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ELECTRICAL SPECIFICATIONS:

CONTRACTOR IS RESPONSIBLE TO REVIEW AND UNDERSTAND ALL DRAWINGS AND ALL WORK OF ALL TRADES TO ENSURE A COMPLETE AND THOROUGH PROJECT. CONTRACTOR SHALL COOPERATE AND COORDINATE ALL PHASES OF WORK WITH OTHER DISCIPLINES AND GENERAL CONTRACTOR.

CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS. VERIFY LOCATIONS, CONDUIT ROUTINGS, COORDINATE WITH EXISTING EQUIPMENT, ETC. BEFORE SUBMITTING A BID. ANY DISCREPANCIES SHALL BE REPORTED TO THE GENERAL CONTRACTOR BEFORE THE BID DATE.

FIELD DETERMINE THE EXACT EXISTING CONDITIONS AND EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT, INCLUDING ALL EQUIPMENT RATINGS AND FEEDER SIZES. EXISTING CONDITIONS INDICATED ON THESE DRAWINGS ARE TAKEN FROM EXISTING BUILDING DOCUMENTS AND/OR FIELD OBSERVATION. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE ELECTRICAL CONTRACTOR IS RESPONSIBLE THAT MAY NOT BE SPECIFICALLY ADDRESSED IN THESE DRAWINGS.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES PRIOR TO INSTALLATION OF EQUIPMENT AND RACEWAYS.

CONTRACTOR SHALL OBTAIN ALL PERMITS AND COORDINATE ALL INSPECTIONS REQUIRED BY LOCAL AUTHORIZED AGENCIES HAVING JURISDICTION. PERMIT/INSPECTION FEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH RECOGNIZED STANDARDS OF WORKMANSHIP. ALL WORK SHALL BE INSTALLED IN A NEAT AND ORDERLY MANNER.

ALL ELECTRICAL CONSTRUCTION SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE, APPLICABLE NEMA, ANSI AND IEEE PUBLICATIONS, U.L. STANDARDS, AND OSHA REQUIREMENTS. WORK SHALL COMPLY WITH LOCAL, COUNTY, STATE, AND NATIONAL CODES HAVING JURISDICTION.

PROVIDE MATERIALS AND LABOR FOR A COMPLETE ELECTRICAL INSTALLATION. ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE NEW AND BEAR THE UNDERWRITERS LABORATORIES, INC. (UL) LABEL WHERE AVAILABLE.

MULTIPLE ITEMS SUCH AS WIRING DEVICES, RACEWAYS, ETC. SHALL BE FROM THE SAME MANUFACTURER. ALL EQUIPMENT PROVIDED SHALL BE THE STANDARD EQUIPMENT OF THE MANUFACTURER.

PANLEDOARDS SHALL HAVE HARD DRAWN COPPER BUS AND BOLT-ON MOLDED CASE THERMAL-MAGNETIC CIRCUIT BREAKERS. AIC RATINGS SHALL BE RATED AS INDICATED ON PANEL SCHEDULES. ACCEPTABLE MANUFACTURERS: GENERAL ELECTRIC, SQUARE D, SIEMENS, CUTLER HAMMER.

ALL BREAKERS SHALL BE TYPE HACR BREAKERS.

SAFETY DISCONNECT SWITCHES SHALL BE SINGLE-TROW, HEAVY-DUTY TYPE, WITH SOLID NEUTRAL, VOLTAGE RATINGS SHALL BE 240VAC OR 600VAC, AS REQUIRED BY THE UTILIZATION VOLTAGE OF THE EQUIPMENT SERVED. PROVIDE FUSIBLE CIRCUIT BREAKERS AS INDICATED. PROVIDE FUSES WHERE INDICATED. FUSES SHALL BE FUSE ELEMENT, TIME-DELAY, REJECTION TYPE. SWITCHES SHALL HAVE HORSEPOWER RATINGS EQUAL TO OR EXCEED THE CALCULATED MOTOR LOADS. ACCEPTABLE MANUFACTURERS: GENERAL ELECTRIC, SQUARE D, SIEMENS, CUTLER HAMMER.

