ELECTRICAL SYMBOL LEGEND

SWITCHES

SYMBOL	DESCRIPTION
$_G	SINGLE POLE SWITCH (SUBSCRIPT INDICATES ITEM CONTROLLED)
$_E	EMERGENCY SWITCH
$_3	THREE-WAY SWITCH
$_4	FOUR-WAY SWITCH
$_HOA	HAND-OFF-AUTOMATIC SWITCH
$_WP	SINGLE POLE SWITCH WITH WEATHERPROOF COVER
$_K	SINGLE POLE KEY SWITCH
$_3K	THREE-WAY KEY SWITCH
$_4K	FOUR-WAY KEY SWITCH
$_LV	LOW VOLTAGE SWITCH
$_F	FAN SWITCH
$_M	MOTOR SWITCH
$_D	WALL DIMMER SWITCH
$_OS	WALL SWITCH OCCUPANCY SENSOR
$_T	TIMER SWITCH (60 MINUTES)
OS	OCCUPANCY SENSOR - CEILING MOUNTED
OS	OCCUPANCY SENSOR - WALL MOUNTED
PC	PHOTOCELL
LC	LIGHTING CONTACTOR
TC	TIME CLOCK
RC	LIGHTING ROOM CONTROLLER
PL	PLUG LOAD SWITCH PACK FOR RECEPTACLE LOAD CONTROL
SP	LIGHTING / MOTOR SWITCH PACK

RECEPTACLES

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE, 20 AMP, 120V MOUNTED AT 18" A.F.F. U.O.N.
	DUPLEX RECEPTACLE, 20 AMP, 120V MOUNTED AT 48" A.F.F. U.O.N.
	QUADRAPLEX RECEPTACLE, 20 AMP, 120V MOUNTED AT 18" A.F.F. U.O.N.
	QUADRAPLEX RECEPTACLE, 20 AMP, 120V MOUNTED AT 48" A.F.F. U.O.N.
	SINGLE RECEPTACLE, 20 AMP, 120V MOUNTED AT 18" A.F.F. U.O.N.
	GFCI RECEPTACLE, 20 AMP, 120V U.O.N. (WP DENOTES WEATHERPROOF COVER)
	GFCI RECEPTACLE, 20 AMP, 120V U.O.N. MOUNTED AT 48" A.F.F. U.O.N. (WP DENOTES WEATHERPROOF COVER)
	GFCI QUADRAPLEX RECEPTACLE, 20 AMP, 120V U.O.N. (WP DENOTES WEATHERPROOF COVER)
	GFCI QUADRAPLEX RECEPTACLE, 20 AMP, 120V U.O.N. MOUNTED AT 48" A.F.F. U.O.N. (WP DENOTES WEATHERPROOF COVER)
	SPECIAL PURPOSE RECEPTACLE (NEMA RATING AS INDICATED)
	EMERGENCY DUPLEX RECEPTACLE, 20 AMP, 120V MOUNTED AT 18" A.F.F. U.O.N.
	EMERGENCY QUADRAPLEX RECEPTACLE, 20 AMP, 120V MOUNTED AT 18" A.F.F. U.O.N.
	DUPLEX RECEPTACLE HALF SWITCHED, 20 AMP, 120V MOUNTED AT 18" A.F.F. U.O.N.
	DUPLEX RECEPTACLE, 20 AMP, 120V CEILING MOUNTED
	QUADRAPLEX RECEPTACLE, 20 AMP, 120V CEILING MOUNTED
IG	DUPLEX RECEPTACLE WITH ISOLATED GROUND, 20 AMP, 120V MOUNTED AT 18" A.F.F. U.O.N.
	DUPLEX RECEPTACLE, 20 AMP, 120V AUTOMATIC SWITCHED RECEPTACLE
	QUADRAPLEX RECEPTACLE, 20 AMP, 120V AUTOMATIC SWITCHED RECEPTACLE
	DUPLEX RECEPTACLE, 20 AMP, 120V FLOOR MOUNTED
	QUADRAPLEX RECEPTACLE, 20 AMP, 120V FLOOR MOUNTED
J	JUNCTION BOX - CEILING MOUNTED
J	JUNCTION BOX - WALL MOUNTED
J	JUNCTION BOX - FLOOR MOUNTED
	JUNCTION BOX - FURNITURE SYSTEM FEED
	DUPLEX RECEPTACLE, 20 AMP, 120V & VOICE/DATA OUTLET FLOOR MOUNTED
	QUADRAPLEX RECEPTACLE, 20 AMP, 120V & VOICE/DATA OUTLET FLOOR MOUNTED

FIRE ALARM

SYMBOL	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FAAP	FIRE ALARM ANNUNCIATOR PANEL
EVAC	FIRE ALARM VOICE / EVACUATION UNIT
F	FIRE ALARM MANUAL PULL STATION
F	FIRE ALARM HORN/STROBE DEVICE MINIMUM 75CD RATING
F	FIRE ALARM STROBE DEVICE MINIMUM 75CD RATING (WALL MOUNTED)
F	FIRE ALARM STROBE DEVICE MINIMUM 75CD RATING (CEILING MOUNTED)
S	FIRE ALARM SPEAKER DEVICE (CEILING MOUNTED)
H	FIRE ALARM HEAT DETECTOR 135°F U.O.N. (CEILING MOUNTED)
PH	FIRE ALARM PHOTOELECTRIC SMOKE DETECTOR (CEILING MOUNTED)
I	FIRE ALARM IONIZATION SMOKE DETECTOR (CEILING MOUNTED)
E	FIRE ALARM SMOKE DETECTOR WITH ELEVATOR RECALL CONTACTS
R	FIRE ALARM SMOKE DETECTOR RETURN DUCT
S	FIRE ALARM SMOKE DETECTOR SUPPLY DUCT
PIV	POST INDICATOR VALVE WITH TAMPER SWITCH
FH	FIRE HYDRANT WITH TAMPER SWITCH
FS	FLOW SWITCH
TS	TAMPER SWITCH

TELECOMMUNICATIONS (RACEWAY ONLY)

SYMBOL	DESCRIPTION
	INFORMATION OUTLET
	INFORMATION OUTLET (FLOOR MOUNTED)
TV	CATV OUTLET
TV	CATV OUTLET (FLOOR MOUNTED)
S	INTERCOM SPEAKER (CEILING MOUNTED)

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTION
A	AMPERES
AC	ALTERNATING CURRENT
A/C	AIR CONDITIONING
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CU	COPPER
DC	DIRECT CURRENT
DIA	DIAMETER
E	EXISTING TO REMAIN
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EP	EMERGENCY POWER
EPO	EMERGENCY POWER OFF (BUTTON OR SWITCH)
FA	FIRE ALARM

GENERAL NOTES

1) DESIGN DRAWINGS ARE SCHEMATIC IN NATURE. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

2) THE CONTRACTOR SHALL CONTACT THE ARCHITECT OR ENGINEER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN THEIR BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT OR ENGINEER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

3) ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/OWNER.

4) CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FROM A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE.

5) CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.

6) ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OF PROPERTY DAMAGE FOR THE DURATION OF THE WORK.

7) ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, NFPA 101, AND STATE AND LOCAL CODE ORDINANCES.

8) ALL ELECTRICAL EQUIPMENT, DEVICES, WIRE, ETC., SHALL BE LISTED, FOR INTENDED USE, WITH UNDERWRITER'S LABORATORIES INC. (U.L.), WHERE STANDARDS HAVE BEEN ESTABLISHED BY U.L.

9) ALL LIGHT SWITCHES SHALL BE MOUNTED 48 INCHES ABOVE FINISHED FLOOR TO CENTER LINE OF DEVICE U.O.N.

10) THE OPENING IN THE GYPSUM BOARD FACING SHALL BE CUT NOT TO EXCEED 1/8 INCH BETWEEN THE EDGES OF THE OUTLET BOX AND THE EDGES OF THE OPENING.

11) CONTRACTOR SHALL FIELD VERIFY EXISTING/NEW ROUGH-IN LOCATIONS TO SUIT THE GIVEN SPACE.

12) CONTRACTOR TO FIELD VERIFY ROUTING OF NEW CONDUIT/WIRING ABOVE EXISTING CEILINGS FOR NEW DEVICES.

13) EQUIPMENT SHALL BE OF MATERIALS SUITABLE FOR AND NEMA RATED FOR THE ENVIRONMENT IN WHICH THEY ARE TO BE INSTALLED.

14) PROVIDE BLANK COVERPLATE FOR EXISTING DEVICE BACKBOXES THAT ARE NOT REUSED. COVERPLATE SHALL OF MATERIALS SUITABLE FOR THE ENVIROMENT IN WHICH THEY ARE INSTALLED.

GENERAL NOTES

1) CONTRACTORS SHALL VISIT THE SITE AND THOROUGHLY EXAMINE ALL CONTRACT DOCUMENTS, DRAWINGS, AND DETAILS TO HAVE COMPLETE UNDERSTANDING OF THE SCOPE OF THIS PROJECT AND ALL EXISTING CONDITIONS BEFORE SUBMITTING THEIR PROPOSAL BID. ALSO, ANY QUESTION, DISCREPANCY OR IRREGULARITY THAT A SUCCESSFUL CONTRACTOR MAY HAVE OR FIND SHALL BE CLARIFIED PRIOR TO CONTRACT FINALIZATION. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO PERFORM ALL WORK AND ALL MATERIALS AND EQUIPMENT REQUIRED FOR COMPLETE AND SATISFACTORY INSTALLATION AS INTENDED BY THIS DESIGN AND THE SCOPE OF THIS PROJECT.

2) COORDINATE WITH OTHER TRADES FOR ITEMS IN THEIR SCOPE OF WORK WHICH WOULD REQUIRE ELECTRICAL WORK (DISCONNECTION/RECONNECTION, ETC.) AND ARE NOT INDICATED ON THE ELECTRICAL PLANS.

3) ELECTRICAL CONTRACTOR SHALL VERIFY TOTAL CONNECTED LOAD/HP WITH MECHANICAL CONTRACTOR PRIOR TO WIRING OF ALL HVAC EQUIPMENT. MAKE ANY CHANGES TO OVERCURRENT DEVICES OR FEEDER SIZE PER THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.

4) ALL ELECTRICAL WORK AND MATERIALS SHALL BE PROVIDED (FURNISHED AND INSTALLED) BY THE CONTRACTOR UNLESS INDICATED OTHERWISE.

