ELECTRICAL SPECIFICATIONS

1. MATERIALS AND INSTALLATION, AS A MINIMUM, ARE TO CONFORM WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE, THE LATEST EDITION OF N.F.P.A., AND THE LATEST EDITIONS OF THE LOCAL CODES AND ORDINANCES, INCLUDING ALL AMENDMENTS TO THE N.E.C. EQUIPMENT, WHERE APPLICABLE, WILL BE LISTED WITH THE UNDERWRITERS LABORATORIES, INC. QUALITY AND WORKMANSHIP ESTABLISHED BY DRAWINGS AND SPECIFICATIONS ARE NOT TO BE REDUCED BY THE ABOVE MENTIONED CODES.

2. BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF WORK. THE SUBMISSION OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION BEEN MADE, WILL NOT BE ALLOWED.

3. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST-CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM IS TO BE FULLY OPERABLE AND ACCEPTANCE OF THIS SYSTEM BY THE ENGINEER/ARCHITECT MUST BE A CONDITION OF THE SUB CONTRACT.

4. ALL WORK TO BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.

5. CONTRACTOR TO GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF ACCEPTANCE.

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

7. ALL REQUIRED INSURANCE TO BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OF PROPERTY DAMAGE FOR THE DURATION OF THE WORK.

8. CONTRACTOR TO PAY FOR ALL PERMITS, FEES INSPECTIONS AND TESTINGS.

9. ELECTRICAL INSTALLATION TO MEET ALL STANDARD REQUIREMENTS OF LOCAL POWER AND TELEPHONE COMPANIES. ELECTRICAL CONTRACTOR SHALL CONTACT LOCAL POWER AND TELEPHONE COMPANIES PRIOR TO START OF CONSTRUCTION.

10. ALL WIRING SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED, MINIMUM WIRE SIZE SHALL BE #12 AWG, EXCLUDING CONTROL WIRING. ALL CONDUCTORS SHALL BE COPPER WITH THWN/THHN INSULATION. CONDUCTORS #10 AND SMALLER MAY BE SOLID; ALL THOSE #8 AND LARGER TO BE STRANDED.

11. ALL UNDERGROUND RACEWAYS SHALL BE MINIMUM 3/4", GALVANIZED RIGID STEEL CONDUIT OR SCHEDULE 40 PVC. ALL OTHER RACEWAYS TO COMPLY WITH GOVERNING CODES. WHERE RIGID STEEL IS USED, IT SHALL BE COMPLETELY COATED WITH AN ALKALI AND RUST RESISTANT BITUMASTIC PAINT, KOPPER NO. 50, AND THREADS SHALL BE COATED WITH ZINC CHROMATE. RIGID STEEL SHALL ALSO BE USED WHEN CONDUIT IS EXPOSED TO EXTERIOR ENVIRONMENT SUCH AS EXTERIOR OF BUILDING OR WHERE IT IS EXPOSED AND SUBJECT TO DAMAGE, INSIDE OF BUILDING.

11.1 ALL UNDERGROUND SERVICE CONDUITS/RACEWAYS ENTERING BUILDING OR STRUCTURE FROM OUTSIDE TO INSIDE SHALL BE SEALED, INCLUDING SPARE CONDUITS. SEALANT SHALL BE SUITABLE FOR THIS USE.

12. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS, AND BE OF SPECIAL CONSTRUCTION FOR OTHER CLASSIFIED AREAS. ALL BOXES SHALL BE RECESSED (FLUSH) IN WALLS OR CEILINGS WHENEVER POSSIBLE.

13. DISCONNECT SWITCHES SHALL BE H.P. RATED, GENERAL DUTY, QUICK-MAKE, QUICK-BREAK TYPE. ENCLOSURES SHALL BE AS REQUIRED BY N.E.C. AND LOCATION (WEATHERPROOF, EXPLOSION PROOF, ETC.). ENGRAVED LAMINATED PLASTIC IDENTIFICATION PLATES SHALL BE FURNISHED AND INSTALLED ON ALL PANELS, DISCONNECT SWITCHES, CONTACTORS AND STARTERS.

