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DIVISION 16 ELECTRICAL
16010 GENERAL PROVISIONS
.01 EXCEPT WHERE PORTIONS OF THESE SPECIFICATIONS ARE MORE EXACTING, WORK OF THIS DIVISION SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE GENERAL SCOPE OF WORK. BEFORE SUBMITTING PROPOSAL, EXAMINE ALL DRAWINGS RELATING TO THIS WORK, VERIFY ALL GOVERNING CONDITIONS AT THE SITE, DETERMINE EXACT EXTENT OF WORK REQUIRED FOR THE LOCAL UTILITY COMPANIES BECOME FULLY INFORMED AS TO THE EXTENT AND CHARACTER OF THE WORK REQUIRED AND ITS RELATION TO WORK OF OTHER TRADES. NO CONSIDERATION WILL BE GRANTED FOR ANY ALLOTTED MISUNDERSTANDINGS OF THE MATERIALS TO BE FURNISHED OR WORK TO BE DONE, IT BEING UNDERSTOOD THAT THE SUBMISSION OF A PROPOSAL IS AN AGREEMENT TO ALL CONDITIONS REFERRED TO HEREIN OR INDICATED ON THE DRAWINGS.
.02 REVIEW THE DRAWINGS AND SPECIFICATIONS OF ALL TRADES, PARTICULARLY THOSE SECTIONS DESCRIBING ELECTRICALLY OPERATED EQUIPMENT AND BECOME FAMILIAR WITH WORK CALLED UPON THEREIN TO DO. AT THE CONCLUSION OF THE WORK, BE RESPONSIBLE FOR THE PROPER WIRING AND FUNCTIONING OF ALL ELECTRICALLY OPERATED EQUIPMENT FURNISHED AND/OR INSTALLED UNDER THIS CONTRACT.
.03 NO EXTRA COMPENSATION WILL BE PAID FOR CONDITIONS EXISTING BEFORE THE CONTRACT IS SIGNED. THIS INCLUDES BOTH EXISTING SITE CONDITIONS AND ARCHITECTURAL CONDITIONS OF THE NEW BUILDING.
.04 THE CONTRACTOR SHALL OBTAIN ALL PERMITS FOR HIS WORK UNDER THE CONTRACT, AND SHALL PAY ALL EXPENSES IN CONNECTION THEREWITH. HE SHALL BE RESPONSIBLE FOR ALL NOTICE TO THE INSTALLATION AUTHORITIES AND TO THE ARCHITECT/ENGINEER SO THAT THE WORK MAY BE INSPECTED BEFORE COVERING. THE CONTRACTOR SHALL FURNISH OWNER WITH CERTIFICATES OF INSPECTION.
.05 NO DEVIATION FROM DRAWING AND/OR SPECIFICATIONS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL FROM ARCHITECT/ENGINEER.
.06 ALL PERMIT FEES, TEMPORARY SERVICE, INSPECTION FEES AND OTHER REQUIREMENTS SHALL BE PAID AND COMPLETED BY THE ELECTRICAL CONTRACTOR. EVIDENCE OF COMPLETION WILL BE APPARENT PRIOR TO FINAL ACCEPTANCE OF WORK. ALL CERTIFICATES SHALL BE FORWARDED TO OWNER.
.07 THE WORK OF THIS CONTRACTOR SHALL CONSIST OF FURNISHING EVERYTHING NECESSARY FOR A COMPLETE OPERATING ELECTRICAL SYSTEM OF SHELL AND LANDLORD WORK LETTER, IN STRICT ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. IT INCLUDES ALL SUCH WORK WHETHER LISTED UNDER ANY OTHER DOCUMENT FORMING A PART OF THE SPECIFICATION AND CONTRACT. HIS WORK, IN THE MAIN, SHALL INCLUDE, BUT IS NOT RESTRICTED TO, THE FOLLOWING ITEMS:
A. FURNISHING A TEMPORARY SERVICE FOR THE USE OF ALL TRADES DURING CONSTRUCTION, AS REQUIRED BY THE GENERAL CONTRACTOR. GENERAL CONTRACTOR SHALL PAY UTILITY USE COSTS UP TO TIME OF OCCUPANCY.
B. FURNISHING A COMPLETE ELECTRICAL DISTRIBUTION SYSTEM FOR LIGHT AND POWER, FROM POINT OF SERVICE THROUGH DISTRIBUTION SYSTEM TO PANELS, AND TO ALL OUTLETS, EQUIPMENT AND DEVICES AS INDICATED ON THE DRAWINGS.
C. ELECTRICAL CONNECTIONS FOR OTHER TRADES.
D. CONNECTION OF ALL MOTORS, STARTERS, CONTROLS, PILOT DEVICES OR DISCONNECTS, WHETHER FURNISHED BY THIS CONTRACTOR, OWNER, OTHER SUBCONTRACTOR OR OTHER PARTIES SUCH AS EQUIPMENT SUPPLIERS.
E. ALL ELECTRICAL WORK INCIDENTAL TO OTHER TRADES FOR A COMPLETE WORKING INSTALLATION OF THEIR ELECTRICALLY DRIVEN EQUIPMENT.
F. FURNISHING AND INSTALLING ALL CONDUCTORS AND RACEWAYS FOR ELECTRICAL EQUIPMENT.
G. FURNISHING, INSTALLING AND LAMPING OF ALL FLOODLIGHTS, FLOODLIGHT POLES AND LIGHTING FIXTURES AS SCHEDULED ON THE DRAWINGS AND IN ACCORDANCE WITH ARCHITECTURAL DETAILS. FURNISHING ALL LAMPS, FLUORESCENT, AND INCANDESCENT.
