATION. B. CONDUITS RUN EXPOSED ON EXTERIOR OF BUILDING SHALL BE RIGID CONDUIT WITH WEATHERTIGHT, CORROSION-RESISTANT FITTINGS. C. ALL INTERIOR WIRING SHALL BE INSTALLED IN RIGID CONDUIT, EMT, OR 1/2" FLEXIBLE METAL CONDUIT. CABLE TYPES AC AND MC ARE ACCEPTABLE. BX AND NON-METALLIC ARE NOT ACCEPTABLE. PROVIDE FLEXIBLE WIRING CONNECTIONS TO LIGHT FIXTURES AS APPROVED BY N.E.C. AND LOCAL AUTHORITY. D. CONDUIT SHALL BE 1/2" OR 3/4" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS, OR REQUIRED BY LOCAL CODES. CONDUIT RUN IN OR UNDER CONCRETE SLABS SHALL BE 3/4" MINIMUM RIGID GALVANIZED. E. ALL WORK RUN IN UNEXCAVATED AREAS, CRAWL SPACES, TUNNELS, UNDERGROUND, OR IN A SLAB SHALL BE INSTALLED IN RIGID CONDUIT OR PVC. F. ALL WORK RUN EXPOSED WITHIN THE BUILDING MAY BE INSTALLED IN RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING (EMT). G. GALVANIZED PRESSED STEEL OUTLET BOXES OF PROPER SIZE AND TYPE AS REQUIRED BY THE BUILDING CONDITIONS SHALL BE PROVIDED FOR ALL INTERIOR OUTLETS FOR LIGHTING, SWITCHES, RECEPTACLES, CLOCKS, SIGNALS, AND THE LIKE. H. PROVIDE GALVANIZED FITTINGS FOR EXPOSED WORK, THREADED FOR CONDUIT CONNECTIONS AND PROVIDE WITH SUITABLE COVERS. I. THE OUTLETS FOR LOCAL SWITCHES SHALL BE INSTALLED ADJACENT TO THE TRIM ON THE STRIKING SIDE OF THE DOOR, REGARDLESS OF THE LOCATIONS INDICATED ON THE DRAWINGS. THEREFORE, CHECK ALL DOOR SWINGS BEFORE INSTALLATION OF CONDUITS AND OUTLETS. J. ALL HOME RUNS SHALL BE A MINIMUM 3/4" CONDUIT. K. CONDUIT FITTINGS SHALL BE STEEL. CAST FITTINGS ARE NOT PERMITTED.</p> <p>2. GROUNDING: A. ALL MAJOR PARTS NOT CARRYING CURRENT, INCLUDING THE FOLLOWING ITEMS, SHALL BE PROPERLY GROUNDED: 1) SECONDARY FEEDER CONDUIT AND EQUIPMENT ENCLOSURES. 2) PANELBOARD ENCLOSURE, PULL AND JUNCTION BOXES AND CABLE TROUGHS. 3) ALL CONDUITS, METAL MOLDING, AND OUTLET BOXES. 4) FAN AND EQUIPMENT HOUSING EXPOSED ON THE STRUCTURE OR ON GRADE. B. PROVIDE EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUIT RUNS.</p> <p>3. ELECTRICAL SERVICE: SEE ONE LINE WIRING DIAGRAM.</p> <p>4. MOTOR AND OTHER WIRING: A. PROVIDE ALL REQUIRED CONDUIT, POWER WIRING AND SAFETY SWITCHES FOR ALL MOTORS, AND ANY OTHER ELECTRICAL EQUIPMENT INSTALLED OR CONNECTED UNDER THIS DIVISION. ALL CONTROLS (WIRING &amp; DEVICES) FURNISHED AND INSTALLED BY OTHERS. B. ALL MOTORS WILL BE FURNISHED AND SET UNDER OTHER DIVISIONS, THE WORK OF THIS DIVISION SHALL INCLUDE PROVIDING ALL CONNECTIONS SO AS TO BE COMPLETE. C. ALL STARTING DEVICES, MOTOR CONTROLLERS, FLOAT SWITCHES, LEVEL SENSORS, ALARM DEVICES, REMOTE CONTROL PUSHBUTTONS, ETC., WILL BE FURNISHED AND INSTALLED BY OTHER CONTRACTORS, UNLESS OTHERWISE NOTED HEREIN. D. FOR EACH THERMOSTAT (BY HVAC), PROVIDE 4" x 4" OUTLET BOX WITH 3/4" EMPTY CONDUIT STUBBED UP INTO HUNG CEILING AND BUSHED. PROVIDE STEEL DRAG WIRE FOR EACH LOCATION. E. THIS CONTRACTOR SHALL FIELD VERIFY EXACT NAMEPLATE DATA ON ALL EQUIPMENT FURNISHED UNDER OTHER DIVISION AND/OR BY THE TENANT (I.E. HVAC EQUIPMENT, COMPUTER EQUIPMENT, ETC.) PRIOR TO THE INSTALLATION OF ELECTRICAL WORK AND MAKE ADJUSTMENTS TO OUTLETS, CONDUIT, WIRE, AND/OR CIRCUIT BREAKERS AS REQUIRED TO MATCH EQUIPMENT ACTUALLY FURNISHED.