5) MOUNT DUPLEX RECEPTACLE FOR CATV ADJACENT TO CATV OUTLET. COORDINATE FINAL LOCATION AND MOUNTING HEIGHT OF RECEPTACLE AND CATV OUTLETS WITH INTERIOR DECORATOR PRIOR TO ROUGH-IN.

6) VOICE AND DATA OUTLETS AND CABLING SHALL BE INCLUDED IN EC SCOPE (BY ALLOWANCE).

7) ALL UNDERGROUND CONDUIT FOR LOW VOLTAGE WIRING TO BE PROVIDED BY EC.

8) ALL TEMPERATURE CONTROL WIRING SHALL BE FURNISHED AND INSTALLED BY OTHERS.

9) WITHIN 30 DAYS AFTER THE DATE OF CERTIFICATE OF OCCUPANCY, CONTRACTOR SHALL PROVIDE OPERATING MANUAL AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OWNER, INCLUDING SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, CLEARLY IDENTIFIED REQUIRED ROUTINE MAINTENANCE ACTIONS, AND NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY PER FBC 13-413.1.ABC.2.2.1. SUBMIT THREE COPIES OF MANUFACTURER'S OPERATING AND MAINTENANCE AND SPARE PARTS LIST FOR EACH PIECE OF EQUIPMENT

LIGHTING

SYMBOL	DESCRIPTION
XX	CEILING MOUNTED 2'x4' RECESSED LUMINAIRE NORMAL POWER
XX	CEILING MOUNTED 2'x2' RECESSED LUMINAIRE NORMAL POWER
XX	CEILING MOUNTED 2'x4' RECESSED LUMINAIRE EMERGENCY POWER
XX	CEILING MOUNTED 2'x2' RECESSED LUMINAIRE EMERGENCY POWER
XX	CEILING MOUNTED 1'x4' RECESSED LUMINAIRE NORMAL POWER
XX	CEILING MOUNTED 1'x4' RECESSED LUMINAIRE NORMAL POWER
XX	PENDANT MOUNTED 1'x4' RECESSED LUMINAIRE NORMAL POWER
XX	PENDANT MOUNTED 1'x4' RECESSED LUMINAIRE NORMAL POWER
XX	STRIP LUMINAIRE NORMAL POWER
XX	STRIP LUMINAIRE EMERGENCY POWER
XX	DOWNLIGHT LUMINAIRE NORMAL POWER
XX	DOWNLIGHT LUMINAIRE EMERGENCY POWER
XX	WALL MOUNTED LUMINAIRE NORMAL POWER
XX	WALL MOUNTED LUMINAIRE EMERGENCY POWER
XX	POLE MOUNTED LUMINAIRE NORMAL POWER
XX	POLE MOUNTED LUMINAIRE EMERGENCY POWER
XX	EMERGENCY BATTERY LIGHT FIXTURE
XX	EXIT LIGHT SINGLE FACE WITH DIRECTIONAL ARROW
XX	WALL MOUNTED EXIT LIGHT SINGLE FACE WITH DIRECTIONAL ARROW
XX	EXIT LIGHT DOUBLE FACE WITH DIRECTIONAL ARROW
XX	CEILING FAN

MISCELLANEOUS

SYMBOL	DESCRIPTION
XXXAF/NF NEMA	NON-FUSED DISCONNECT SWITCH FRAME SIZE / NON-FUSED / ENCLOSURE RATING
XXXAF/XXXAT NEMA	FUSED DISCONNECT SWITCH FRAME SIZE / FUSE SIZE / ENCLOSURE RATING
MCP/SIZE X NEMA	COMBINATION MAGNETIC MOTOR STARTER MCP SIZE / STARTER SIZE / ENCLOSURE RATING
	PANELBOARD, 480/277V
	PANELBOARD, 208/120V
PB	PULL BOX
HH	HAND HOLE
SPD	SURGE PROTECTION DEVICE
	ELECTRIC METER
T	TRANSFORMER
HP	MOTOR CONNECTION (HP DENOTES HORSEPOWER RATING)
EF	EXHAUST FAN
	PUSHBUTTON
ST	SHUNT TRIP

SECURITY

SYMBOL	DESCRIPTION
CR	CARD READER
DC	SECURITY DOOR CONTACT
DL	MAGNETIC DOOR LOCK
RTE	REQUEST TO EXIT
PTZ	PAN, TILT, ZOOM CAMERA

MISCELLANEOUS

SYMBOL	DESCRIPTION
	3/4" PLYWOOD TELEPHONE BACKBOARD
	CONCRETE ENCASED DUCTBANK
	HOMERUN CIRCUIT TO PANEL (1 HOT, 1 NEUTRAL, & 1 EQUIPMENT GROUND)
	HOMERUN CIRCUIT TO PANEL (2 HOTS, 1 NEUTRAL, & 1 EQUIPMENT GROUND)
	HOMERUN CIRCUIT TO PANEL (3 HOTS & 1 EQUIPMENT GROUND)
	HOMERUN CIRCUIT TO PANEL (3 HOTS, 1 SHARED NEUTRAL, & 1 EQUIPMENT GROUND)
	CONDUIT CONCEALED IN CEILING OR WALL
	CONDUIT CONCEALED UNDERGROUND OR UNDER FLOOR
	CONDUIT EXPOSED ON SURFACE
UP	CONDUIT TURNING UP
DOWN	CONDUIT TURNING DOWN
	CONDUIT STUB
	CONDUIT CONTINUED
	FLEXIBLE CONDUIT
	GROUND ROD
LV	LV (DC) WIRING

LIGHTNING PROTECTION SYSTEM

SYMBOL	DESCRIPTION
CI	CLASS I MAIN CONDUCTOR CABLE
	TEE SPLICE
	BONDING PLATE
	PIPE CLAMP FOR PLUMBING VENT THRU ROOF
	AIR TERMINATION DEVICE
	GROUND TERMINAL
	BONDING CONDUCTOR
DN	DOWN CONDUCTOR
G	COUNTERPOISE CONDUCTOR

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTION
FLA	FULL LOAD AMPERES
G, GND	GROUND
GRC	GALVANIZED RIGID METAL CONDUIT
HOA	HAND-OFF-AUTO SWITCH
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HZ	HERTZ
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERES
KW	KILOWATT
LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
LRA	LOCK ROTOR AMPERES
MC	METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTION
MLO	MAIN LUGS ONLY
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO	NORMALLY OPEN
QTY	QUANTITY

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTION
PB	PUSH BUTTON, PANIC BUTTON, OR PULLBOX
PNL	PANEL
PWR	POWER
RMC	RIGID METAL CONDUIT
RNC	RIGID NON-METALLIC CONDUIT
RTS	REMOTE TEST STATION
SP	SPARE
ST	SHUNT-TRIP
SW	SWITCH
SYM	SYMMETRICAL
TEL	TELEPHONE
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
V	VOLT
VA	VOLT-AMPERE
W	WATT
WP	WEATHERPROOF
XFMR	TRANSFORMER
1PH	SINGLE PHASE
1P	SINGLE POLE
2/C	TWO CONDUCTOR
3/C	THREE CONDUCTOR
3PH	THREE PHASE
4/C	FOUR CONDUCTOR
4W	FOUR WIRE

POWER COMPANY REQUIREMENTS

1) CONTRACTOR SHALL COORDINATE WITH POWER COMPANY AND SHALL FOLLOW REQUIREMENTS FOR ELECTRIC AND METER INSTALLATIONS PRIOR TO COMMENCING THE ELECTRICAL WORK. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL EQUIPMENT AND COMPONENTS AS NECESSARY FOR COMPLETE INSTALLATIONS TO DELIVER ELECTRICAL SERVICE TO THE FACILITY.

2) SERVICE PAD MOUNTED TRANSFORMER AND PRIMARY DISTRIBUTION WILL BE PROVIDED BY POWER COMPANY. CONTRACTOR SHALL PROVIDE CONCRETE PAD, METER ENCLOSURE, AND SECONDARY ENTRANCE CONDUCTORS AND CONDUIT. PROVIDE GROUNDING OF TRANSFORMER IN ACCORDANCE WITH POWER COMPANY REQUIREMENTS.

3) SERVICE ENTRANCE CONDUCTORS AND CONDUIT SHALL BE INSTALLED UNDER NOT LESS THAN 2" OF CONCRETE BENEATH THE BUILDING OR SHALL BE INSTALLED UNDER NOT LESS THAN 18" OF EACH BENEATH THE BUILDING. DO NOT ROUTE CONDUIT UNDERNEATH STAIRWAYS OR ELEVATORS.

4) CONTRACTOR SHALL ANTICIPATE IN PAYING FOR THE POWER COMPANY FOR THEIR ELECTRICAL WORK IN ASSOCIATED WITH THIS PROJECT.

5) CONTRACTOR SHALL COORDINATE FINAL LOCATION OF UTILITY TRANSFORMER WITH CIVIL DRAWINGS AND SITE VISIT PRIOR TO BID.

SHEEET INDEX

NUMBER	DRAWING TITLE
E-0.01	ELECTRICAL LEGEND & GENERAL NOTES
E-0.02	ELECTRICAL SPECIFICATIONS
E-1.01	POWER PLAN
E-2.01	LIGHTING PLAN
E-2.11	LIGHTING PHOTOMETRIC PLAN
E-3.01	RISER DIAGRAM
E-4.01	PANEL SCHEDULES

NOTE: SOME SYMBOLS OR ABBREVIATIONS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT.

ENCARN ENGINEERING, LLC

PERMIT SUBMITTAL

ERIC ENCARNACION LICENSE No. 85701 STATE OF FLORIDA PROFESSIONAL ENGINEER

WCGArchitecture
AA26004016 • 7416 halteras drive • hudson, florida 34667 • 727.534.5091

Revisions

Rountree - Moore KIA
Service Department Addition
2528 W. US Highway 90 - Lake City, Florida 32055

ELECTRICAL LEGEND & GENERAL NOTES

Project number	2022.01
Date	October 20, 2022

E - 0.01

DIVISION 26 SPECIFICATIONS:

SECTION 26 01 00 – BASIC ELECTRICAL REQUIREMENTS

1. THE WORK PROVIDED UNDER THIS DIVISION SHALL INCLUDE ALL LABOR, MATERIALS, PERMITS, INSPECTIONS AND REINSPECTION FEES, TOOLS, EQUIPMENT, TRANSPORTATION, INSURANCE, TEMPORARY PROTECTION, TEMPORARY LIGHTING, SUPERVISION AND INCIDENTAL ITEMS NECESSARY TO MAKE READY FOR USE A COMPLETE ELECTRICAL SYSTEM REQUIRED BY THE CONTRACT DOCUMENTS. PROVIDE AND PLACE IN SATISFACTORY CONDITION ALL MATERIALS NECESSARY FOR THE COMPLETE ELECTRICAL SYSTEM.

