LEGEND

SYMBOL	DESCRIPTION
3 A b	INCANDESCENT, L.E.D., "H.I.D." OR ROUND TWIN TUBE FLUORESCENT TYPE FIXTURE; "A" REFERS TO DESIGNATION IN THE FIXTURE SCHEDULE; "b" REFERS TO SWITCH CONTROL; "3" REFERS TO CIRCUIT NUMBER.
A 3 b	FLUORESCENT OR L.E.D. FIXTURE, NOTATIONS SAME AS ABOVE.
P S 4 3	WALL SWITCH; SINGLE POLE UNLESS NOTED 3–OR–4 WAY, 2–GANG BOX WITH 1–GANG DEVICE RING, MOUNT 48" TO TOP OF BOX ABOVE FLOOR OR 8" TO TOP OF BOX ABOVE COUNTERTOP, "P" INDICATES WITH PILOT LIGHT, "M" INDICATES "MULLION TYPE". PROVIDE HORIZONTALLY MOUNTED SWITCHES WITH VERTICAL ON/OFF OPERATION WHERE SWITCHES ARE LOCATED ABOVE COUNTERS. PROVIDE NEUTRAL WIRE TO ALL SWITCH LOCATIONS PER NEC 2011.
	DUPLEX RECEPTACLE, TAMPER RESISTANT TYPE, 120 VOLT, 20 AMP., 2–GANG BOX WITH 1–GANG DEVICE RING, MOUNT 8" TO TOP OF BOX ABOVE COUNTER TOP AT WORK COUNTERS AND 18" +/– ABOVE FLOOR TO CENTERLINE OF BOX ELSEWHERE UNLESS NOTED OTHERWISE.
	GFI TYPE DUPLEX PLUG RECEPTACLE, TAMPER RESISTANT TYPE, 120 VOLT, 20 AMP, 2–GANG BOX WITH 1–GANG DEVICE RING, MOUNTING SIMILAR TO STANDARD DUPLEX RECEPTACLE, "wp" INDICATES PROVIDE WEATHERPROOF "WHILE IN USE" COVER. ALL GFI OUTLETS LOCATED OUTDOORS SHALL BE WET LOCATION RATED.
	PANELBOARD; RECESSED OR SURFACE MOUNTED AS INDICATED, TOP 6'–0"(1.8m) ABOVE FLOOR ADJUSTED TO OCCUR AT MASONRY JOINT; IN HANDICAPPED ACCESSIBLE OR ADAPTABLE SPACES, MOUNT PANEL SO THAT THE TOP OPERABLE BREAKER IS NO MORE THAN 48" ABOVE FINISHED FLOOR LEVEL. SEE PANELBOARD SCHEDULE.
A–1,3	CONDUIT EXTENDED TO PANELBOARD; PANEL "A", CIRCUITS 1&3; CROSS LINES INDICATE NUMBER OF NO. 12 AWG. CONDUCTORS WHEN MORE THAN TWO, NO SHARED NEUTRALS ARE ALLOWED. PROVIDE SEPARATE CODE SIZE EQUIPMENT GROUND CONDUCTOR IN ADDITION TO CONDUCTORS INDICATED.
	CONDUIT RUN IN THE FLOOR CONSTRUCTION OR UNDERGROUND. PULL A SEPARATE CODE SIZE EQUIPMENT GROUND CONDUCTOR IN ALL PVC CONDUIT RUNS IN ADDITION TO CONDUCTORS INDICATED. INCREASE CONDUIT SIZE IF REQUIRED TO ACCOMMODATE THIS CONDUCTOR.
	CONDUIT RUN IN WALL OR CEILING CONSTRUCTION.
J	JUNCTION BOX; SIZE AND USE: REQUIRED; COVERPLATE SHALL OVERLAP BOX EDGE BY 1/2"(1.3cm) WHERE RECESSED IN WALL WITH CONCEALED WIRING.
	COMBINATION TELEPHONE/COMPUTER OUTLET; TWO GANG BOX WITH 1–GANG DEVICE RING AND TELEPHONE/COMP TYPE COVERPLATE WITH ONE (1) TELEPHONE JACK AND TWO (2) COMPUTER JACKS; EXTEND TWO 1" MIN. SIZE CONDUITS TO POINT AS DIRECTED BY OWNER, MOUNTING HEIGHT SAME AS FOR DUPLEX PLUG RECEPTACLE ABOVE UNLESS NOTED OTHERWISE.