WIRING SHALL BE INSTALLED IN CONDUIT. CONDUIT SHALL BE EMT OR BRANCH CUTTER WIRING. FITTINGS SHALL BE HEX-NUT, CONPRESSION TYPE, ZINC PLATED AND U.L. AS RAN TIGHT. NO CRIMP, SPRING, OR SET SCREW TYPE FITTINGS SHALL BE ACCEPTED. EXPOSED CONDUITS SHALL BE RIGID GALVANIZED STEEL, CONNECTORS AND COUPLERS SHALL BE STEEL, THREADED TYPE, PAINT ENAMEL. CONDUIT COUPLERS AND CONNECTORS WITH ZINC PRIMER AND ONE FINISH COAT OF PAINT ENAMEL. FUSES AND INSTALL SLEEVES FOR ALL CONDUIT PENETRATIONS THROUGH FLOORS OR WALLS. MINIMUM CONDUIT SIZE SHALL BE 1/2".

CONDUCTORS SHALL BE COPPER, 600 VOLTS, THERMAL-STABILIZED INSULATION. MINIMUM SIZE BRANCH CIRCUIT CONDUCTORS SHALL BE NUMBER 12. CONDUCTORS SHALL BE COLOR CODED AND CONTINUOUS FROM CONDUIT TO OUTLET. NUMBER 14 AWG SHALL BE SOLID, AND NUMBER 10 AWG AND LARGER SHALL BE STRANDED.

TYPE MC CABLE MAY BE USED IN CONCEALED LOCATIONS ABOVE CEILING WHERE ALLOWED BY LOCAL CODES AND SHALL BE CONNECTED AS A COST SAVINGS TO THE OWNER. MC CABLE SHALL NOT BE USED TO ENTER PANELDOARDS.

COLOR CODE WRING AS FOLLOWS:

- PHASE A: BLACK
- PHASE B: RED
- PHASE C: BLUE
- NEUTRAL: WHITE
- GROUND: GREEN

ALL CONDUIT AND WIRING SHALL BE CONCEALED IN WALLS OR ABOVE CEILINGS UNLESS NOTED OTHERWISE OR APPROVED BY THE ARCHITECT/ENGINEER. ALL DEVICE OUTLET BOXES SHALL BE RECESSED UNLESS NOTED OTHERWISE OR APPROVED BY THE ARCHITECT/ENGINEER. WHERE APPROVED OR NOTED, SURFACE METAL RACEWAY AND DEVICE BOXES SHALL BE USED IN LEU OF CONDUIT AND CONCEALED BOXES AT NO EXTRA COST TO THE OWNER.

INSTALL EXPOSED RACEWAYS PARALLEL TO OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS, AND FOLLOW THE SURFACE CONTOURS AS MUCH AS PRACTICAL. RUN PARALLEL OR BANKED RACEWAYS TOGETHER, ON COMMON SUPPORTS WHERE PRACTICAL. MAKE BENDS IN PARALLEL OR BANKED RUNS FROM SAME CENTERLINE TO MAKE BENDS PARALLEL. USE FACTORY ELBOWS ONLY WHERE ELBOWS CAN BE INSTALLED PARALLEL. OTHERWISE, PROVIDE FIELD BENDS FOR PARALLEL RACEWAYS.

FLEXIBLE CONDUIT WITH COLD ROLLED STEEL CORE SHALL BE USED FOR SHORT FINAL CONNECTION (6'-0" OR LESS) TO EQUIPMENT. PROVIDE MAXIMUM 6'-0" UNJACKETED FLEXIBLE CONDUIT CONNECTIONS TO LIGHTING FIXTURES IN LIFT-OUT TYPE CEILINGS FROM AN OUTLET BOX LOCATED ABOVE THE CEILING.

EACH ELECTRICAL DEVICE AND JUNCTION POINT SHALL BE PROVIDED WITH A STEEL OUTLET BOX. BOXES SHALL BE OF SUFFICIENT SIZE FOR NUMBER OF CONDUCTORS AND SPLICES.

WHERE CONCEALED CONDUIT IS INDICATED, PROVIDE A FLUSH-MOUNTED GALVANIZED PRESSED SHEET STEEL OUTLET BOX, 1 1/2" X 4" X 4" MINIMUM SIZE, COMPLETE WITH RAISED DEVICE COVER.