2. COORDINATE FINAL EQUIPMENT LOCATIONS WITH GOVERNING ARCHITECTURAL DRAWINGS. LOCATIONS OF CONDUIT AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE THE WORK WITH INTERFERENCES ANTICIPATED AND ENCOUNTERED. DETERMINE THE EXACT ROUTING AND LOCATION OF ALL SYSTEMS PRIOR TO FABRICATION OR INSTALLATION.

3. MATERIALS SHALL BE NEW AND SHALL BEAR A UL LABEL. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE CODES, LOCAL AND STATE ORDINANCES, AND INDUSTRY STANDARDS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

NFPA 70: NATIONAL ELECTRICAL CODE
NFPA 101: LIFE SAFETY CODE
INTERNATIONAL BUILDING CODE
UNIFORM CONSTRUCTION CODE, WITH AMMENDMENTS
FLORIDA BUILDING CODE

4. ELECTRICAL RACEWAYS PASSING THROUGH FIRE PARTITIONS, FIRE WALLS, OR FLOORS SHALL HAVE A FIRE STOP INSTALLED PROVIDING AN EFFECTIVE BARRIER AGAINST THE SPREAD OF FIRE, SMOKE, AND GASES, MAINTAINING THE REQUIRED RATING.

5. COORDINATE WITH ALL TRADES, AND PROVIDE TEMPORARY POWER FOR ALL TRADES.

6. GIVE ALL NOTICES, FILE ALL PLANS, PAY ALL FEES, OBTAIN ALL PERMITS AND APPROVALS FROM AUTHORITIES HAVING JURISDICTION. INCLUDE ALL FEES IN THE BID PRICE.

7. THE CONTRACT DRAWINGS ARE DIAGRAMMATIC ONLY INTENDING TO SHOW GENERAL RUNS AND LOCATIONS OF CONDUIT AND EQUIPMENT, AND NOT NECESSARILY SHOWING ALL REQUIRED OFFSETS, DETAILS AND ACCESSORIES AND EQUIPMENT TO BE CONNECTED.

8. CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES FOUND DURING CONSTRUCTION OF THE PROJECT AND SHALL NOT PROCEED WITH THAT PORTION OF THE PROJECT UNTIL A WRITTEN DEFINITIVE STATEMENT IS RECEIVED PROVIDING CLEAR DIRECTION. IF A CONFLICT EXISTS BETWEEN THE CONTRACT DOCUMENTS AND ANY APPLICABLE CODE OR STANDARD, THE MOST STRINGENT REQUIREMENT SHALL BE INCLUDED FOR THIS PROJECT.

9. WORKING CLEARANCES: WORKING CLEARANCES ABOUT ELECTRICAL EQUIPMENT SHALL BE AS REFERENCED NEC 110-26, AND SHALL INCLUDE NEW EQUIPMENT INSTALLED IN EXISTING CEILING SPACES.

10. THE PROJECT WILL BE CONSTRUCTED IN PHASES. PHASING SHALL BE PER THE ARCHITECT.

11. PROVIDE SHOP DRAWINGS FOR PANEL BOARDS, TRANSFORMERS, CONDUIT, WIRE AND LIGHTING FIXTURES.

12. ALL LOW VOLTAGE (600V AND BELOW) EQUIPMENT SHALL BE FIELD TESTED PER NETA STANDARDS.

SECTION 26 05 19 – LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

1. CONDUCTORS SHALL BE COPPER TYPE AND UTILIZE THHN/THWN-2 INSULATION FOR BRANCH CIRCUITS AND THHN/THWN-2 OR XHHW-2 INSULATION FOR FEEDERS. MINIMUM WIRE SIZE SHALL BE #12 AWG.

2. CONDUCTORS SIZE #10 AWG AND SMALLER SHALL BE SOLID TYPE. CONDUCTORS SIZE #8 AWG AND LARGER SHALL BE STRANDED TYPE.

3. BRANCH CIRCUIT HOMERUNS OVER 100-FEET IN LENGTH SHALL BE #10 AWG MINIMUM ON 120/208-VOLT SYSTEMS. BRANCH CIRCUIT HOMERUNS OVER 200-FEET IN LENGTH SHALL BE #10 AWG MINIMUM ON 277/480-VOLT SYSTEMS. BRANCH CIRCUIT HOMERUNS OVER 250-FEET IN LENGTH SHALL BE #8 AWG MINIMUM ON 120/208-VOLT SYSTEMS. BRANCH CIRCUIT HOMERUNS OVER 350-FEET IN LENGTH SHALL BE #8 AWG MINIMUM ON 277/480-VOLT SYSTEMS.

4. FOR SINGLE PHASE CIRCUITS, UNLESS NOTED OTHERWISE, SHALL BE 2#12, 1#12 GND IN 3/4" CONDUIT. FOR THREE PHASE CIRCUITS, UNLESS NOTED OTHERWISE, NEW WIRING INDICATED SHALL BE 3#12, 1#12 GND IN 3/4" CONDUIT.

SECTION 26 05 26 – GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1. PROVIDE A GROUNDING ELECTRODE SYSTEM PER NEC ARTICLE 250.

2. PROVIDE A GROUND FIELD TO BE UTILIZED AS A GROUNDING ELECTRODE, CONSISTING OF THREE 10-FOOT LONG, VERTICALLY DRIVEN GROUND RODS ARRANGED IN A TRIANGULAR PATTERN SPACED 20-FEET APART. ADDITIONAL GROUND RODS SHALL BE ADDED AS NECESSARY TO ACHIEVE AN ELECTRODE RESISTANCE OF 10 OHMS MAXIMUM. GROUND RODS SHALL BE COPPERCLAD STEEL, 5/8" DIAMETER BY 10' LONG.

3. THE BUILDING'S MAIN METALLIC UNDERGROUND WATER PIPING SHALL BE UTILIZED AS A GROUNDING ELECTRODE, PROVIDED THE METAL PIPE IS INSTALLED IN DIRECT CONTACT WITH THE EARTH FOR A MINIMUM OF 10-FEET. BOND TO THE MAIN METALLIC WATER SERVICE WITHIN 5-FEET OF THE ENTRANCE OF THE PIPE INTO THE BUILDING.

4. THE BUILDING STEEL SHALL BE UTILIZED AS A GROUNDING ELECTRODE, PROVIDED THE STEEL IS IN DIRECT CONTACT WITH THE EARTH OR IS OTHERWISE EFFECTIVELY GROUNDED. IN CONCRETE BUILDINGS, UTILIZE THE REINFORCING BARS IN THE CONCRETE.

5. ALL RACEWAYS SHALL HAVE AN INSULATED COPPER SYSTEM GROUND CONDUCTOR RUN THROUGHOUT ITS ENTIRE LENGTH.

SECTION 26 05 33 – RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

1. PROVIDE ALL SUPPORTS, HANGERS AND INSERTS REQUIRED TO MOUNT CONDUIT, PULLBOXES AND OTHER EQUIPMENT PROVIDED UNDER THIS DIVISION, IN ACCORDANCE WITH NEC. RACEWAYS SHALL BE SUPPORTED FROM THE STRUCTURE. BOXES NOR RACEWAYS SHALL BE SUPPORTED OR FASTENED TO CEILING SUSPENSION WIRES OR TO PORTIONS OF A SUSPENDED CEILING.

2. RACEWAYS FOR INTERIOR APPLICATIONS SHALL BE ELECTRICAL METALLIC TUBING (EMT), OR FLEXIBLE METAL CONDUIT, SUBJECT TO THE RESTRICTIONS OF NEC. EMT SHALL NOT BE USED IN CONCRETE CONSTRUCTION OR WHERE SUBJECT TO PHYSICAL DAMAGE.

3. RACEWAYS FOR EXTERIOR ABOVE-GRADE APPLICATIONS SHALL BE INTERMEDIATE METAL CONDUIT (IMC) (OR LIQUID-TIGHT FLEXIBLE METAL CONDUIT WHERE APPLICABLE).

4. FLEXIBLE METAL CONDUIT SHALL BE USED ONLY FOR CONNECTIONS TO ROTATING EQUIPMENT AND TRANSFORMERS. MAXIMUM LENGTH OF A RUN OF FLEXIBLE METAL CONDUIT SHALL BE 5'-0".

5. RACEWAYS FOR ALL BELOW-GRADE APPLICATIONS SHALL BE SCHEDULE 40 PVC, UNLESS SPECIFICALLY INDICATED OTHERWISE.

6. DIRECT BURIED UNDERGROUND CONDUIT SHALL HAVE A MINIMUM COVER OF TWO FEET.

7. WIREWAYS SHALL BE SIZED AS REQUIRED, AND SHALL BE AS MANUFACTURED BY HOFFMAN ENGINEERING COMPANY, SQUARE D, OR STEEL CITY.

8. NYLON PULLSTRINGS SHALL BE PROVIDED IN ALL EMPTY RACEWAYS.

9. BRANCH CIRCUIT AND FEEDER RACEWAYS SHALL HAVE A COPPER SYSTEM GROUND CONDUCTOR WITHIN THE CONDUIT THROUGHOUT THE ENTIRE LENGTH OF THE RUN. ALL CONDUIT SHALL BE ELECTRICALLY CONTINUOUS TO ESTABLISH REDUNDANT GROUNDING.

10. EXPANSION FITTINGS SHALL BE USED WHERE RACEWAYS PASS THROUGH BUILDING EXPANSION JOINTS. FITTINGS SHALL BE WEATHERPROOF TELESCOPIC TYPE, AND SHALL PERMIT A MINIMUM MOVEMENT OF 4".