13.1. ALL FUSES FOR SAFETY SWITCHES SHALL BE DUAL ELEMENT, CARTRIDGE TYPE. FUSES SHALL BE THOSE MANUFACTURED BY EITHER BUSSMAN OR LITTLEFUSE. THE CONTRACTOR SHALL FURNISH TO THE OWNER ONE SPARE FUSE FOR EACH SIZE AND TYPE OF FUSE INSTALLED. FUSES 600 AMPS OR LESS SHALL BE CLASS RK1, TYPICAL UNLESS OTHERWISE NOTED. FUSES OVER 600 AMPS SHALL BE CLASS L.

14. ALL GENERAL PURPOSE SWITCHES AND RECEPTACLES SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER. CATALOG NUMBERS LISTED ARE LEVITON: HOWEVER, COMPARABLE DEVICES BY PASS & SEYMOUR, BRYANT, OR ARROW HART WILL BE ACCEPTED. COLOR OF DEVICES AND PLATES SHALL BE DICTATED BY ARCHITECT/OWNER.

A. SWITCHES: LEVITON #CSB1-20I (SALES AREA); LEVITON #CSB1-20B (SERVICE LINE)
B. RECEPTACLES: LEVITON #BR20-((SALES AREA); LEVITON #BR20-B (SERVICE LINE)
C. COVER PLATES: STAINLESS STEEL

NOTE: ALL OTHER REQUIRED DEVICES SHALL MATCH IN COLOR AND STYLE.

15. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM, AND PROVIDE ALL NECESSARY DEVICES AND COMPONENTS FOR EQUIPMENT BE PLACED IN PROPER WORKING ORDER.

16.1. A SEPARATE, GREEN TYPE THW COPPER GROUND CONDUCTOR SHALL BE RUN FROM GROUND LUG OF EACH GROUNDED RECEPTACLE TO AN APPROVED CONNECTION INSIDE THE ENCLOSING STEEL OUTLET BOX. DEVICE MOUNTING SCREWS SHALL NOT BE CONSIDERED AN APPROVED GROUND.

16.2. A SEPARATE GROUND CONDUCTOR SHALL BE INSTALLED IN EVERY CONDUIT AND RACEWAY AND SECURELY BONDED IN AN APPROVED GROUNDING TERMINAL AT BOTH ENDS OF THE RUN. THE GROUNDING CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH TABLE 250.122 OF THE N.E.C. CONTRACTOR SHALL SIZE CONDUIT TO ACCOMMODATE ADDITIONAL CONDUCTOR.

16.3. GROUND RODS SHALL BE 5/8" DIAMETER, TEN (10) FEET LONG COPPERCLAD STEEL. OBTAIN TWENTY FIVE (25) OHMS MAXIMUM RESISTANCE AS READ WITH A GROUNDING RESISTANCE TESTER, USING TWO REFERENCE RODS. IF TWENTY FIVE (25) OHMS CANNOT BE ACHIEVED, CONTRACTOR SHALL PROVIDE ADDITIONAL RODS, UNTIL TWENTY FIVE (25) HAS BEEN OBTAINED.

17. LOAD DATA IS BASED ON INFORMATION GIVEN TO ENGINEER AT THE TIME OF DESIGN. VERIFY ALL EQUIPMENT NAMEPLATE RATINGS BEFORE ORDERING.

18. CIRCUITS SHOWN ON PLANS ARE TO DETERMINE LOAD DATA AND PANEL SIZES. THE CONTRACTOR IS TO PROVIDE CIRCUITS AND ROUTING OF CONDUITS TO SUIT JOB CONDITIONS.

19. FURNISH AND INSTALL DISCONNECT SWITCHES, WIRING, AND CONNECTIONS ON AIR CONDITIONING SYSTEM AS SHOWN ON PLANS. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE WITH MECHANICAL CONTRACTOR REGARDING SUPPLY AND INSTALLATION OF ALL REQUIRED CONTROLS.