JUNCTION, PULL, AND OUTLET BOXES SHALL BE INSTALLED SUCH THAT THE WIRING CONTAINED IN BOX MAY BE RENDERED ACCESSIBLE.

FLOOR BOXES SHALL BE CAST METAL, RECTANGULAR, FULLY-ADJUSTABLE, WITH COVER, AND WITH COMPARTMENTS FOR POWER AND DATA AS REQUIRED. ACCEPTABLE MANUFACTURERS: WIREMOLD, HUBBELL, STEEL CITY.

WIRING DEVICES SHALL BE HEAVY DUTY TYPE AND AS SPECIFIED IN THE ELECTRICAL SYMBOL LEGEND. COLOR/FINISH SHALL BE AS SELECTED BY OWNER. ACCEPTABLE MANUFACTURERS: HUBBELL, LEVITON, PASS & SEYMOUR, COOPER.

DEVICE PLATES SHALL BE INSTALLED ON ALL ELECTRICAL WIRING DEVICES. DEVICE PLATES MATERIAL AND FINISH SHALL BE AS SELECTED BY OWNER.

CONDUIT PENETRATIONS OF ROOF, WALLS, FLOORS, AND CEILINGS SHALL BE SEALED TO PRESERVE THE INTEGRITY OF WATERPROOFING, FIRE RATING, AND SOUNDPROOFING FOR WHICH THE ROOF, WALL, FLOOR, OR CEILING IS DESIGNED. MATERIALS AND METHODS USED SHALL CONFORM TO THAT SPECIFIED UNDER ARCHITECTURAL SECTIONS AND SHALL COMPLY WITH STATE AND LOCAL BUILDING AND FIRE CODES. COORDINATE WITH GENERAL CONTRACTOR TO ENSURE THAT SEALING/FRESTOPPING IS DONE.

LIGHTING FIXTURES SHALL BE AS SCHEDULED. FLUORESCENT LAMPS SHALL HAVE COLOR TEMPERATURE OF 4100K. FLUORESCENT BALLASTS SHALL HAVE A TOTAL HARMONIC DISTORTION OF LESS THAN 20%. EMERGENCY BATTERY PACK BALLASTS SHALL BE INTERNAL TYPE WITH A SEALED BATTERY AND FULLY-AUTOMATIC CHARGER.

VERIFY ALL DOOR SWINGS BEFORE ROUGH-IN OF LIGHT SWITCHES.

ALL METAL RACEWAYS, INCLUDING CONDUIT, WIRE TROUGHS, WIRE MOLD, ETC., SHALL BE GROUNDED. ALL CONNECTIONS IN METAL RACEWAYS SHALL BE COMPLETED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUS PATH TO GROUND THROUGHOUT THE ENTIRE LENGTH OF THE RACEWAY.

THE METALLIC CONDUIT SYSTEM SHALL BE USED AS PERMITTED BY THE ELECTRICAL CODE FOR EQUIPMENT AND ENCLOSURE GROUNDING SYSTEM. PROVIDE, AS DEFINED BY THE ELECTRICAL CODE, GROUNDING LUGS, STRAPS AND GREEN INSULATED COPPER GROUNDING CONDUCTORS EACH UTILIZED AND SIZED ACCORDING TO THE ELECTRICAL CODE.

IN ADDITION, A GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR, INSTALLED AS A REDUNDANT GROUND PATH, IN CONDUIT WITH THE PHASE CONDUCTORS, SHALL BE PROVIDED FOR ALL BRANCH CIRCUITS.

PROVIDE GROUNDING FOR ALL EQUIPMENT IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.

ALL WORK SHALL HAVE PROPER LABELING. ALL CIRCUITS SHALL BE LABELED AT PANELS AND ON RECEPTACLE & DEVICE OUTLET PLATES. ALL PANELS AND DISCONNECTS SHALL BE PERMANENTLY MARKED WITH NAME OR EQUIPMENT SERVED. ALL PANELS SHALL BE PROVIDED WITH TYPE-WRITTEN PANEL SCHEDULES.

ALL EQUIPMENT, FIXTURES, DEVICES, AND MATERIALS SHALL BE FREE OF CORROSION, DIRT, PAINT, SPLATTER OR DAMAGE OF ANY SORT AT FINAL ACCEPTANCE OF THE WORK. ELECTRICAL CONTRACTOR SHALL CLEAN, REPAIR OR REPLACE SAME AS INSTRUCTED BY OWNER BEFORE FINAL PAYMENT.