11. FITTINGS FOR EMT SHALL BE STEEL, GLAND COMPRESSION TYPE OR SET SCREW TYPE, WITH INSULATED THROAT.

12. FITTINGS FOR RIGID METAL CONDUIT SHALL BE CUT GROOVE STEEL. CAST FITTINGS ARE NOT ACCEPTABLE.

13. END BUSHINGS WITH INSULATED THROATS SHALL BE PROVIDED ON CONDUIT STUB-OUTS ABOVE ACCESSIBLE CEILINGS. CONNECTORS WITH INSULATED THROATS SHALL BE PROVIDED FOR ALL CONDUITS AT THEIR TERMINATION INTO ALL EQUIPMENT AND/OR DEVICES.

15. MINIMUM CONDUIT SIZE SHALL BE 1/2".

16. RACEWAYS SHALL BE ROUTED CONCEALED UNLESS NOTED OTHERWISE.

17. RACEWAY SYSTEMS SHALL BE PROVIDED FOR TELEPHONE.

18. MC SHALL ONLY BE USED ABOVE ACOUSTICAL OR DRYWALL CEILINGS OR IN CONCEALED WALLS. WHEN USED, IT SHALL BE TIED TIGHTLY TO THE BAR JOISTS EVERY 4 FEET (OR PER LOCAL CODE REQUIREMENT, WHICHEVER IS LESS). MC SHALL ONLY BE USED WHERE PERMITTED BY CODE. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO VERIFY CODE AT BID TIME. MC SHALL NOT BE USED IN OPEN DECK AREAS, WHERE IT IS VISIBLE.

19. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS. CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.

20. SWITCH, WALL RECEPTACLE, TELEPHONE AND OTHER WALL OUTLET BOXES IN DRYWALL SHALL BE 4" SQUARE BY 1-1/2" DEEP.

21. CEILING OUTLET BOXES SHALL BE 4" OCTOGONAL OR 4" SQUARE BY 1-1/2" DEEP, OR LARGER AS REQUIRED FOR NUMBER AND SIZE OF CONDUCTORS AND ARRANGEMENT, SIZE AND NUMBER OF CONDUITS ENTERING.

22. FLOOR OUTLET BOXES IN CONCRETE SHALL BE MALLEABLE CAST IRON TYPE WHERE INSTALLED IN SLAB ON GRADE. IN CONCRETE SLABS ABOVE GRADE, BOXES SHALL BE EITHER STAMPED STEEL OR MALLEABLE CAST IRON.

SECTION 26 05 53 – IDENTIFICATION OF ELECTRICAL SYSTEMS

13. A NEATLY TYPED PANEL SCHEDULE SHALL ACCOMPANY EACH NEW OR REWORKED PANEL AT THE COMPLETION OF WORK.

14. PROVIDE ENGRAVED LAMINATED PLASTIC NAMEPLATES TO IDENTIFY PANELBOARDS, SWITCHBOARDS, SAFETY SWITCHES, AND TRANSFORMERS. NAMEPLATES SHALL HAVE 1/4" HIGH, RECESSED LETTERS.

15. NAMEPLATES FOR EQUIPMENT ON NORMAL POWER SHALL BE BLACK IN COLOR WITH WHITE RECESSED LETTERS. NAMEPLATES FOR EQUIPMENT ON EMERGENCY POWER SHALL BE RED IN COLOR WITH WHITE RECESSED LETTERS.

16. NAMEPLATES SHALL INCLUDE EQUIPMENT DESIGNATION, VOLTAGE AND PHASE OF OPERATING SYSTEM, AND THE DESIGNATION OF THE EQUIPMENT THE ITEM IS FED FROM.

SECTION 26 08 00 – COMMISSIONING OF ELECTRICAL SYSTEMS

1. THE CONTRACTOR SHALL DEMONSTRATE TO THE REGISTERED DESIGN PROFESSIONAL REPRESENTATIVE BY WAY OF FUNCTIONAL PERFORMANCE TESTING OF ALL AUTOMATIC LIGHTING SYSTEMS. DEMONSTRATE THE PERFORMANCE OF THE SYSTEMS DESCRIBED HERE IN, INCLUDING: CALIBRATION OF CONTROL HARDWARE AND SOFTWARE, ADJUSTMENT AND PROGRAMMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. DEMONSTRATED THE PLACEMENT, SENSITIVITY AND TIME-OUT ADJUSTMENT FOR OCCUPANT SENSORS. DEMONSTRATE THE TIME SWITCHES AND PROGRAMMABLE SCHEDULE CONTROLS ARE PROGRAMMED TO TURN THE LIGHTS OFF. DEMONSTRATE THE PLACEMENT AND ADJUSTMENT OF PHOTOSENSORS AND DAYLIGHTING CONTROLS ARE AS SPECIFIED.

SECTION 26 24 00 – SWITCHBOARDS AND PANELBOARDS

1. DISTRIBUTION, LIGHTING AND RECEPTACLE PANELBOARDS SHALL BE OF DEADFRONT CONSTRUCTION, UTILIZING THERMAL MAGNETIC BOLT-ON CIRCUIT BREAKERS.

2. PANELBOARD CABINETS SHALL HAVE A SYSTEM GROUNDING BAR BONDED TO THE CABINET FOR CONNECTION OF SYSTEM GROUNDING CONDUCTORS. THIS BAR SHALL BE MECHANICALLY AND ELECTRICALLY ISOLATED FROM THE NEUTRAL BAR, UNLESS PANEL IS TO BE USED AS SERVICE EQUIPMENT.

3. MOUNTING HEIGHT SHALL BE 78" AFF TO TOP OF PANEL TRIM.

4. ALL PANELBOARDS SHALL BE BY ONE OF THE FOLLOWING MANUFACTURERS: SQUARE-D, EATON, SIEMENS, OR GENERAL ELECTRIC.

SECTION 26 27 26 – WIRING DEVICES

1. CONVENIENCE RECEPTACLES: PROVIDE 20-AMPERE PREMIUM SPECIFICATION GRADE SINGLE OR DUPLEX RECEPTACLES WHERE INDICATED ON DRAWINGS. MOUNTING HEIGHT SHALL BE PER NOTES ON DRAWINGS.

2. RECEPTACLES SHALL BE 2-POLE, 3-WIRE GROUNDING TYPE, WITH GREEN HEXAGONAL EQUIPMENT GROUNDING SCREW, GROUND TERMINALS AND POLES INTERNALLY CONNECTED TO MOUNTING YOKE, WITH METAL PLASTER EARS, SIDE WIRING, NEMA TYPE 5-20R UNLESS OTHERWISE NOTED. COLOR SHALL BE DRAWINGS.

3. RECEPTACLES SHALL HAVE HEAVY DUTY NYLON FACE AND WRAPAROUND MOUNTING STRAP, UTILIZING HEAVY-GAUGE BRASS GROUND CONTACTS RIVETED TO STRAP. RECEPTACLES SHALL INCLUDE AUTOMATIC SELF-GROUNDING SPRING AND T-SLOT ONE-PIECE COPPER ALLOY CONTACT WIPES WHICH INTERFACE WITH PLUG BLADES INSERTED AT THREE POINTS.

4. GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLES: PROVIDE COMMERCIAL SPECIFICATION GRADE DUPLEX, GROUNDING TYPE, UL RATED CLASS A, GROUP 1, 20-AMPERE, 125-VOLTS, WITH SOLID STATE GROUND FAULT SENSING AND SIGNALING, WITH 5 MILLIAMPERE GROUND FAULT TRIP LEVEL. ALL EXTERIOR RECEPTACLES SHALL BE DUPLEX GFCI WEATHERPROOF TYPE.

5. TOGGLE SWITCHES: PROVIDE SPECIFICATION GRADE, FAST-MAKE POSITIVE-BREAK, FLUSH SINGLE-POLE THREE AND FOUR WAY, SILENT OPERATION TOGGLE SWITCHES. SWITCHES SHALL BE 20-AMPERE, 120- OR 277-VOLT AS REQUIRED, WITH MOUNTING YOKE INSULATED FROM MECHANISM, EQUIPPED WITH PLASTER EARS, AND SIDE-WIRED SCREW TERMINALS. COLOR SHALL BE WHITE UNLESS OTHERWISE NOTED. SWITCHES SHALL BE MOUNTED AT 48" AFF, MEASURED TO THE TOP OF THE DEVICE.

6. MOTOR-RATED SWITCHES: PROVIDE FRACTIONAL HORSEPOWER SWITCH WITH MELTING ALLOY TYPE OVERLOAD RELAY, WITH NUMBER OF POLES TO COORDINATE WITH EQUIPMENT BEING CONTROLLED.

7. ACCEPTABLE MANUFACTURERS FOR WIRING DEVICES ARE LEVITON, HUBBELL, OR EATON.

SECTION 26 27 28 – DISCONNECT SWITCHES

1. PROVIDE SAFETY SWITCHES FOR DISCONNECTING MEANS FOR ALL EQUIPMENT. SAFETY SWITCHES SHALL BE TYPE "A," QUICK-MAKE, QUICK-BREAK, HEAVY-DUTY CONSTRUCTION. SAFETY SWITCHES SHALL HAVE INTERLOCKING DOORS. CABINETS SHALL BE BONDERIZED AND FINISHED IN GREY ENAMEL. PROVIDE NEMA TYPE 3R ENCLOSURES IN AREAS EXPOSED TO THE WEATHER OR IN WET AREAS.

2. EQUIPMENT SHALL BE PROVIDED WITH THE PROPER SIZE/RATING SAFETY SWITCH, WHETHER INDICATED ON THE DRAWINGS OR NOT, TO COMPLY WITH NEC. INSTALL AND CONNECT SAFETY SWITCHES FURNISHED BY OTHER TRADES.

3. SAFETY SWITCHES SHALL BE MANUFACTURED BY SQUARE D, GENERAL ELECTRIC, SIEMENS, OR EATON.

SECTION 26 50 00 – LIGHTING

1. LIGHT FIXTURES PROVIDED UNDER THIS DIVISION SHALL BE PROVIDED COMPLETE WITH LAMPS AND ALL NECESSARY TRIM AND MOUNTING HARDWARE, AND INSTALLED AS SHOWN ON THE DRAWINGS. LIGHT FIXTURES SHALL BE NEATLY AND FIRMLY MOUNTED, USING STANDARD SUPPORTS FOR OUTLETS AND FIXTURES. LAMPS SHALL BE INCLUDED IN THE SYSTEM GUARANTEE FOR A PERIOD OF 90 DAYS AFTER FINAL ACCEPTANCE OF THE BUILDING.