19.1 ELECTRICAL CONTRACTOR SHALL MAKE LINE VOLTAGE CONNECTIONS TO THE MAIN TERMINAL BLOCK OR LUGS ON ALL EQUIPMENT SHOWN. ANY ADDITIONAL LINE VOLTAGE CONNECTIONS BETWEEN VARIOUS COMPONENTS OF A MULTI-COMPONENT PIECE OF EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE EQUIPMENT INSTALLER, UNLESS THE FULL SCOPE OF THE ELECTRICAL INSTALLATION REQUIREMENTS ARE PROVIDED TO THE ENGINEER AT THE TIME OF DESIGN.

20. THE DISCONNECT SWITCH, FUSE SIZES, CONDUIT AND WIRE SHOWN FOR ALL HVAC ARE SIZED PER THE MANUFACTURER, AND MODEL NUMBER LISTED ON THE MECHANICAL PLANS. IF THERE IS AN EQUAL MANUFACTURER, OR OTHER MANUFACTURER PROVIDED, THE MECHANICAL/ GENERAL CONTRACTOR SHALL BEAR ANY ADDITIONAL COST INCURRED IF THE ELECTRICAL IS NOT EQUAL TO SPECIFICATIONS.

21. ALL SWITCHBOARDS, PANELS, STARTERS, CONTACTORS ETC., SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER, THE SYSTEM DESIGN IS BASED ON SQUARE "D"; HOWEVER, COMPARABLE EQUIPMENT BY SIEMENS, G.E. AND CUTLER HAMMER ONLY WILL BE ACCEPTABLE. ALL PANELBOARDS SHALL HAVE BOLT-ON TYPE CIRCUIT BREAKERS. TANDEM AND HALF-SPACE CIRCUIT BREAKERS SHALL NOT BE USED.

21.1. TYPEWRITTEN CIRCUIT INDEX SHALL BE AFFIXED TO INSIDE SURFACE OF EACH PANELBOARD DOOR, CLEARLY INDICATING AREA AND TYPE OF LOAD SERVED BY EACH BRANCH CIRCUIT PROTECTIVE DEVICE, INCLUDING SPARES. HAND PRINTED WILL NOT BE ACCEPTED.

21.2. ENGRAVED, LAMINATED PLASTIC IDENTIFICATION PLATES SHALL BE FURNISHED AND INSTALLED ON ALL PANELS AND SWITCHBOARDS. PLATES SHALL BE AFFIXED TO FRONT OF PANELS, INDICATING PANEL NAME, VOLTAGE AND AMPERAGE.

22. ALL UNDERGROUND PVC CONDUIT RUNS SHALL HAVE RIGID STEEL ELBOWS AND RIGID STEEL SECTIONS AT SLAB PENETRATIONS WHERE SUBJECT TO POSSIBLE DAMAGE.

23. THE ELECTRICAL CONTRACTOR SHALL MEET AND COORDINATE WITH THE LOCAL POWER COMPANY AT THE SITE PRIOR TO CONSTRUCTION. AT THAT TIME, THE CONTRACTOR SHALL COORDINATE ALL RELATED WORK WITH THE UTILITY COMPANY'S RESPONSIBILITIES TO MEET THE OWNER'S SCHEDULE.

24. ALL ELECTRICAL CONDUCTORS SHALL BE INSTALLED IN AN APPROVED RACEWAY, EMT, IMC, RIGID GALVANIZED CONDUIT OR SCHEDULE 40 P.V.C. TYPE 'MC', ELECTRICAL NON-METALLIC TUBING, & FLEXIBLE METAL CONDUIT MAY BE USED FOR BRANCH CIRCUITING AS ALLOWED BY THE N.E.C. & AHJ. MAXIMUM NUMBER OF 120V CIRCUITS ALLOWED IN A COMMON CONDUIT SHALL BE SIX (6). THE CONTRACTOR SHALL STRICTLY CONFORM TO THE N.E.C. REQUIREMENTS OF DERATING FOR CONDUCTOR AMPACITY AND CONDUIT FILL. NO CONDUITS SHALL BE INSTALLED, EXPOSED ON ROOF.