	ELECTRIC MOTOR REQUIRING CONNECTION; SIZE, USE AND LOCATION AS INDICATED. VERIFY LOCATION AND CONNECTIONS REQUIRED WITH MECHANICAL TRADE PRIOR TO ROUGH–IN. USE FLEXIBLE CONDUIT WITHIN 18"(46cm) OF EQUIPMENT. PROVIDE DISCONNECT SWITCH WHEN OUT OF SIGHT OF PANELBOARD.
	MANUAL MOTOR STARTER; MOUNTING HEIGHT SAME AS FOR LIGHT SWITCH.
	MAGNETIC MOTOR STARTER, MOUNT 5'–6"(1.7m) ABOVE FLOOR. PROVIDE DISCONNECT SWITCH WHEN OUT OF SIGHT OF SUPPLYING PANELBOARD.
	FUSED DISCONNECT SWITCH, GENERAL DUTY TYPE, SQUARE D CO., WEATHERPROOF OUTDOORS. PROVIDE FUSING OF SIZE AS IT APPEARS ON THE LABEL OF EQUIPMENT IN ACCORDANCE WITH N.E.C.
C W D S	EXIT SIGN WITH BUILT–IN BATTERY, "W" INDICATES WALL MOUNTED; "S" INDICATES SINGLE FACE; "D" INDICATES DOUBLE–FACE; "C" INDICATES CEILING MOUNTED; DIRECTIONAL ARROWS AS SHOWN; LITHONIA CO. NO. LQMLED–S–W–3–R–120–ELN, LED OPERATION. UNIT SHALL BE MAXIMUM OF 8 1/4" WIDE X 12 1/4" LONG X 2 1/4" THICK INCLUDING CANOPY.
"T.T.S."	TELEPHONE TERMINAL SPACE, "T.T.S.", PROVIDE 3/4"(1.9cm) PLYWOOD BOARD BOLTED TO WALL, TOP 6'–0"(1.8m) ABOVE FLOOR, 5'–0"(1.5m) HIGH BY WIDTH AS SHOWN. PROVIDE P1000 UNISTRUT ABOVE AND BELOW BOARD FOR ATTACHING CONDUIT TO WALL.
DD	SMOKE DETECTOR IN MECH. DUCT WORK BY ELECT, SEE SPECS. UNIT SHALL BE MTD. IN DUCT BY MECH. TRADE. UNIT SHALL SHUT DOWN MECH. UNIT WHEN SMOKE IS DETECTED. CONNECT TO FIRE ALARM SYSTEM.
TV	TELEVISION OUTLET, 2–GANG BOX WITH 1–GANG DEVICE RING, MOUNT 18"(46cm) TO BOTTOM OF BOX ABOVE FLOOR, EXTEND 3/4" CONDUIT TO POINT AS DIRECTED BY OWNER.
	TWIN HEAD LED EMERGENCY LIGHT WITH BATTERY, LITHONIA CO. NO. ELM2L, 220 LUMENS LED LAMPS. (2.4 WATT LED HEADS) . UNIT SHALL PROVIDE 90 MINUTES OF BATTERY POWER TO POWER BOTH LAMPS. MAXIMUM HALLWAY SPACING SHALL BE 18'–0". MOUNT 7'–6" ABOVE FLOOR, BUT NOT CLOSER THAN 3" (7.6cm)TO CEILING.
EM–S WP	WEATHER–PROOF SURFACE MOUNTED EMERGENCY LIGHT, WALL MOUNTED 7'–6" A.F.F. LITHONIA CO. NO. AFF–QEL–DDBTXD–UVOLT–LTP–SDRT–WT–CW, WITH 0 DEGREE BATTERY AND WET LOCATION RATING.
C W D S	EXIT SIGN WITH TWIN LED EMERGENCY LIGHT HEADS (1.5 WATT LED HEADS) AND BUILT–IN BATTERY, "W" INDICATES WALL MOUNTED; "S" INDICATES SINGLE FACE; "D" INDICATES DOUBLE–FACE; "C" INDICATES CEILING MOUNTED; DIRECTIONAL ARROWS AS SHOWN. LITHONIA CO. NO. LHQM–LED–R–120/277.