2. THE CONTRACTOR SHALL PROVIDE FIXTURE TRIMS AND SUPPORTS AS REQUIRED TO MATCH TYPE OF CEILING SYSTEM. NO CEILING FIXTURE SHALL BE ORDERED UNTIL THE CEILING SYSTEM INSTALLER HAS GIVEN WRITTEN ACCEPTANCE OF THE METHOD AND LOCATION OF FIXTURE HANGING AND FIXTURE TYPE.

3. LED FIXTURE DRIVERS SHALL BE ELECTRONIC TYPE, HIGH POWER FACTOR, COVERED BY THREE YEAR WARRANTY AGAINST DEFECTS. EACH DRIVER SHALL BE RATED FOR VOLTAGE SYSTEM TO WHICH APPLIED. DRIVER SHALL INCORPORATE THE FOLLOWING FEATURES AT A MINIMUM:

- SHALL BE CONSTANT CURRENT, RATED AT 95% POWER FACTOR.
- SHALL BE MINIMUM "A" SOUND RATED.
- CASE TEMPERATURE SHALL NOT EXCEED 90°C.
- SHALL CONTAIN MOV TRANSIENT SURGE PROTECTION.
- SHALL NOT CAUSE RFI INTERFERENCE.
- SHALL HAVE TOTAL HARMONIC DISTORTION OF LESS THAN 15%

4. COORDINATE ALL FIXTURES WITH PIPING AND DUCTWORK PRIOR TO INSTALLATION AND RELOCATE FIXTURES AS REQUIRED TO PROVIDE PROPER ILLUMINATION. COORDINATE SIGNIFICANT CHANGES TO ENGINEER PRIOR TO INSTALLATION.

SECTION 28 46 00 – FIRE DETECTION AND ALARM

1. PROVIDE A COMPLETE U.L. LISTED FIRE ALARM PER NFPA 72 AND ADA.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING BATTERY CALCULATIONS AND SIGNED AND SEALED SHOP DRAWINGS (IF REQUIRED BY LOCAL AUTHORITY AUTHORITY HAVING JURISDICTION) TO SUBMIT FOR PERMIT. FIRE ALARM SYSTEM DESIGN SHALL BE IN COMPLIANCE WITH ALL GOVERNING AGENCY CRITERIA.

3. SHOP DRAWINGS SHALL INCLUDE 1/8-INCH SCALE DRAWINGS AND PRODUCT DATA. PLANS SHALL SHOW POINT-TO-POINT CONNECTIONS, ROUTING OF RACEWAYS, CONNECTIONS, COMPONENTS, AND CONDUCTOR QUANTITIES AND TYPES. DRAWINGS SHALL BE CAD-GENERATED. PRODUCT DATA SHALL INCLUDE DATA ON EACH SYSTEM COMPONENT, LISTING AGENCY FILE, WIRING DIAGRAMS, INSTALLATION INFORMATION, BATTERY CALCULATIONS, AND CIRCUIT LOAD AND VOLTAGE DROP CALCULATIONS.

4. SHOULD AN EXISTING FIRE ALARM EXISTS, NEW DEVICES TO BE TIED INTO EXISTING SYSTEM SHALL MATCH EXISTING DEVICES, UNLESS OTHERWISE NOTED BY OWNER. CONTRACTOR SHALL FIELD VERIFY EXISTING FIRE ALARM SYSTEM SO THAT ADDITIONAL DEVICES WILL NOT EFFECT THE EXISTING SYSTEM'S PERFORMANCE & QUALITY.

5. PROVIDE A DUCT DETECTOR IN THE SUPPLY DUCTWORK OF EACH AIR HANDLING UNIT RATED GREATER THAN 2000 CFM, AND IN THE RETURN DUCTWORK OF SAME UNITS WHERE SHOWN BY MECHANICAL DRAWINGS. DUCT DETECTORS SHALL HOUSE A PHOTOELECTRIC SMOKE DETECTOR, A STANDARD RELAY OR ISOLATOR DETECTOR MOUNTING BASE, AND SHALL BE PROVIDED WITH REMOTE ALARM LED INDICATORS AND REMOTE TEST STATIONS.

6. VISUAL ALARMS (STROBES) SHALL BE RATED 75 CANDELA UNLESS INDICATED OTHERWISE ON PLANS, AND SHALL BE SYNCHRONIZED. AUDIBLE ALARMS (HORNS) AND AUDIO-VISUAL ALARMS SHALL BE SELECTABLE FOR STEADY OR TEMPORAL OUTPUT, AND SELECTABLE FOR HIGH OR LOW dBA OUTPUT.

7. WALL MOUNTED VISUAL APPLIANCES SHALL BE MOUNTED AT 80 INCHES ABOVE FINISHED FLOOR, MEASURED TO THE BOTTOM OF THE DEVICE.

8. MANUAL INITIATING DEVICES SHALL BE MOUNTED AT 48" ABOVE FINISHED FLOOR, MEASURED TO THE TOP OF THE DEVICE.

ENCARN
ENGINEERING, LLC

PERMIT SUBMITTAL

ERIC ENCARNACION
LICENSE
No. 85701
STATE OF FLORIDA
PROFESSIONAL ENGINEER

WCGArchitecture
AA26004016 • 7416 hatteras drive • hudson, florida 34667 • 727.534.5091

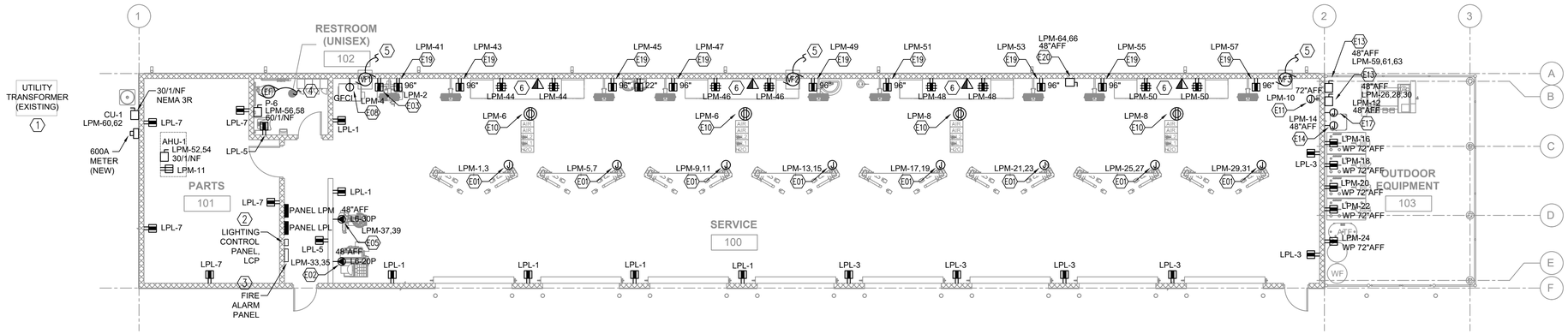
Revisions

Rountree - Moore KIA
Service Department Addition
2528 W. US Highway 90 - Lake City, Florida 32055

ELECTRICAL SPECIFICATIONS

Project number	2022.01
Date	October 20, 2022

E - 0.02



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

ELECTRICAL KEYED NOTES

1. COORDINATE EXACT LOCATION OF UTILITY TRANSFORMER PRIOR TO BID.
2. OUTDOOR LIGHTING FIXTURES TO BE WIRED INTO ASTRONOMICAL TIMECLOCK PANEL, LCP - INTERMATIC ET8485CR OR EQUAL. REFER TO POWER DRAWING FOR LOCATION OF LCP PANEL.
3. FIRE ALARM CONTRACTOR SHALL SUBMIT FIRE ALARM DRAWINGS FOR PERMIT. REFER TO ELECTRICAL SPECIFICATIONS ON DRAWING E0.02 FOR ADDITIONAL INFORMATION.
4. TIE EXHAUST FAN INTO RESTROOM LIGHTING CIRCUIT AND SWITCH. REFER TO LIGHTING PLAN FOR ADDITIONAL INFORMATION.
5. INTERLOCK VENTILATION FAN INTO SERVICE LIGHTING CIRCUIT, LPL-6, AND SWITCH. REFER TO LIGHTING PLAN FOR ADDITIONAL INFORMATION.
6. CONTRACTOR SHALL COORDINATE MOUNTING LOCATION OF QUADS AND DATA OUTLETS LOCATED ABOVE THE BENCH WITH BENCH SUPPLIER PRIOR TO INSTALL.

EQUIPMENT SCHEDULE

TAG	DESCRIPTION	HP	VOLTAGE	AMERAGE	PHASE	CONNECTION	MOUNTING	NOTES
E01	VEHICLE LIFT, 2-POST ABOVE GROUND, 10,000 LBS	2	208	5.9	1	JUNCTION BOX		2 ELECTRICAL CONNECTIONS NEED PER ROTARY SPEC. (POWER UNIT AND OVERHEAD LIMIT SWITCH)
E02	TIRE BALANCER	-	208	10	1	RECEPTACLE	48" AFF	NEMA L6-20P
E03	BRAKE LATHE, BENCH		115	10	1	RECEPTACLE	48" AFF	
E04	BRAKE LATHE, ON-CAR							
E05	TIRE CHANGER	-	208	20	1	RECEPTACLE	48" AFF	NEMA L6-30P
E06	TIRE RACK, MOBILE							
E07	FLOOR JACK							
E08	PARTS WASHER		120	20	1			WATER AND FLOOR DRAIN REQUIRED
E09	WORK BENCH							
E10	CORD REEL, OVERHEAD	-	120	-	1	RECEPTACLE	CEILING	
E11	OIL RECOVERY PUMP	-	115	10	1	RECEPTACLE	72" AFF	
E12	OIL RECEIVER							
E13	AIR COMPRESSOR	7.5	208	24.2	3	DISCONNECT	48" AFF	60A/3P/NF DISCONNECT NEMA 3R
E14	AIR DRYER	-	115	-	1	JUNCTION BOX	48" AFF	
E15	CONTAINMENT TANK, OIL PUMP	-	120	10	1	RECEPTACLE	72" AFF	
E16	CONTAINMENT TANK, BULK FLUID							
E17	24 HOUR 7 DAY TIMER FOR COMPRESSOR	-	120	10	1	JUNCTION BOX	48" AFF	
E18	WASTE OIL ANTIFREEZE OVERFILL ALARMS	-	120	10	1	RECEPTACLE	72" AFF	
E19	30" DIAMETER FAN	-	120	10	1	RECEPTACLE	96" AFF	
E20	BATTERY CHARGER	24	208	115	1	DISCONNECT	48" AFF	200/1/NF DISCONNECT