DEMOLITION / RENOVATION

REFER TO ARCHITECTURAL DEMOLITION DRAWINGS AND SPECIFICATIONS FOR COORDINATION OF ADDITIONAL REQUIREMENTS.

IN SPACES THAT ARE BEING RENOVATED WHERE THE CEILING AND/OR WALLS ARE BEING DEMOLISHED, REMOVE LIGHTING FIXTURES, DEVICES, ETC. SHALL BE REMOVED UNLESS NOTED OTHERWISE. ABANDONED DEVICES SHALL BE REMOVED WITH THE CONCRETE BOX.

FOR ITEMS TO BE DEMOLISHED, REMOVE WIRING/CONDUIT BACK TO THE LAST ACTIVE PANEL OR SOURCE PANELBOARD. MAINTAIN CIRCUIT CONTINUITY TO REMAINING ITEMS ON CIRCUITS REQUIRED TO REMAIN. RELOCATE ANY CIRCUITS NECESSARY TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL WIRING.

PATCH AND REPAIR ALL SURFACES CONTAINING DEMOLITION. COORDINATE WITH ARCHITECTURAL DRAWINGS. MATERIALS AND FINISHES SHALL MATCH ADJACENT SURFACES.

ANY EXISTING ELECTRICAL DEVICES LEFT WITHOUT POWER DUE TO THIS RENOVATION SHALL BE RECONNECTED TO SAME SIZE CIRCUITS AS PRESENTLY SERVED. NO ELECTRICAL DEVICES SHALL BE LEFT WITHOUT POWER.

IF OTHER AREAS OF THE FACILITY ARE SERVED THROUGH THE REMODELED AREA, THESE CIRCUITS SHALL BE REWORKED AT A TIME COORDINATED WITH THE OWNER TO MINIMIZE ANY AREA BEING WITHOUT POWER. ALL AREAS OF THE FACILITY SHALL MAINTAIN THEIR EXISTING ELECTRICAL SERVICES, REWORKED IF NECESSARY.

EXISTING CONDUIT IN THE RENOVATED AREA SHALL BE REUSED IF IT CAN BE LEFT IN PLACE OR IS IN GOOD CONDITION WHEN REMOVED. EXISTING CONDUIT NOT INTENDED TO BE REUSED SHALL BE REMOVED IN CEILING SPACES AND WALLS. EXISTING CONDUIT BELOW FLOOR SLABS MAY BE ABANDONED IN PLACE. REMOVE ALL WIRING, CUT OFF ABANDONED CONDUIT BELOW FLOOR, AND GROUT FLUSH.

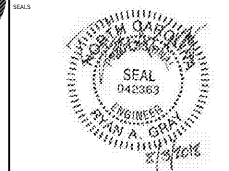
CONDUCTORS IN RENOVATED AREA SHALL BE NEW. DO NOT REUSE EXISTING WIRING UNLESS NOTED OTHERWISE.

PROPERLY DISPOSE OF ALL ITEMS BEING REMOVED AS PART OF THIS PROJECT. THE OWNER SHALL HAVE THE RIGHT TO RETAIN ANY ELECTRICAL ITEMS REMOVED FROM THE REMODELED AREA AND NOT INDICATED TO BE REUSED. IF THE OWNER DOES NOT WANT THE ITEMS, CONTRACTOR SHALL REMOVE ITEMS FROM THE SITE. COORDINATE ITEMS TO BE RETAINED WITH THE OWNER.

WHERE CIRCUIT BREAKERS ARE ADDED TO EXISTING PANELS, THEY SHALL MATCH EXISTING BREAKERS TYPE, MANUFACTURER, AND AIC RATING. UPDATE DIRECTORIES IN EXISTING PANELS TO REFLECT CHANGES BY THIS RENOVATION. DIRECTORIES SHALL BE TYPEWRITTEN.

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PRINCIPAL IN CHARGE
PROJECT ARCHITECT
DRAWN BY
SHEET TITLE
**ELECTRICAL
SPECIFICATIONS**

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