</p> <p>5. DISCONNECT SWITCHES: NEMA KSI, HEAVY DUTY, 3-POLE, S/N IF NEUTRAL IS PRESENT, LOCK-OFF, NON-FUSIBLE UNLESS INDICATED WITH FUSES.</p>	<p>7. WIRING DEVICES: A. ALL WIRING DEVICES INSTALLED IN THIS BUILDING SHALL BE "SPECIFICATION GRADE" AND MANUFACTURED BY ARROW HART, LEVITON, SLATOR, HUBBELL AND GENERAL ELECTRIC OR EQUAL. B. LOCAL SWITCHES SHALL BE TOGGLE TYPE, AC, RATED 20 AMPERES, 125 VOLTS, QUIET TYPE WITH SILENT OPERATING MECHANISM. TOTALLY ENCLOSED IN A MOLDED COMPOSITION BASE. SWITCHES SHALL BE SINGLE POLE, THREE OR FOUR-WAY AS INDICATED. WHERE LOCK TYPE LOCAL SWITCHES ARE INDICATED, THESE SHALL BE SIMILAR TO THE ABOVE SPECIFICATION WITH KEY OPERATOR. PROVIDE TO OWNER ONE (1) KEY FOR EACH SWITCH INSTALLED. C. ALL RECEPTACLES INSTALLED IN THIS BUILDING SHALL BE GROUNDING TYPE WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION TO CONDUIT SYSTEM. INSTALL 15" A.F.F. TO CENTER, OR AS NOTED. D. WALL PLATES: SMOOTH PLASTIC. E. WALL DEVICES AND PLATE COLOR: IVORY ON VINYL AND ON WOOD SURFACES, ORANGE ISOLATED GROUND RECEPTACLES. F. SURFACE MOUNTED DEVICES: APPLETON FS &amp; FD SERIES OR EQUAL. G. WEATHERPROOF DEVICES: APPLETON FSK SERIES OR EQUAL. H. DUPLEX RECEPTACLES: NEMA 5-20R CONFIGURATION AND RATING, BACK AND SIDE WIRED, UREA BODY, GROUND TERMINAL SCREW. FED SPEC W-C-596. I. ISOLATED GROUND RECEPTACLES: NEMA 5-20R(G) J. GFI DUPLEX RECEPTACLES: NEMA 5-20R CONFIGURATION AND RATING, SELF CONTAINED GROUND FAULT CURRENT INTERRUPTING DUPLEX RECEPTACLE, GRAY COLORED. PROVIDE WITH WEATHERPROOF BOX AND COVER WHERE INDICATED. INSTALL AT 15" A.F.F. TO CENTER, OR AS NOTED. TOILET ROOM RECEPTACLES INSTALL 48" A.F.F. TO CENTER. K. WALL SWITCHES: MOLDED PHENOLIC OR UREA BODY, RATED FOR 20 AMPERES AT 120 VOLTS, SIDE WIRED, GROUNDING SCREW OR GREEN GROUNDING WIRE, NON-FRAMED, FED SPEC W-S-896. INSTALL 50" A.F.F. TO CENTER.</p> <p>8. WIRE AND CABLES: A. ALL WIRE FOR LIGHT AND POWER INSTALLATIONS SHALL BE HIGH CONDUCTIVITY COPPER, 600 VOLT, INSULATED IN ACCORDANCE WITH THE NATIONAL BOARD OF FIRE UNDERWRITERS' STANDARDS FOR TYPE "THW" WIRES, EXCEPT AS NOTED ON THE DRAWINGS OR OTHERWISE SPECIFIED HEREIN. B. NO WIRE SHALL BE SMALLER THAN #12 AWG. ALL WIRE NO. 8 AND LARGER SHALL BE STRANDED. C. WIRES SHALL BE COLOR CODED. D. ALL WIRES SHALL BE POLARIZED. E. TYPES: NO. 12 THRU 10 - THHN/THWN SOLID COPPER CONDUCTOR NO. 8 THRU 6 - THHN/THWN STRANDED COPPER CONDUCTOR FOR: BRANCH CIRCUITRY: TW, THW, THWN OR THHN FOR: MAIN FEEDERS: THWN, OR THHN F. COLOR CODE: 208Y/120V SYSTEM PHASE A BLACK PHASE B RED PHASE C BLUE NEUTRAL WHITE GROUND GREEN G. THAT ONLY FACTORY-ASSEMBLED MULTICONDUCTOR CONTROL OR POWER CABLE THAT IS SPECIFICALLY LISTED FOR THE USE SHALL BE INSTALLED IN ENVIRONMENTAL AIR PLenums.