ENCARN ENGINEERING, LLC

PERMIT SUBMITTAL

ERIC ENCARNACION LICENSE No. 85701 STATE OF FLORIDA PROFESSIONAL ENGINEER

WCG Architecture
AA26004016 • 7416 Hatteras drive • hudson, florida 34667 • 727.534.5091

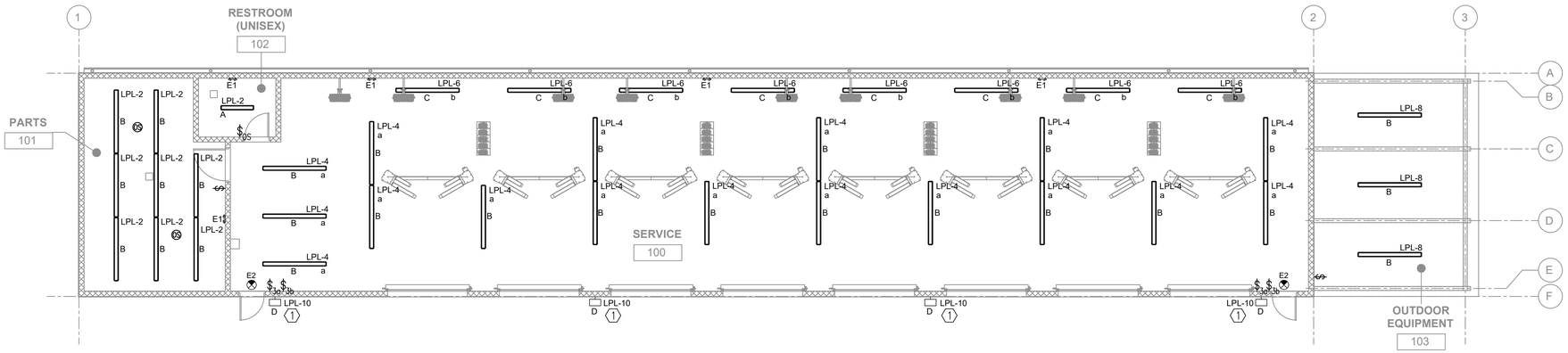
Revisions

Rountree - Moore KIA
Service Department Addition
2528 W. US Highway 90 - Lake City, Florida 32055

POWER PLAN

Project number 2022.01
Date October 20, 2022

E - 1.01



1 LIGHTING PLAN

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

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NO.	MOUNTING	VOLT	LAMP	DESCRIPTION	WATTS	REMARKS
A	METALUX	4VT2-LD5-4-DR-W-UNV-L840-CD1-WL-U	SURFACE	120-277	LED	4'-0" LENGTH LED STRIP FIXTURE 4000K, 4600 LUMENS	29.9	
B	METALUX	8VTS-LD5-9-DR-W-UNV-L840-CD1-WL-U	SURFACE	120-277	LED	8'-0" LENGTH LED STRIP FIXTURE 4000K, 8600 LUMENS	65.7	
C	METALUX	8VTS-LD5-9-DR-W-UNV-L840-CD1-WL-U	WALL	120-277	LED	8'-0" LENGTH LED TASK STRIP FIXTURE 4000K, 8600 LUMENS	65.7	
D	METALUX	AXCS4A	WALL	120-277	LED	EXTERIOR WALL PACK LED	43.7	
OH	DUAL-LITE	OCR-D-XX-06-03L	SURFACE	120-277	LED	EXTERIOR, WEATHERPROOF EMERGENCY FIXTURE WITH DUAL HEADS	6	
EX	DUAL-LITE	EVE-U-R-W-E-I	SURFACE	120-277	LED	SINGLE FACE LED EXIT SIGN WITH RED LETTERS W/ BATTERY PACK	2	
X	DUAL-LITE	HCX-U-R-W-03L	SURFACE	120-277	LED	SINGLE FACE LED EXIT SIGN WITH RED LETTERS, WHITE HOUSING, DUAL EMERGENCY HEADS AND REMOTE CAPABILITY	12	

NOTES:
1) LIGHTING DESIGN HAS BEEN BASED ON COOPER LIGHTING. CONTACT JEFFREY BUCHANAN - TAMPA BAY LIGHTING 813-451-2234.

GENERAL LIGHTING NOTES

1. ALL EXIT SIGNS AND EMERGENCY LIGHTS SHALL BE POWERED BY NEAREST UNSWITCHED LOCAL LIGHTING CIRCUIT.
2. MANUAL AND AUTOMATIC CONTROLS IN ALL SPACES SHALL MEET FBC ENERGY CONSERVATION SECTION C405.2.
3. PER FBC ENERGY CONSERVATION SECTION 408.3 A FUNCTIONAL TEST OF THE LIGHTING CONTROL SYSTEM WILL BE PERFORMED. TEST TO BE PERFORMED BY 3RD PARTY
4. FIELD COORDINATE FINAL PANEL LOCATIONS PREVENTING ANY OBSTRUCTIONS OF ANY PENETRATIONS.
5. BRANCH CIRCUIT CONDUCTORS AND FEEDERS ARE SIZED TO KEEP TOTAL VOLTAGE DROP BELOW 5% AS REQUIRED BY FBC 405.5.3.
6. PROVIDE DRAWING AND MANUALS TO THE OWNER PER FBC ENERGY CONSERVATION SECTION C405.5.4.
7. AREAS WITH OCCUPANCY (VACANCY) CONTROLS FOR LIGHTS MUST 1. AUTOMATICALLY TURN LIGHTS OFF WITHIN 20 MINUTES OF ALL OCCUPANTS LEAVING THE SPACE. 2. BE MANUAL ON OR CONTROLLED TO AUTOMATICALLY TURN LIGHTING ON TO NOT MORE THAN 50% POWER UNLESS THE EXCEPTION APPLIES. 3. SHALL INCORPORATE A MANUAL CONTROL TO ALLOW OCCUPANTS TO TURN LIGHTS OFF PER FBC ENERGY CONSERVATION SECTION C405.2.1.1.
8. OCCUPANCY SENSORS PROVIDING ILLUMINATION OF THE MEANS OF EGRESS MUST BE A FAIL SAFE DEVICE AND BE ACTIVATED UPON ACTIVATION OF BUILDING FIRE ALARM SYSTEM PER NFPA 101 7.8.1.2.2.

ELECTRICAL KEYED NOTES

1. OUTDOOR LIGHTING FIXTURE TO BE WIRED INTO ASTRONOMICAL TIMECLOCK PANEL, LCP - INTERMATIC ET8415CR OR EQUAL. REFER TO POWER DRAWING FOR LOCATION OF LCP PANEL.

ENCARN
ENGINEERING, LLC

PERMIT SUBMITTAL

ERIC ENCARNACION
LICENSE
No. 85701
STATE OF FLORIDA
PROFESSIONAL ENGINEER

WCG Architecture
AA26004016 • 7416 hatteras drive • hudson, florida 34667 • 727.534.5091

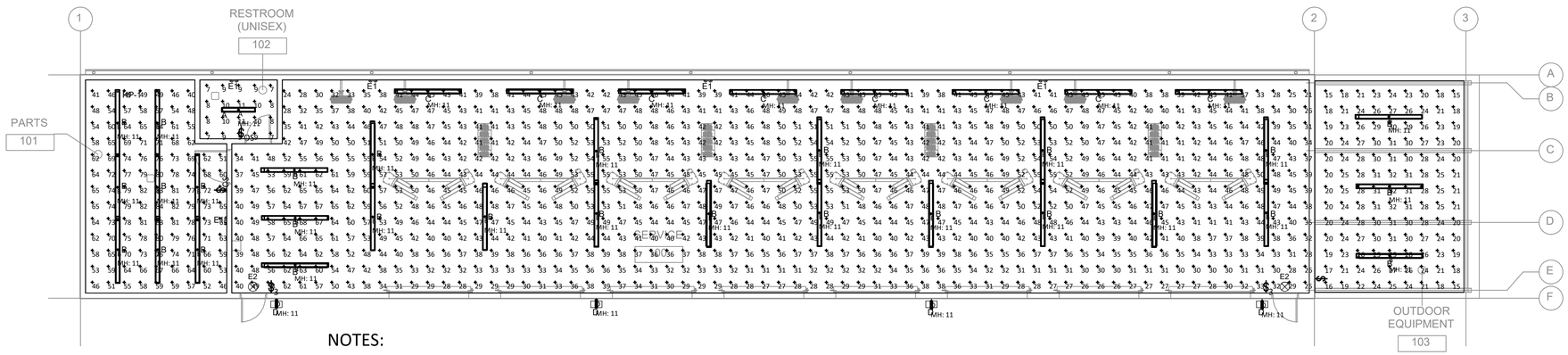
Revisions

Rountree - Moore KIA
Service Department Addition
2528 W. US Highway 90 - Lake City, Florida 32055

LIGHTING PLAN

Project number	2022.01
Date	October 20, 2022

E - 2.01



NOTES:

- All fixtures mounted at labeled heights

FIXTURE SCHEDULE								
Symbol	**Qty**	**Type**	**Fixture**	**Arrangement**	**LLF**	**Lamp Lumens**	**Fixture Lumens**	**Watts**
	4	D	AXCS4A	Single	0.912	N.A.	5520	43.7
	8	C	8VT2-LD5-9-DR-W-UNV-L840-CD1-WL-U	Single	0.950	N.A.	8665	65.7
	1	A	4VT2-LD5-4-DR-W-UNV-L840-CD1-WL-U	Single	0.950	N.A.	3963	29.9
	28	B	8VT2-LD5-9-DR-W-UNV-L840-CD1-WL-U	Single	0.950	N.A.	8665	65.7

CALCULATION SUMMARY										
Label	**Avg**	**Max**	**Min**	**Max/Min**	**Avg/Min**	**Units**	**CalcType**	**Grid Z**	**PtSpcLr**	**PtSpcTb**
Outdoor Equipment 103_Floor	24.56	32	15	2.13	1.64	Fc	Illuminance	0	2	2
Parts 101_Floor	65.90	84	40	2.10	1.65	Fc	Illuminance	0	2	2
RR 102_Floor	8.80	11	7	1.57	1.26	Fc	Illuminance	0	2	2
Service 100_Workplane	43.54	68	21	3.24	2.07	Fc	Illuminance	2.5	2	2

1 LIGHTING PHOTOMETRIC PLAN
SCALE: 1/8"=1'-0"

ENCARN
ENGINEERING, LLC

PERMIT SUBMITTAL

ERIC ENCARNACION
LICENSE
No. 85701
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

WCGArchitecture
AA26004016 • 7416 hatteras drive • hudson, florida 34667 • 727.534.5091

Revisions

Rountree - Moore KIA
Service Department Addition
2528 W. US Highway 90 - Lake City, Florida 32055

LIGHTING
PHOTOMETRIC
PLAN

Project number	2022.01
Date	October 20, 2022

E - 2.11

GENERAL ELECTRICAL NOTES

1) COORDINATE WITH PROPER TRADES PRIOR TO INSTALLATION TO AVOID CONFLICTS. CONTACT ENGINEER SHOULD ANY DISCREPANCIES ARISE.