24.1. CONDUCTORS SHALL BE COLOR CODED AS FOLLOWS:

208Y SYSTEM	480Y SYSTEM	PHASE SEQUENCE
NEUTRAL -- WHITE	NEUTRAL -- WHITE	ABC, TOP TO BOTTOM
PHASE A -- BLACK	PHASE A -- BROWN	LEFT TO RIGHT, FRONT
PHASE B -- RED	PHASE B -- ORANGE	TO BACK
PHASE C -- BLUE	PHASE C -- YELLOW	
GRD.CON -- GREEN	GRD.CON -- GREEN	

24.2. WHEN MAIN ELECTRICAL SERVICE HAS A WIREWAY, E.C. SHALL TAP OFF OF ALL SERVICE ENTRANCE FEEDERS (PARALLEL CONDUCTORS) FOR TOTAL AMPACITY & BALANCING.

25. CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING ALL CONDUIT PENETRATIONS MADE THROUGH FIRE RATED WALLS, CEILINGS, SLABS, ETC. PENETRATION SEALS SHALL BE PER U.L. ASSEMBLY STANDARDS.

26. CONTRACTOR SHALL PROVIDE SHOP DRAWING SUBMITTALS FOR LIGHT FIXTURES, SWITCHBOARDS, WIRING DEVICES, EMERGENCY GENERATOR/TRANSFER EQUIPMENT, AND ALL SYSTEMS (FIRE ALARM, SECURITY, ETC.). PROVIDE TWO (2) COPIES, TEN (10) DAYS PRIOR TO BID DATE FOR ENGINEER'S APPROVAL TO SUBMIT. ENGINEER'S APPROVAL OF THE PRIOR APPROVAL PACKAGE WILL BE CONSIDERED PRELIMINARY. FINAL APPROVAL WILL BE CONTINGENT UPON REVIEW OF FINAL SHOP DRAWINGS. ALL PROPOSED ALTERNATES MUST BE INDUSTRY STANDARD EQUALS TO THE ITEMS SPECIFIED AS THE BASIS OF DESIGN; HOWEVER, IF THE ITEMS ARE NOT CONSIDERED EQUAL BY THE ENGINEER, IT SHALL BE DISAPPROVED FOR FINAL SUBMITTAL. IF ELECTRICAL CONTRACTOR/ GENERAL CONTRACTOR DOES NOT SUBMIT SHOP DRAWINGS TO ELECTRICAL ENGINEER FOR ITEMS LISTED ABOVE, ELECTRICAL ENGINEER WILL NOT BE RESPONSIBLE FOR ANY OMISSIONS AND/OR ERRORS DUE TO SHOP DRAWINGS NOT SUBMITTED. SHOP DRAWINGS WILL ONLY BE REVIEWED TWICE AS PART OF THIS CONTRACT. ADDITIONAL SHOP DRAWING REVIEWS SHALL BE INVOICED AT $85.00 PER HOUR, BILLABLE TO THE SUB-CONTRACTOR, C.O.D.

27. CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF CONTRACT DRAWINGS AT JOB SITE WITH COLORED MARKINGS INDICATING PROGRESS OF WORK. THIS SET OF CONTRACT DRAWINGS IS TO BE SEPARATE FROM AND IN ADDITION TO CONTRACTOR'S CONSTRUCTION SET. EVERY UNIT OF EQUIPMENT, DEVICE, CONDUIT AND WIRE IS TO MARKED WHEN INSTALLED. USE GREEN TO INDICATE INSTALLATION AS SHOWN ON DRAWINGS AND USE RED TO INDICATE FIELD CHANGES. UPON COMPLETION OF WORK, THIS SET OF CONTRACT DRAWINGS IS TO BE TURNED OVER TO AND BECOME PROPERTY OF THE ARCHITECT.