SPECIFICATION NOTES

1. INCLUDE WIRING FOR LIGHTING, OUTLETS, MECHANICAL WORK AND TELEPHONE AS SHOWN ON THE DRAWINGS. INCLUDE LIGHTING FIXTURES, LAMPS, PANELBOARDS, WIRING DEVICES, SWITCHES, ETC. NECESSARY FOR A COMPLETE AND OPERATING INSTALLATION WITH NO SHORT CIRCUITS, OPEN GROUNDS OR SHARED NEUTRALS. THE CONTRACTOR SHALL PERFORM, PRIOR TO ACCEPTANCE, AN OPERATIONS TEST TO ALL ELECTRICAL EQUIPMENT. THE ENTIRE INSTALLATION SHALL BE FREE FROM OPEN GROUNDS, SHORT CIRCUITS AND SHARED NEUTRALS. BEFORE THE OWNER OPERATES THE EQUIPMENT FOR THE FIRST TIME, THE CONTRACTOR SHALL FURNISH A MAN FAMILIAR WITH THE EQUIPMENT TO INSTRUCT AND ASSIST THE OWNER'S PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF SAID EQUIPMENT.

2. POWER TO THE BUILDING IS 120/240 VOLTS, 1–PHASE, 3–WIRE ENTERING THE BUILDING UNDERGROUND.

3. BRANCH CIRCUIT PANELBOARDS SHALL BE SQUARE D COMPANY "NQ" WITH PLUG–ON SERIES RATED MOLDED CASE CKT. BREAKERS. COORDINATE PLACEMENT OF PANEL TO AVOID CONFLICTS WITH OTHER TRADES. CONTRACTOR SHALL PROVIDE CLEARANCES IN FRONT OF PANELBOARDS AS REQUIRED BY THE NATIONAL ELECTRIC CODE. PROVIDE HEADROOM CLEARANCES AS DETAILED IN THE NATIONAL ELECTRIC CODE. PROVIDE NEMA 3R TYPE WHEN LOCATED OUTDOORS.

4. WIRING DEVICES SHALL BE PLASTIC SPECIFICATION GRADE, MINIMUM RATING OF 20 AMPERES. COLORS SHALL BE AS SELECTED BY ARCHITECT. PROVIDE MATCHING COVERPLATE AS SELECTED BY ARCHITECT.

5. TYPES OF WIRING AND RACEWAYS:
   a. THE TYPES AND GRADES OF MATERIALS TO BE EMPLOYED IN THE WIRING SYSTEMS ARE SUBJECT TO BUILDING STRUCTURAL CONDITIONS AND THE GOVERNING CODES. ALL CONDUCTORS FOR BRANCH CIRCUIT WIRING SHALL BE TYPE "THWN–THHN" (90 DEG CELSIUS) COPPER UNLESS NOTED OTHERWISE. ALL SERVICE ENTRANCE CONDUCTORS SHALL BE "XHHW–2" COPPER (90 DEG CELSIUS) UNLESS NOTED OTHERWISE. MINIMUM #12 AWG CONDUCTOR SIZE SHALL BE USED. ALL CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AND LARGER SHALL BE STRANDED.
   b. NO SHARED NEUTRALS FOR MULTIWIRE BRANCH CIRCUITS SHALL BE THE BASE BID DESIGN CRITERIA. IF APPROVED BY THE ENGINEER, PER NEC 210.4 (B) (2014 ED.), SHARED NEUTRALS MAY BE USED FOR MULTIWIRE BRANCH CIRCUITS AS LONG AS A DISCONNECTING MEANS IS PROVIDED THAT WILL SIMULTANEOUSLY DISCONNECT ALL ENERGIZED CONDUCTORS AT THE POINT WHERE THE MULTIWIRE BRANCH CIRCUIT ORIGINATES. PLEASE NOTE THAT SHARED NEUTRAL MULTIWIRE BRANCH CIRCUITS MAY NOT BE APPROPRIATE OR BE COMPATIBLE WITH SOME WIRING DEVICES AND/OR EQUIPMENT.
   c. UNLESS OTHERWISE NOTED, ALL WIRING SHALL BE RUN CONCEALED AND OUTLETS SHALL BE FLUSH MOUNTED IN WALLS AND CEILINGS.
   d. SCHEDULE 40 PVC 90 DEGREES CELSIUS RATED FOR ELECTRIC USE. CONDUIT SHALL BE USED IN THE FOLLOWING LOCATIONS:
      1. UNDERGROUND
      2. IN CONCRETE SLABS AND MASONRY
   e. RIGID GALVANIZED STEEL CONDUIT WITH GALVANIZED CONNECTORS AND COUPLINGS SHALL BE USED EXPOSED ON EXTERIOR OF BUILDING AND IN AREAS WHERE SPECIFICALLY REQUIRED IN THE NATIONAL ELECTRICAL CODE. PROVIDE COMPRESSION TYPE FITTINGS WHEN USED IN DAMP OR WET LOCATIONS.
   F. GALVANIZED STEEL EMT CONDUIT WITH GALVANIZED STEEL CONNECTORS AND COUPLINGS SHALL BE USED IN THE FOLLOWING LOCATIONS:
      1. ALL LOCATIONS EXCEPT AS INDICATED ABOVE.