</p> <p>9. LIGHTING AND POWER PANELS: EXISTING TO BE REUSED. REPLACE AS REQUIRED WITH THE FOLLOWING: A. PANELBOARDS: NEMA PBI AS SCHEDULED, 20" WIDE SECTION, 225 AMP BUS (100A BUS PERMITTED IF LESS THAN 30 BRUSH POLES). PROVIDE GROUND BUS FOR ISOLATED GROUND CIRCUITS. INSTALL PER NEMA PBI BALANCE PHASE CURRENTS TO 10% MAXIMUM VARIATION. PROVIDE TYPEWRITTEN BRANCH CIRCUIT DIRECTORY. LOAD CENTERS NOT APPROVED. B. CIRCUIT BREAKERS: NEMA ABI AS SCHEDULED, BOLT-ON CENTER TRIP. ALL BREAKERS SHALL BE APPROVED FOR SWITCH DUTY AND AS SUCH MARKED "SWD" BY THE MANUFACTURER. ALL MULTIPLE POLE BREAKERS SHALL HAVE A COMMON TRIP HANDLE. MINIMUM INDIVIDUALLY RATED INSTALLED AIC: 277/480 VOLT - 14,000 AIC., 120/208 OR 120/240 VOLT - 10,000 AIC. C. PANEL SECTIONS SHALL BE SUCH THAT NO LIVE PARTS ARE EXPOSED AFTER INSTALLATION. THEY SHALL BE SO ARRANGED THAT EACH BREAKER IS READILY REMOVABLE FROM THE PANEL WITHOUT DISTURBING ADJACENT BREAKERS. D. PHASE LEGS SHALL BE ALTERNATELY BUSSSED TO EACH CIRCUIT BREAKER IN A MANNER TO AFFECT BALANCING THE BRANCH CIRCUIT CONNECTIONS AS NEARLY AS POSSIBLE OVER EACH PHASE.</p>	<p>10. LIGHTING FIXTURES: A. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE UNLOADING AND STORAGE AND PROTECTION AND SHALL NOTIFY TENANT OF ITEMS FOUND TO BE DEFECTIVE. B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL THE NECESSARY LABOR AND MATERIALS FOR THE COMPLETE INSTALLATION OF THE LIGHTING FIXTURES AS INDICATED ON THE DRAWINGS. C. ALL FLUORESCENT LAMPS SHALL BE: AS PER LIGHT FIXTURE SCHEDULE. D. SEE DRAWINGS FOR LIGHT FIXTURE DESCRIPTION AND MOUNTING HEIGHT. E. TRACK FIXTURES WILL BE FURNISHED WITH TRACK, CONNECTORS, AND OTHER ACCESSORIES AS APPROPRIATE. CUT TRACK TO LENGTH SHOWN ON DRAWING. MATCH TRACK COLOR WITH FIXTURE COLORS. PROVIDE ADDITIONAL HARDWARE AS REQUIRED FOR A COMPLETE INSTALLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION. F. LEAVE PROTECTIVE FILM IN PLACE ON FIXTURES UNTIL FINAL CLEAN-UP.</p> <p>11. TELEPHONE SYSTEM: A. RACEWAY CONDUIT STUBS FROM OUTLET BOX INCLUDING WALL PLATES IS FURNISHED AND INSTALLED BY GENERAL CONTRACTOR'S ELECTRICAL CONTRACTOR. B. TELEPHONE SYSTEM IS PROVIDED BY LOCAL TELEPHONE COMPANY.</p> <p>12. FIRE ALARM: A. EXISTING FIRE ALARM SYSTEM IS A NOTIFIER -INTELLIGENT SYSTEM. ALL NEW DEVICES SHALL MATCH EXISTING. B. THE DIVISION 16 CONTRACTOR SHALL PROVIDE A FIRE ALARM SYSTEM COMPLIANT WITH ALL LOCAL CODES AND REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING CONTRACT DOCUMENTS AND ADDING ANY ADDITIONAL DEVICES REQUIRED TO MEET THESE LOCAL CODE REQUIREMENTS AND INCLUDING THE COST IN THEIR SUBMITTED BIDS. C. THE DIVISION 16 CONTRACTOR SHALL RE-PROGRAM THE FIRE ALARM CONTROL CABINET AFTER DEMOLITION IS COMPLETED AND AGAIN AFTER ALL NEW DEVICES ARE COMPLETED.</p>



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PROJECT :



EXECUTIVE OFFICE LAYOUT  
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PORTLAND, MAINE

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**ELECTRICAL SPECIFICATIONS**

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