28. THE OWNER RESERVES THE RIGHT TO REVISE THE DRAWING FROM TIME TO TIME TO INDICATE CHANGES IN THE WORK. WHEN REVISED DRAWINGS AND/OR ANY REVISIONS ARE ISSUED, THE CONTRACTOR SHALL EVALUATE THE CHANGES PROMPTLY. BEFORE INSTALLATION OF ANY ITEM OR PERFORMANCE THE WORK INDICATED BY THE REVISED DRAWINGS OR REVISIONS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IN WRITING THAT THE REVISED DRAWINGS INVOLVE AN ADDITION OR DEDUCTION OF A SPECIFIC AMOUNT OF MONEY TO THE CONTRACT PRICE. THE CONTRACTOR SHALL NOT PROCEED WITH THE REVISED WORK WITHOUT PRIOR WRITTEN APPROVAL BY THE ARCHITECT/ENGINEER OF THE COST OF THE REVISED WORK.

29. IF ELECTRICAL CONTRACTOR HAS QUESTIONS OR IN HIS OPINION FINDS OMISSIONS OR ERRORS ON ELECTRICAL DOCUMENTS, IT IS THEIR RESPONSIBILITY TO BRING THIS TO THE ATTENTION OF THE ELECTRICAL ENGINEER/ARCHITECT/OWNER IMMEDIATELY. IF ELECTRICAL CONTRACTOR PROCEEDS WITH ANY CHANGES TO THE CONTRACT DOCUMENTS WITHOUT WRITTEN PRIOR APPROVAL FROM THE ELECTRICAL ENGINEER/ARCHITECT/OWNER WILL NOT BE COMPENSATED.

30. CONTRACTOR SHALL PROVIDE TWO (2) COPIES OF THE PROPOSED SITE LIGHT FIXTURE PACKAGE TEN (10) DAYS PRIOR TO BID DATE FOR ENGINEER'S APPROVAL TO SUBMIT. ENGINEER'S APPROVAL OF THE PRIOR APPROVAL PACKAGE WILL BE CONSIDERED PRELIMINARY. FINAL APPROVAL WILL BE CONTINGENT UPON REVIEW OF FINAL SHOP DRAWING. ALL PROPOSED ALTERNATES MUST BE INDUSTRY STANDARD EQUALS TO THE SITE FIXTURES SPECIFIED AS THE BASIS OF DESIGN; HOWEVER, IF THE SITE FIXTURE IS NOT CONSIDERED EQUAL BY THE ENGINEER, IT SHALL BE DISAPPROVED FOR FINAL SUBMITTAL. ALTERNATE SITE FIXTURES SHALL INCLUDE A COMPUTER GENERATED POINT-BY-POINT PHOTOMETRIC CALCULATION BASED ON THE EXACT (FIXTURE CHARACTERISTICS AND POLE PLACEMENT SHALL NOT BE ALTERED). THIS DIAGRAM SHALL SHOW COMPOSITE VALUES OF THE ILLUMINANCE PROJECTED FROM THE ARRANGEMENT OF LIGHT SOURCES AS SHOWN ON PLAN. COMPUTER PLOT DIAGRAM SHALL ALSO SHOW THE LOCATIONS OF THE POLES, SPACING BETWEEN POLES, THE MOUNTING HEIGHT USED IN THE CALCULATIONS, AND THE FIXTURE CATALOG NUMBER BEING USED.