      PROVIDE COMPRESSION TYPE FITTINGS WHEN LOCATED IN DAMP OR WET LOCATIONS.
   g. WHERE ELECTRICAL OR LOW VOLTAGE WIRING OR CABLE PASSES THRU A CONCRETE, CONCRETE BLOCK, BRICK OR SIMILAR TYPE WALL OR FLOOR/CEILING ASSEMBLY, WIRING SHALL BE RUN IN PVC CONDUIT OR A SUITABLE METAL SLEEVE.
   h. PROVIDE A CODE SIZE GREEN GROUND CONDUCTOR IN ALL CONDUIT. INCREASE CONDUIT SIZE, IF REQUIRED, TO ACCOMMODATE THIS GROUND CONDUCTOR.
   i. ALL ELECTRICAL AND LOW VOLTAGE PENETRATIONS OF FIRE RATED WALLS, PARTITIONS, FLOORS OR CEILINGS AND ELECTRICAL AND LOW VOLTAGE INSTALLATIONS IN HOLLOW SPACES, VERTICAL SHAFTS, AND VENTILATION OR AIR HANDLING DUCTS SHALL BE MADE TO PREVENT THE POSSIBLE SPREAD OF FIRE OR SMOKE AND TOXIC FUMES. FIRE STOPPING MATERIALS USED SHALL BE 3M BRAND CP–25 FIRE BARRIER CAULK OR 3M BRAND FIRE WRAP INSTALLED IN AN APPROVED METHOD IN ACCORDANCE WITH NEC ARTICLES 300–21, 800–3(c), 110–3(b), UL AND THE AUTHORITY HAVING JURISDICTION. IN ADDITION TO THE REQUIRED FIRE CAULKING OR FIRE WRAP, ALL ELECTRICAL AND LOW VOLTAGE WIRING OR CABLE PASSING THROUGH FIRE RATED STUD WALLS OR FIRE RATED STUD CEILINGS/FLOORS SHALL BE RUN IN EMT CONDUIT OR A SUITABLE METAL SLEEVE; ALL ELECTRICAL AND LOW VOLTAGE WIRING OR CABLE PASSING THROUGH FIRE RATED CONCRETE, CONCRETE BLOCK, OR BRICK WALLS OR FIRE RATED CONCRETE CEILINGS/FLOORS SHALL BE RUN IN SCHEDULE 40 PVC CONDUIT, METAL CONDUIT, OR A SUITABLE METAL SLEEVE. SEE FIRE RATED WALL DETAILS FOR MORE INFORMATION.

6. NOT USED

7. VISIT THE SITE SO AS TO HAVE A FULL UNDERSTANDING OF THE WORK IN CONNECTION WITH THE EXISTING SITE.

8. GUARANTEE WORK TO BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER DATE OF FINAL ACCEPTANCE OF THE WORK.

9. ELECTRICAL OUTLET BOXES LOCATED ON OPPOSITE SIDES OF FIRE RATED WALLS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF 24 INCHES, UNLESS APPROVED OTHERWISE BY THE AUTHORITY HAVING JURISDICTION.