2) ALL CONDUCTORS SHALL BE THHN/THWN COPPER.

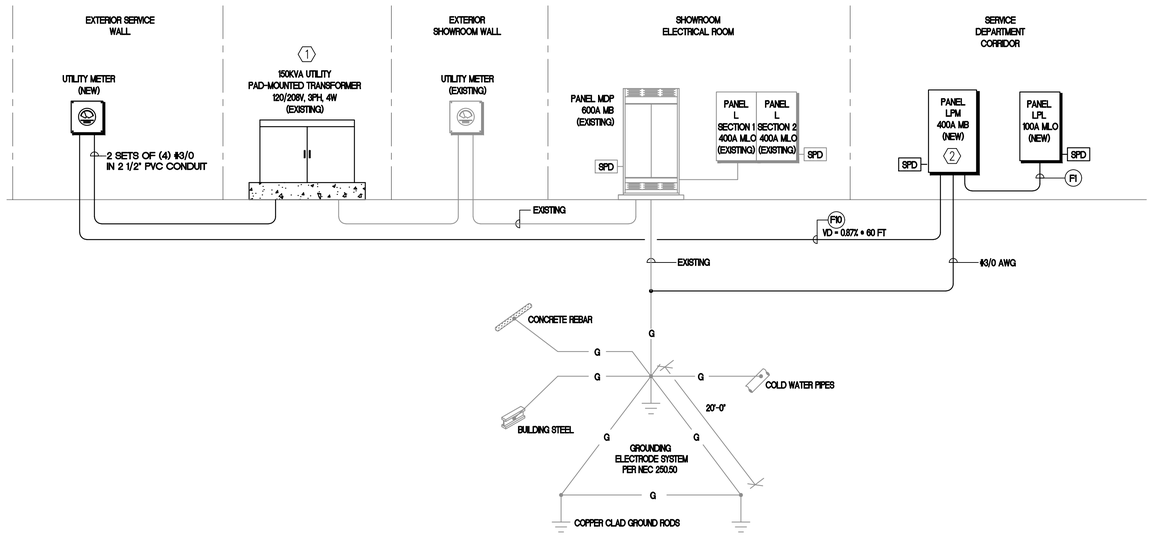
3) BRANCH CIRCUIT AND FEEDER CONDUCTORS ARE SIZED TO KEEP TOTAL VOLTAGE DROP BELOW 5% PER FBC 405.6.3.

4) PER NEC 408.4(B), ALL PANELS SHALL BE LABELED WITH THEIR SUPPLY SOURCE.

(#) ELECTRICAL KEYNOTES

1) EXISTING UTILITY TRANSFORMER, 120/208V, 3PH SECONDARY. CONTRACTOR SHALL TAP OFF OF SECONDARY OF TRANSFORMER AND PROVIDE LUG CONNECTIONS AS REQUIRED. REFER TO CIVIL DRAWINGS AND PERFORM SITE VISIT FOR EXACT LOCATION AND REQUIREMENTS PRIOR TO BID.

2) 400A, 120/208V, 3PH, 4W, SERVICE RATED, NEMA 1 POWER PANEL. CONTRACTOR SHALL LABEL PANEL AS PER NEC REQUIREMENTS.



COPPER FEEDER SCHEDULE

(USED FOR THIS SHEET ONLY) (USED FOR THIS SHEET ONLY)

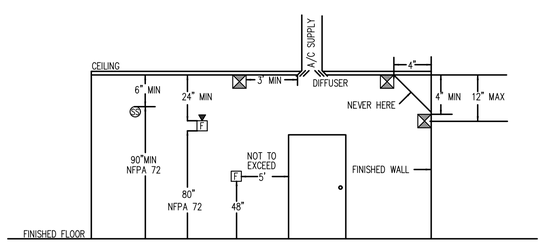
FEEDER TAG	FEEDER SIZE	RACEWAY	CIRCUIT BRKR	FEEDER TAG	FEEDER SIZE	RACEWAY	CIRCUIT BRKR
F1	(4) #2 + (1)#6GND	1 1/4"	100	F10	2 SETS OF (4) #3/0 + #1/0 SUPPLY SIDE GND	(2) 2 1/2"	400
F2	(4) #1/0 + (1)#6GND	2"	150	F11	2 SETS OF (4) #250 KCMIL	(2) 3"	600
F3	(4) #2/0 + (1)#6GND	2"	175	F12	3 SETS OF (4) #300 KCMIL + (1)#1/0GND	(3) 3"	800
F4	(4) #3/0 + (1)#6GND	2 1/2"	200	F13	3 SETS OF (4) #400 KCMIL + (1)#2/0GND	(3) 3 1/2"	1000
F5	(4) #4/0 + (1)#4GND	2 1/2"	225	F14	4 SETS OF (4) #350 KCMIL + (1)#3/0GND	(4) 3"	1200
F6	(4) #250 KCMIL + (1)#4GND	3"	250	F15	5 SETS OF (4) #500 KCMIL + (1)#4/0 GND	(5) 3 1/2"	1600
F7	(4) #350 KCMIL + (1)#4GND	3"	300	F16	6 SETS OF (4) #500 KCMIL + (1)#250 KCMIL GND	(6) 4"	2000
F8	(4) #500 KCMIL + (1)#3GND	4"	350	F17	8 SETS OF (4) #500 KCMIL + (1)#250 KCMIL GND	(12) 4"	3000
F9	2 SETS OF (4) #3/0 + (1)#3GND	2 1/2"	400	F18	12 SETS OF (4) #500 KCMIL	(12) 4"	4000

FAULT CURRENT STUDY -- CABLE IMPEDANCE VALUES BASED ON IEEE STD. 241-1990, TABLE 65.

PROJECT: Kia Service Department

SYSTEM VOLTAGE:	208	(WIRE TYPE CU=1)
ASSUMED BASE KVA:	100	(WIRE TYPE AL=2)
UTILITY COMPANY AFC:	12322	(FAULT CURRENT BASED ON UTILITY PROVIDED AVAILABLE FAULT CURRENT)
UTILITY COMPANY X/R RATIO:	7.50	(BASED ON 1.6% IMPEDANCE PROVIDED BY UTILITY)

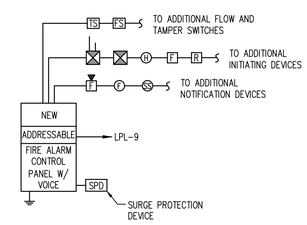
BUS (PANEL)	SOURCE AFC	SOURCE X/R	WIRE SIZE	WIRE TYPE	# OF RUNS	FEEDER LENGTH	BUS X/R	BUS AFC	SOURCE PUZ	SOURCE PUR	SOURCE PUX	CABLE BASE R OHMS	CABLE BASE XL OHMS	CABLE PUR	CABLE PUX	AT END OF FDR BUS PUR	AT END OF FDR BUS PUX	BUS PUZ
LPM	12,322	7.50	3/0	1	2	60	3.30	10,822	0.0225	0.0030	0.0223	0.064	0.032	0.0045	0.0022	0.0074	0.0245	0.0256
LPL	10,822	3.30	2	1	1	5	2.68	10,428	0.0256	0.0074	0.0245	0.162	0.034	0.0019	0.0004	0.0093	0.0249	0.0266



DEVICE MOUNTING HEIGHTS

FEET

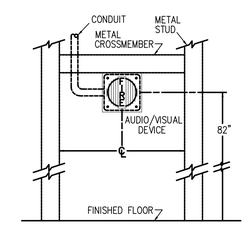
SCALE: N.T.S.



PARTIAL FIRE ALARM RISER

FEET

SCALE: N.T.S.



AUDIO/VISUAL MOUNTING DETAIL

FEET

SCALE: N.T.S.

ENCARN ENGINEERING, LLC

PERMIT SUBMITTAL

ERIC ENCARNACION LICENSE No. 85701 STATE OF FLORIDA PROFESSIONAL ENGINEER

WCGArchitecture

AA26004016 • 7416 hatteras drive • hudson, florida 34667 • 727.534.5091

Revisions

Rountree - Moore KIA

Service Department Addition

2528 W. US Highway 90 - Lake City, Florida 32055

RISER DIAGRAM

Project number	2022.01
Date	October 20, 2022

E - 3.01

Name: LPM

MAIN BREAKER: 400 AMPS 3 POLE
MAIN LUGS: AMPS
K.A.I.C. : AMPS
SURFACE MTD: X
FLUSH MTD:

3 **PHASE**
4 **WIRE**
X **208Y/120V**
480Y/277V
240/120V

Project Name: KIA SERVICE DEPT
Project Number: 22-028
Fed From: UTILITY TRANSFORMER
SERVICE RATED PANEL