ELECTRICAL LEGEND

- FLUORESCENT LIGHT FIXTURE, LETTER INDICATES TYPE
- RECESSED LIGHT FIXTURE, LETTER INDICATES TYPE
- WALL BRACKET LIGHT FIXTURE, LETTER INDICATES TYPE
- POLE WITH ARM MOUNTED FIXTURE, LETTER INDICATES TYPE
- LIGHT FIXTURE ON EMERGENCY POWER OR WITH BATTERY PACK
- EXIT LIGHT (ARROW INDICATES DIRECTION, SHADING INDICATES FACE)
- BATTERY POWERED EMERGENCY LIGHT
- TRACK LIGHTING
- SINGLE POLE SWITCH, LOWER CASE LETTER INDICATES LIGHT CONTROLLED, MOUNT 48" AFF UON
- DOUBLE POLE SWITCH, MOUNT 48" AFF UON
- THREE-WAY SWITCH, MOUNT 48" AFF UON
- FOUR-WAY SWITCH, MOUNT 48" AFF UON
- DIMMER SWITCH, WATTS AS NOTED, (6= 600W, 10= 1000W) MOUNT 48" AFF UON
- SINGLE POLE SWITCH WITH PILOT LIGHT, MOUNT 48" AFF UON
- FAN CONTROLLER, MOUNT 48" AFF UON
- MOTOR RATED SWITCH
- MOMENTARY CONTACT SWITCH, MOUNT 48" AFF UON
- KEY OPERATED SINGLE POLE SWITCH, MOUNT 48" AFF UON
- OCCUPANCY SENSOR SWITCH, MOUNT 48" AFF UON
- OCCUPANCY SENSOR SWITCH, CEILING MOUNT
- SINGLE RECEPTACLE, 125V, 20A MOUNT 18" AFF UON
- DUPLEX RECEPTACLE, MOUNT 18" AFF UON
- DUPLEX RECEPTACLE, FLUSH CEILING MOUNT
- DUPLEX RECEPTACLE, MOUNT ABOVE COUNTER HEIGHT UON
- QUADRAPLEX RECEPTACLE, MOUNT 18" AFF UON
- QUADRAPLEX RECEPTACLE, MOUNT ABOVE COUNTER HEIGHT UON
- DUPLEX RECEPTACLE, HORIZONTAL MOUNT
- 1/2 SWITCHED DUPLEX RECEPTACLE, MOUNT 18" AFF UON
- 30A 1ø, 250V. RECEPTACLE, AMPS AS NOTED, MOUNT 18" AFF UON
- SPECIAL RECEPTACLE AS NOTED
- FLOOR MOUNTED DUPLEX RECEPTACLE
- PLUGMOLD (SIZE AND LENGTH AS NEEDED)
- JUNCTION BOX (FLUSH MOUNTED IN FINISHED AREAS UON)
- DISCONNECT SWITCH, NEMA 3R, FUSIBLE FUSES (250V, NEMA 1 UON)
- MAGNETIC MOTOR STARTER
- COMBINATION MAGNETIC MOTOR STARTER/DISCONNECT SWITCH
- LIGHTING OR POWER PANELBOARD
- 277/480V PANELBOARD
- DRY TYPE TRANSFORMER

- CONDUIT CONCEALED IN WALL OR ABOVE CEILING WITH 2 #12, 1 #12 EG CONDUCTORS IN 1/2" CONDUIT MIN UON
- CONDUIT CONCEALED BELOW FLOOR SLAB OR FINISHED GRADE WITH 2 #12, 1 #12 EG CONDUCTORS IN 3/4" CONDUIT MIN UON
- CONDUIT EXPOSED ON WALL OR CEILING WITH 2 #12, 1 #12 EG CONDUCTORS IN 1/2" CONDUIT MIN UON
- PHASE, NEUTRAL, ISOLATED GROUND CONDUCTORS
- FLEXIBLE CONDUIT NOT TO EXCEED 6 FEET IN LENGTH
- TELEVISION SYSTEM EMPTY CONDUIT WITH PULL WIRE
- LOW VOLTAGE WIRING
- CONDUIT SEAL-OFF FITTING FOR COOLER/FREEZER CIRCUITS
- CONDUIT STUB
- DRIVEN GROUND ROD
- CONDUIT UP
- CONDUIT DOWN
- JUNCTION BOX FOR PADDLE FAN, FLUSH MOUNTED PER THE N.E.C.
- THERMOSTAT. PROVIDE SINGLE GANG BOX WITH 1/2" C STUBBED INTO CEILING SPACE, MOUNT 60" AFF UON (COORDINATE WITH MECHANICAL DRAWINGS PRIOR TO ROUGH-IN)
- MOTOR PERMANENTLY CONNECTED WITH FLEXIBLE CONDUIT
- ELECTRIC DUCT HEATER
- SPEAKER
- T.V. CAMERA
- DATA OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 18" AFF UON
- REFER TO LIKE NUMBERED NOTES FOR EQUIPMENT DESIGNATIONS
- TELEVISION OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 18" AFF UON
- TELEPHONE OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 18" AFF UON
- TELEPHONE WALL OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 46" AFF UON
- FLOOR MOUNTED TELEPHONE OUTLET
- TELEPHONE BACKBOARD (SIZE AS NOTED) #6 GROUNDING CONDUCTOR TO SERVICE GROUND.
- COMBINATION TELEPHONE/DATA WALL OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 18" AFF UON
- STUB-UP, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 18" AFF UON
- TELEPHONE/DATA-POWER POLE
- PUSHBUTTON, MOUNT 48" AFF UON
- DOOR CHIME WITH TRANSFORMER
- DEVICE AS NOTED