10. EXTERIOR LIGHTS SHALL BE CONTROLLED BY A PHOTO–CELL TO TURN THE LIGHTS ON AND OFF. CERTAIN LESS ESSENTIAL LIGHTS SHALL BE TURNED OFF AFTER 11:00 BY AN ASTRONOMICAL TIME SWITCH. ASTRONOMICAL TIME SWITCH SHALL HAVE THE FOLLOWING FUNCTIONS:
    1. MINIMUM 7–DAY CLOCK
    2. BE CAPABLE OF BEING SET FOR SEVEN DIFFERENT DAY TYPE/WEEK
    3. INCORPORATE AN AUTOMATIC HOLIDAY "SHUTOFF" FEATURE
    4. HAVE PROGRAM BACKUP CAPABILITIES FOR NOT FEWER THAN 10 HRS.
    5. HAVE A MANUAL OVERRIDE SWITCH AND SHALL PERMIT THE CONTROLLED LIGHTING TO REMAIN ON FOR NOT MORE THAN 2 HOURS.

    INSTALL RELAYS AND TIMESWITCH IN 20" W X 36" T X 6" DEEP METAL WEATHERPROOF ENCLOSURE.

11. INSTALLATION OF TELEPHONE FACILITIES:
    a. THE TELEPHONE SYSTEM REQUIRED CONSISTS OF TELEPHONE CONDUIT AND WIRING EXTENDING FROM OUTLETS TO TELEPHONE TERMINAL BOARDS. WORK SHALL INCLUDE ALL TERMINATION EQUIPMENT AT TELEPHONE SPACES AND ALL COVER PLATES WITH PLUG–IN DEVICES. TELEPHONE SYSTEM PANEL SHALL BE PROVIDED BY OWNER.
    b. ALL TELEPHONE CONDUIT SHALL BE 1" SIZE UNLESS NOTED LARGER ON THE DRAWINGS. CONDUIT SHALL EITHER BE STUBBED OUT ABOVE LIFT–OUT CEILING OR EXTENDED TO TELEPHONE SPACES AS SHOWN ON THE DRAWINGS.
    c. ALL PHONE OUTLET BOXES SHALL BE 2–GANG TYPE WITH 1–GANG DEVICE RING AND PROVIDED WITH BOTH TELEPHONE AND COMPUTER JACKS FOR USE BY THE OWNER. COLOR OF PLATES SHALL MATCH ELECTRICAL DEVICES.
    d. TELEPHONE TERMINAL BOARDS SHALL CONSIST OF 3/4" MARINE PLYWOOD BOARD BOLTED TO WALL AND PAINTED WITH TWO COATS OF PAINT. PROVIDE UNISTRUT P7000 STRIP ABOVE AND BELOW PANEL TO SECURE CONDUIT. ALL WIRING SHALL BE NEATLY FORMED, LACED AND MADE UP ON BOLT AND NUT 110 TERMINAL BLOCKS. TAG ALL CONDUCTORS. ALL CONDUCTORS SHALL TERMINATE ON TERMINAL STRIPS WITH SPADE LUGS OF ADEQUATE SIZE FOR ALL INCOMING AND OUTGOING CONDUCTORS.
    e. EACH TELEPHONE OUTLET SHALL HAVE ONE CAT 6 COMPLIANT "PLENUM RATED" CABLE EXTENDING TO TERMINAL SPACE. CONDUCTORS SHALL BE INSULATED WITH A COLOR CODED HIGH DENSITY POLYETHYLENE JACKET WITH A PVC OUTER JACKET. IN ADDITION, FROM EACH SUB TELEPHONE TERMINAL SPACE THROUGHOUT THE BUILDING, PROVIDE A MULTI–CONDUCTOR TRUNK LINE TO THE MAIN SERVICE ENTRANCE TELEPHONE SPACE. CABLE SHALL CONSISTS OF, AT THE MINIMUM, ADEQUATE CAPACITY TO ACCOMMODATE THE NUMBER OF TELEPHONE OUTLETS SHOWN PLUS 50% SPARE CAPACITY. INSTALL ALL TELEPHONE TRUNK LINES IN CONDUIT.
    f. CONTRACTOR SHALL PAY ALL REQUIRED FEES RELATING TO THE TELEPHONE SEVICE AS SHOWN ON THE DRAWINGS AND AS DESCRIBED HEREIN.
    g. PROVIDE 3/4", 1 #6 BARE GROUND WIRE FROM MAIN TELEPHONE TERMINAL BOARD TO SERVICE GROUNDING ELECTRODE SYSTEM BONDING THERETO.