NOTES	CKT NO	IDENTIFICATION	CODE	LOAD/PHASE (KVA) A	B	C	WIRE SIZE	CIRCUIT BREAKER TRIP	POLES	POLES	TRIP	WIRE SIZE	LOAD/PHASE (KVA) A	B	C	CODE	IDENTIFICATION	CKT NO	NOTES
	1	VEHICLE LIFT	M	0.6			2#12 & 1#12G IN 3/4"C	20	2	1	20	2#12 & 1#12G IN 3/4"C	1.2			O	BRAKE LATHE BENCH	2	
	3		M		0.6		-	-	-	1	20	2#12 & 1#12G IN 3/4"C		1.0		O	PARTS WASHER	4	
	5	VEHICLE LIFT	M			0.6	2#12 & 1#12G IN 3/4"C	20	2	1	20	2#12 & 1#12G IN 3/4"C			0.4	R	CORD REEL CEILING	6	
	7		M	0.6			-	-	-	1	20	2#12 & 1#12G IN 3/4"C	0.4			R	CORD REEL CEILING	8	
	9	VEHICLE LIFT	M		0.6		2#12 & 1#12G IN 3/4"C	20	2	1	20	2#10 & 1#12G IN 3/4"C		1.2		M	OIL RECOVER PUMP	10	
	11		M			0.6	-	-	-	1	20	2#10 & 1#12G IN 3/4"C			1.2	O	TIMER FOR COMPRESSOR	12	
	13	VEHICLE LIFT	M	0.6			2#12 & 1#12G IN 3/4"C	20	2	1	20	2#10 & 1#12G IN 3/4"C	1.2			O	AIR DRYER	14	
	15		M		0.6		-	-	-	1	20	2#10 & 1#12G IN 3/4"C		1.0		M	FLUID PUMP CONTROL	16	
	17	VEHICLE LIFT	M			0.6	2#12 & 1#12G IN 3/4"C	20	2	1	20	2#10 & 1#12G IN 3/4"C			1.0	M	FLUID PUMP CONTROL	18	
	19		M	0.6			-	-	-	1	20	2#10 & 1#12G IN 3/4"C	1.0			M	FLUID PUMP CONTROL	20	
	21	VEHICLE LIFT	M		0.6		2#12 & 1#12G IN 3/4"C	20	2	1	20	2#10 & 1#12G IN 3/4"C		1.0		M	FLUID PUMP CONTROL	22	
	23		M			0.6	-	-	-	1	20	2#10 & 1#12G IN 3/4"C			1.0	M	FLUID PUMP CONTROL	24	
	25	VEHICLE LIFT	M	0.6			2#12 & 1#12G IN 3/4"C	20	2	3	40	3#8 & 1#10G IN 3/4"C	2.9			M		26	
	27		M		0.6		-	-	-	-	-	-		2.9		M	AIR COMPRESSOR	28	
	29	VEHICLE LIFT	M			0.6	2#12 & 1#12G IN 3/4"C	20	2	-	-	-			2.9	M		30	
	31		M	0.6			-	-	-	3	100	3#2 & 1#8G IN 1 1/4"C	2.4			O		32	
	33	TIRE BALANCER	M		1.0		2#12 & 1#12G IN 3/4"C	20	2	-	-	-		2.4		O	LPL	34	
	35		M			1.0	-	-	-	-	-	-			2.4	O		36	
	37	TIRE CHANGER	M	2.1			2#12 & 1#12G IN 3/4"C	20	2	3	30	3#10 & 1#10G IN 3/4"C	0.0			O		38	
	39		M		2.1		-	-	-	-	-	-		0.0		O	SPD	40	
	41	CIRCULATION FAN	M			1.2	2#12 & 1#12G IN 3/4"C	20	1	-	-	-			0.0	O		42	
	43	CIRCULATION FAN	M	1.2			2#12 & 1#12G IN 3/4"C	20	1	1	20	2#12 & 1#12G IN 3/4"C	0.7			R	BENCH RECEPTACLE	44	
	45	CIRCULATION FAN	M		1.2		2#12 & 1#12G IN 3/4"C	20	1	1	20	2#12 & 1#12G IN 3/4"C		0.7		R	BENCH RECEPTACLE	46	
	47	CIRCULATION FAN	M			1.2	2#12 & 1#12G IN 3/4"C	20	1	1	20	2#10 & 1#12G IN 3/4"C			0.7	R	BENCH RECEPTACLE	48	
	49	CIRCULATION FAN	M	1.2			2#12 & 1#12G IN 3/4"C	20	1	1	20	2#10 & 1#12G IN 3/4"C	0.7			R	BENCH RECEPTACLE	50	
	51	CIRCULATION FAN	M		1.2		2#12 & 1#12G IN 3/4"C	20	1	2	30	2#10 & 1#10G IN 3/4"C		2.4		C	AHU-1	52	
	53	CIRCULATION FAN	M			1.2	2#12 & 1#12G IN 3/4"C	20	1	-	-	-			2.4	C		54	
	55	CIRCULATION FAN	M	1.2			2#12 & 1#12G IN 3/4"C	20	1	2	60	2#4 & 1#10G IN 3/4"C	5.0			H	P-6 WATER HEATER	56	
	57	CIRCULATION FAN	M		1.2		2#12 & 1#12G IN 3/4"C	20	1	-	-	-		5.0		H		58	
	59		M			2.9	3#8 & 1#10G IN 3/4"C	40	3	2	20	2#12 & 1#12G IN 3/4"C			1.0	C	CU-1	60	
	61	AIR COMPRESSOR	M	2.9			-	-	-	-	-	-	1.0			C		62	
	63		M		2.9		-	-	-	2	125	2#1 & 1#6G IN 1 1/4"C		10.0		O	BATTERY CHARGER	64	
	65	SPACE							1	-	-	-			10.0	O		66	
				12.2	12.7	10.6							16.4	27.5	22.9				

	CONN. LOAD (KVA)	ADJUST. FACTOR	DEMAND FACTOR		DEMAND LOAD (KVA)
LIGHTING (L)	0.0	1.25	1.00		0.0
RECEPTACLES (R)	3.6	---	NEC		3.6
LARGEST MOTOR (M)	8.7	1.25	1.00		10.9
ALL OTHER MOTORS (M)	41.7	1.00	1.00		41.7
HEATING (H)	10.0	1.00	1.00		10.0
COOLING (C)	6.7	1.00	1.00		6.7
OTHER (O)	31.7	1.00	1.00		31.7
ELEVATOR (V)	0.0	1.00	1.00		0.0
SPARES (S)	0.0	1.00	1.00		0.0
DRYERS (D)	0.0	1.00	1.00		0.0
X-RAY (X)	0.0	1.00	1.00		0.0
KITCHEN (K)	0.0	1.00	1.00		0.0

TOTAL CONNECTED LOAD: 102.4 KVA
TOTAL DEMAND LOAD: 104.5 KVA
DEMAND AMPS: 290.5 AMPS

PERCENT IMBALANCE: 29 %

Name: LPL

MAIN BREAKER: AMPS 3 POLE
MAIN LUGS: 100 AMPS
K.A.I.C. : 42 AMPS
SURFACE MTD: X
FLUSH MTD:

3 **PHASE**
4 **WIRE**
X **208Y/120V**
480Y/277V
240/120V

Project Name: KIA SERVICE DEPT
Project Number: 22-028
Fed From: PANEL LPM

NOTES	CKT NO	IDENTIFICATION	CODE	LOAD/PHASE (KVA) A	B	C	WIRE SIZE	CIRCUIT BREAKER TRIP	POLES	POLES	TRIP	WIRE SIZE	LOAD/PHASE (KVA) A	B	C	CODE	IDENTIFICATION	CKT NO	NOTES
	1	GENERAL RECEPT (SERVICE AREA)	R	1.1			2#12 & 1#12G IN 3/4"C	20	1	1	20	2#12 & 1#12G IN 3/4"C	0.6			L	PARTS STORAGE & RR LTG	2	
	3	GENERAL RECEPT (SERVICE AREA)	R		1.1		2#12 & 1#12G IN 3/4"C	20	1	1	20	2#12 & 1#12G IN 3/4"C		1.1		L	MAIN SERVICE AREA LTG	4	
	5	GENERAL RECEPT (RR & CORRIDOR	R			0.4	2#12 & 1#12G IN 3/4"C	20	1	1	20	2#12 & 1#12G IN 3/4"C			0.5	L	BENCH LTG	6	
	7	GENERAL RECEPT (PARTS)	R	0.9			2#12 & 1#12G IN 3/4"C	20	1	1	20	2#12 & 1#12G IN 3/4"C	0.2			L	OUTDOOR LTG	8	
	9	FIRE ALARM PANEL	O		0.5		2#12 & 1#12G IN 3/4"C	20	1	1	20						SPARE	10	
	11	AHU-1 RECEPT	R			0.2	2#12 & 1#12G IN 3/4"C	20	1	1	20						SPARE	12	
	13	SPACE							1	1							SPACE	14	
	15	SPACE							1	1							SPACE	16	
	17	SPACE							1	1							SPACE	18	
	19	SPACE							1	1							SPACE	20	
	21	SPACE							1	1							SPACE	22	
	23	SPACE							1	1							SPACE	24	
	25	SPACE							1	3	30	3#10 & 1#10G IN 3/4"C	0.0			O		26	
	27	SPACE							1	-	-	-		0.0		O	SPD	28	
	29	SPACE							1	-	-	-			0.0	O		30	
				2.0	1.6	0.5							0.8	1.1	0.5				

	CONN. LOAD (KVA)	ADJUST. FACTOR	DEMAND FACTOR		DEMAND LOAD (KVA)
LIGHTING (L)	2.4	1.25	1.00		3.0
RECEPTACLES (R)	3.6	---	NEC		3.6
LARGEST MOTOR (M)	0.0	1.25	1.00		0.0
ALL OTHER MOTORS (M)	0.0	1.00	1.00		0.0
HEATING (H)	0.0	1.00	1.00		0.0
COOLING (C)	0.0	1.00	1.00		0.0
OTHER (O)	0.5	1.00	1.00		0.5
ELEVATOR (V)	0.0	1.00	1.00		0.0
SPARES (S)	0.0	1.00	1.00		0.0
DRYERS (D)	0.0	1.00	1.00		0.0
X-RAY (X)	0.0	1.00	1.00		0.0
KITCHEN (K)	0.0	1.00	1.00		0.0

TOTAL CONNECTED LOAD: 6.5 KVA
TOTAL DEMAND LOAD: 7.1 KVA
DEMAND AMPS: 19.7 AMPS

PERCENT IMBALANCE: 61 %

PERMIT SUBMITTAL

ERIC ENCARNACION
LICENSE
No. 85701
STATE OF FLORIDA
PROFESSIONAL ENGINEER

WCGArchitecture
AA26004016 • 7416 hatteras drive • hudson, florida 34667 • 727.534.5091

Revisions

Rountree - Moore KIA
Service Department Addition
2528 W. US Highway 90 - Lake City, Florida 32055

PANEL SCHEDULES

Project number	2022.01
Date	October 20, 2022

E - 4.01

ENCARN ENGINEERING, LLC