- CONTACTOR (AS NOTED)
- TIME CLOCK
- PHOTOCELL
- MANUAL FIRE ALARM PULL STATION 48" AFF
- DUCT SMOKE DETECTOR
- REMOTE TEST/LED SWITCH
- RELAY
- MODULE
- MINI HORN
- SMOKE DETECTOR, PHOTOELECTRIC
- HEAT DETECTOR
- FLOW SWITCH
- TAMPER SWITCH
- SYSTEM [illegible]
- WATER GONG
- FIRE ALARM COMBINATION HORN/STROBE (75 CANDELLA UON) MOUNTED PER NFPA 72
- FIRE ALARM STROBE (75 CANDELA UON) MOUNTED PER NFPA 72
- FACP FIRE ALARM CONTROL PANEL
- FAAP FIRE ALARM ANNUNCIATOR PANEL

ABBREVIATIONS

ACC-CU	CONDENSING UNIT	HP	HORSE POWER
AFF	ABOVE FINISH FLOOR	IG	ISOLATED GROUND
AFG	ABOVE FINISH GRADE	JB	JUNCTION BOX
AFI	ARC FAULT INTERRUPTER	LSIG	LONG, SHORT, INSTANTANEOUS GROUND FAULT SETTING
A/H-AHU	AIR HANDLING UNIT	(N)	NEW
ATS	AUTOMATIC TRANSFER SWITCH	NEUT	NEUTRAL
BFG	BELOW FINISHED GRADE	NF	NON FUSED
C	CONDUIT	NIC	NOT IN CONTRACT
CLG	CEILING MOUNTED	NL	NIGHT LIGHT
CT	CURRENT TRANSFORMER	NP	NAME PLATE
DN	DOWN	NTS	NOT TO SCALE
EX-(E)	EXISTING	PNL	PANEL
EC	ELECTRICAL CONTRACTOR	RE-(R)	RELOCATED
E/F-EF	EXHAUST FAN	RTU	ROOF TOP UNIT
EG	EQUIPMENT GROUND	TL	TWIST LOCK
EWC	ELECTRIC WATER COOLER	TTB	TELEPHONE TERMINAL BOARD
EWH	ELECTRIC WATER HEATER	TYP	TYPICAL
GEC	GROUNDING ELECTRODE CONDUCTOR	UON	UNLESS OTHERWISE NOTED
GFI	GROUND FAULT INTERRUPTER	WP	WEATHERPROOF
HID	HIGH INTENSITY DISCHARGE	WR	WEATHER RESISTANT

LEGEND NOTES:
1. MOUNTING HEIGHTS SHOWN ARE MAXIMUM/MINIMUM HANDICAPPED ACCESSIBILITY STANDARDS - THEY SHALL NOT BE ALTERED WITHOUT WRITTEN AUTHORIZATION
2. ALL MOUNTING HEIGHTS ARE TO CENTERLINE UON.
3. ALL SYMBOLS MAY NOT BE USED

PROJECT COORDINATION NOTES

1. BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF WORK. THE SUBMISSION OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION BEEN MADE, WILL NOT BE ALLOWED.
2. NEW AND EXISTING CIRCUIT DESIGNATIONS MAY NOT REPRESENT ACTUAL FIELD CONDITIONS. THEY ARE INTENDED FOR REFERENCE ONLY.
3. 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.

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No.	DATE	DESCRIPTION

DWG DATE:	2-1-2019
DRAWN BY:	SC/AM
PROJECT No.:	19005

DWG TITLE:

LEGEND AND SPECIFICATIONS

SHEET No.

E-0