12. INSTALLATION OF CABLE TV FACILITIES.
    a. THE TELEVISION SYSTEM (IF REQUIRED) SHALL BE AS DIRECTED BY OWNER.

13. INSTALLATION OF COMPUTER NETWORK FACILITIES.
    a. THE COMPUTER NETWORK SYSTEM REQUIRED SHALL BE PROVIDED BY THE OWNER.

14. INSTALLATION OF SECURITY SYSTEM FACILITIES.
    a. THE SECURITY SYSTEM (IF REQUIRED) SHALL BE PROVIDED BY THE OWNER.

15. COORDINATE WORK WITH THE LOCAL ELECTRIC SYSTEM AND PROVIDE ALL METERING PROVISIONS REQUIRED BY THEM. CONFORM TO THEIR REQUIREMENTS. IT IS THE OWNER'S RESPONSIBILITY TO APPLY FOR NEW ELECTRICAL SERVICE INSTALLATION AFTER RECEIVING THE CONTRACT DRAWINGS. THE APPLICATION FOR NEW SERVICE SHOULD BE PROCURED AS SOON AS POSSIBLE TO AVOID ANY LEAD–TIME REQUIREMENTS FOR EQUIPMENT SUPPLIED BY THE LOCAL UTILITY.

16. FURNISH CATALOG SHEETS OR CUTS (6 SETS) OF THE FOLLOWING:
    a. LIGHTING FIXTURES & EXIT SIGNS.
    b. PANELBOARDS.
    c. WIRING DEVICES.
    d. TIME SWITCHES

17. CONFORM TO ALL STATE, NATIONAL AND LOCAL CODES.

18. SECURE AND PAY ALL NECESSARY FEES AND PERMITS.

19. ALL MATERIALS EMPLOYED SHALL BE NEW & UNUSED AND BE UL LISTED AND APPROVED AND BEAR THE UL OFFICIAL LABEL.

20. THE SERVICE ENTRANCE SHALL BE GROUNDED WITH A #3/0 AWG SOFT DRAWN COPPER, STRANDED AND BARE CONDUCTOR. THE SERVICE GROUNDING CONDUCTOR SHALL EXTEND TO A DRIVEN GROUND MAT CONSISTING OF TWO DRIVEN 8'–0 X 5/8" DIAMETER COPPER CLAD GROUND RODS SEPARATED BY NO LESS THAN 6'. EXTEND CONDUCTOR ALSO TO NEAREST COLD WATER PIPE, GROUNDED, STRUCTURAL STEEL, CONCRETE ENCASED FOUNDATION RE–BAR, AND INTERIOR METAL NATURAL GAS PIPING, BONDING THERETO. PROVIDE CODE SIZE BONDING JUMPER AROUND WATER METER.

21. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IF ANY CHANGES ARE MADE IN THE FIELD THAT ARE CONTRARY TO THE CONTRACT DRAWINGS.

22. EQUAL PRODUCTS: THOSE ITEMS ON THE DRAWINGS OR IN THESE SPECIFICATIONS DESIGNATING PARTICULAR CATALOG NUMBERS LIMIT THEIR USE ONLY AS TO DESIGN, WORKMANSHIP AND QUALITY, NOT MANUFACTURER.

23. COORDINATION WITH OTHER TRADES TO THE FULLEST OF ABILITY IN RELATION WITH OTHERS TO RESULT IN A PROFESSIONAL INSTALLATION SHALL BE COMPLETE, AND MORE SPECIFICALLY, AS FOLLOWS:
    1. THE DRAWINGS AND SPECIFICATIONS ARE BASED ON THE BEST INFORMATION AVAILABLE WHEN PREPARED. FREQUENTLY MINOR CHANGES OCCUR WITH RESPECT TO THE ARCHITECTURAL PLANS, CONSTRUCTION AND THE REQUIREMENTS OF EQUIPMENT FURNISHED BY OTHERS. THE CONTRACTOR SHALL RECOGNIZE THIS IN BIDDING, SUPERVISING AND IN PLANNING CONSTRUCTION.
    2. BEFORE LOCATING CONDUIT RUNS, BOXES, ETC. THE ARCHITECTURAL DRAWINGS SHALL BE FULLY CHECKED TO SEE THAT THEY ARE IN ACORD WITH ELECTRICAL DRAWINGS. REQUIRED ADJUSTMENTS SHALL BE MADE WITH THE GENERAL CONTRACTOR'S SUPERINTENDENT AND WITH THE OWNER'S REPRESENTATIVE.
    3. BEFORE PROCEEDING WITH THE WIRING FOR MECHANICAL TRADES, EACH ITEM REQUIRING ELECTRICAL WORK SHALL BE REVIEWED WITH THOSE RESPONSIBLE FOR THEIR INSTALLATION.

       THE CONTRACTOR SHALL BECOME WELL ACQUAINTED WITH THEIR CHARACTERISTICS, LOCATION, AND ARRANGEMENT FOR MOUNTING. CHANGES IN WIRING SHALL BE REVIEWED WITH THE OWNER'S REPRESENTATIVE FOR AUTHORIZATION. THIS APPLIES ALSO TO ALL EQUIPMENT FOR WHICH WIRING IS REQUIRED SUCH AS HVAC UNITS, WATER HEATING, PUMPS, THERMOSTATS, MOTORS, PUSH BUTTONS, ETC., AS THEY OCCUR.

24. ALLOWANCE FOR CONTINGENCIES: NO CHANGES IN CONTRACT PRICE WILL BE ALLOWED FOR ALTERNATE WORK WHICH REQUIRES APPROXIMATELY THE SAME WORK. AN ADEQUATE ALLOWANCE SHALL BE INCLUDED IN THE BID PRICE FOR EACH CONTINGENCY AND FOR ANY ADDITIONAL WORK REQUIRED.

25. RECORD DRAWINGS: THE JOB SUPERVISOR SHALL MAINTAIN A SET OF PRINTS ON THE JOB TO BE USED TO ILLUSTRATE AND NOTE JOB CHANGES AS THEY OCCUR. THIS SHALL INCLUDE THE LOCATIONS OF CONCEALED OR UNDERGROUND LINES SIZED OVER 1", AND ANY OTHER INFORMATION NECESSARY TO RECORD THE JOB AS ACTUALLY INSTALLED. UPON COMPLETION OF THE PRINTS, THE CONTRACTOR SHALL FURNISH TO THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE, A SET OF REPRODUCIBLE DRAWINGS CONTAINING THE ABOVE MENTIONED FIELD NOTES.

26. WORK IN CONNECTION WITH EQUIPMENT FURNISHED BY OTHERS.
    a. MECHANICAL:

       FURNISH AND INSTALL ALL NECESSARY WIRING AND OVER CURRENT DEVICES FOR THE SUPPLY AND CONTROL OF ALL MECHANICAL WORK, INCLUDING PLUMBING, HEATING, AIR CONDITIONING AND VENTILATION. FURNISH AND INSTALL DISCONNECT SWITCHES FOR MOTORS WHERE REQUIRED BY THE CODES. THE CONTRACTOR SHALL MAKE PROVISIONS FOR VARIATIONS IN THE MECHANICAL EQUIPMENT AND MAKE CONNECTIONS AS REQUIRED.

    b. MOTOR WIRING:
       1. SERVICES TO EQUIPMENT NOT IN CONTRACT SHALL BE CHECKED OUT AGAINST THAT REQUIRED BY EQUIPMENT PRIOR TO SERVICE CONNECTION. SHOULD THE EQUIPMENT REQUIRE SERVICE DIFFERENT FROM THAT PROVIDED, THE CONTRACTOR SHALL CALL THE FACT TO ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO CONNECTION OF THE SERVICE. CHECK EQUIPMENT TO DETERMINE WHETHER PROPER CONTROL AND SAFETY DEVICES ARE PROVIDED TO INSURE PROPER OPERATION. ASSIST OWNER IN THE INITIAL OPERATION OF THE EQUIPMENT, AND MAKE ANY NECESSARY ADJUSTMENTS TO THE SERVICE FOR PROPER OPERATION.
       2. MOTOR AND MOTOR CONTROLS, MANUAL MOTOR STARTERS AND DISCONNECT SWITCHES: THE MANUAL MOTOR STARTERS SHALL BE GENERAL ELECTRICAL COMPANY'S CR SERIES WITH PROPER HEATERS, MOUNTED IN A TWO–GANG BOX WITH A 120–VOLT PILOT LIGHT. THE DISCONNECT SWITCHES SHALL BE THE GENERAL DUTY TYPE, WITH ECONOMY FUSE COMPANY "DUAL–ELEMENT FUSES WITH A GENERAL PURPOSE ENCLOSURE, OR EQUAL BY SQUARE D OR ITE COMPANY.
       3. AIR CONDITIONING AND HEATING EQUIPMENT: ALL AIR AND HEATING EQUIPMENT SHALL HAVE FUSED DISCONNECT SWITCHES OR BREAKERS INSTALLED AT THE UNIT. THESE SWITCHES OR BREAKERS SHALL BE SIZED AND BE OF THE TYPE AS IT APPEARS ON THE LABEL OF THE EQUIPMENT.

27. RELOCATION OF EXISTING SITE UTILITIES IS NOT PROVIDED IN CONTRACT DOCUMENTS UNLESS SPECIFICALLY DETAILED ON DRAWINGS.

28. VOLTAGE DROP:
    a. CONDUCTORS FOR BRANCH CIRCUITS SHALL BE SIZED TO PREVENT A VOLTAGE DROP EXCEEDING 3 PERCENT AT THE FARTHEST OUTLET OF POWER, HEATING AND LIGHTING LOADS OR COMBINATION OF SUCH LOADS, AND WHERE THE MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST OUTLET DOES NOT EXCEED 5 PERCENT. (2017 NATIONAL ELECTRICAL CODE ARTCLE 210.19(A) AND 2018 INTERNATIONAL ENERGY CONSERVATION CODE SECTION C405.9.
       1. BRANCH CIRCUITS (120 VOLTS): CONTRACTOR SHALL INCREASE CONDUCTOR SIZES FOR HOMERUNS OVER 75'–0" IN LENGTH FOR 120 VOLT, 1–PHASE CIRCUITS TO PREVENT VOLTAGE DROP FROM EXCEEDING 3% VD (3.6 VOLTS) AS REQUIRED BY NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL USE #10 AWG CU CONDUCTORS FOR RUNS OVER 75'–0" BUT LESS THAN 100'–0", #8 AWG CU CONDUCTORS FOR RUNS OVER 100" BUT LESS THAN 150'–0", AND #6 AWG CU CONDUCTORS FOR RUNS OVER 150'–0" IN LENGTH.
       2. BRANCH CIRCUITS (208 VOLTS, 1–PHASE): CONTRACTOR SHALL INCREASE CONDUCTOR SIZES FOR HOMERUNS OVER 100'–0" IN LENGTH FOR 208 VOLT, 1–PHASE CIRCUITS TO PREVENT VOLTAGE DROP FROM EXCEEDING 3% VD (6.24 VOLTS) AS REQUIRED BY NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL USE #10 AWG CU CONDUCTORS FOR RUNS OVER 100'–0" BUT LESS THAN 170'–0", #8 AWG CU CONDUCTORS FOR RUNS OVER 170'–0" BUT LESS THAN 250'–0", AND #6 AWG CU CONDUCTORS FOR RUNS OVER 250'–0" IN LENGTH.
       3. FEEDER CIRCUITS: FEEDERS CIRCUITS HAVE BEEN SIZED TO PREVENT MAXIMUM OF 2% VOLTAGE DROP (MAXIMUM OF 4.16 VOLT DROP) FOR 120/208 VOLTS, 3–PHASE, 4–WIRE SERVICE.

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Drawing Description.....
SCHEDULES & DETAILS

REVISIONS

No.	Date

Plot Scale	NONE
Drn.	KN
Appd.	KN
Project No.	23046
Date	5 JAN 24
Sh. No.	
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