H. CONNECTING OF ALL AIR CONDITIONING, HEATING, PUMPING, VENTILATION AND EXHAUST FAN CONTROLS AS SPECIFIED AND CALLED FOR ON THE DRAWINGS AND SPECIFIED HEREIN.

J. TEMPORARY AND EMERGENCY WIRING AS REQUIRED.
K. FURNISHING AND INSTALLING ALL AUXILIARY AND COMMUNICATION SYSTEMS AS INDICATED ON THE DRAWINGS.
L. FURNISHING AND INSTALLING ALL PANELS, METERS, ETC., AS SHOWN ON THE DRAWINGS.
M. FURNISH AND INSTALL TRANSFORMERS FOR ALL EQUIPMENT WHETHER FURNISHED BY THIS CONTRACTOR, THE OWNER, OR OTHER PARTIES, WHERE SUCH EQUIPMENT HAS A VOLTAGE RATING UNSUITABLE TO THE SYSTEM IN WHICH IT IS APPLIED.
N. SHOP DRAWINGS: SUBMIT, AT ONE TIME, SHOP AND DETAIL DRAWINGS, FACTORY CERTIFIED PRINTS AND MATERIALS LISTS FOR THE FOLLOWING ITEMS: PANELBOARDS, SAFETY SWITCHES, WIRING DEVICES, LIGHTING FIXTURES. ALL SUBMITTALS MUST BE IDENTIFIED BY SPECIFICATION SECTION AND PARAGRAPH NUMBER AND/OR DRAWING NUMBER AND SCHEDULED NUMBER AND NAME ALONG WITH THE MANUFACTURER'S NAME.
O. MANUALS AND CHARTS: FURNISH OWNER ALL OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, LITERATURE AND INFORMATION PERTAINING TO ALL EQUIPMENT.

16012 CODES AND STANDARDS
.01 THE WORK PERFORMED SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE. NOTHING CONTAINED IN THESE SPECIFICATIONS OR DRAWINGS SHALL BE SO CONSTRUED AS TO CONFLICT WITH ANY LOCAL, MUNICIPAL, STATE, UTILITY COMPANY AND NATIONAL BOARD OF THE UNDERWRITERS REGULATIONS GOVERNING THE INSTALLATION OF THE WORK SPECIFIED HEREIN. ALL SUCH LAWS, ORDINANCES, AND REGULATIONS, WHERE THEY APPLY TO THIS WORK, ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS. ALL SUCH REQUIREMENTS SHALL BE SATISFIED AT NO ADDITIONAL EXPENSE TO THE OWNER.
16020 ELECTRICAL SYSTEMS SCHEDULE
.01 REFER TO THE DRAWINGS FOR AIR CONDITIONING WIRING DIAGRAM, PANEL BOARD SCHEDULE, RISER DIAGRAM, EQUIPMENT SCHEDULE, ELECTRICAL SYSTEMS REQUIREMENTS, ETC.
16030 TESTS
.01 PROVIDE ALL NECESSARY INSTRUMENTS AND SPECIAL APPARATUS TO CONDUCT ANY TEST THAT MAY BE REQUIRED TO INSURE THE SYSTEM IS FREE OF ALL IMPROPER GROUNDS AND SHORT CIRCUITS AND THAT ALL FEEDERS ARE PROPERLY BALANCED. THE SYSTEM INSTALLED SHALL BE CHECKED FOR QUALITY, CAPACITY, AND COMPLETENESS TO CONFORM WITH THE FULL REQUIREMENTS AND INTENT OF THE DRAWINGS AND SPECIFICATIONS.
16100 BASIC METHODS AND MATERIALS
.01 ELECTRICAL MATERIALS, APPLIANCES, EQUIPMENT DEVICES FOR WHICH THERE ARE UNDERWRITER'S LABORATORIES STANDARD REQUIREMENTS SHALL HAVE LABELS ATTACHED TO INDICATE COMPLIANCE WITH THESE REQUIREMENTS, WHERE LABELS DO NOT BEAR SUCH A LABEL, CERTIFICATE OF COMPLIANCE SHALL BE FURNISHED.
.02 ALL MATERIALS SHALL BE NEW AND OF FIRST QUALITY.
.03 SUBMIT MANUFACTURER'S DATA AND CATALOG CUTS ON ALL ITEMS INCLUDED IN THIS SECTION PRIOR TO COMMENCING WORK.
16110 RACEWAYS
.01 ALL CONDUCTORS SHALL BE CONTAINED IN RACEWAYS.
.02 ALL CONDUIT RACEWAYS IN OR BELOW FLOOR SLAB AND RUN BELOW EXTERIOR FINISHED GRADE SHALL BE P.V.C. EXCEPT FOR FLSs AND RISERS WHICH SHALL BE RIGID GALVANIZED CONDUIT. CONDUIT RISERS SHALL RUN UP 6" ABOVE GROUND FLOOR SLAB WHEN CONCEALED AND 48" ABOVE GROUND FLOOR SLAB WHEN EXPOSED ON WALL. ALL RIGID GALVANIZED CONDUIT RUN BELOW SLAB OR FINISHED EXTERIOR GRADE SHALL BE PAINTED WITH TWO (2) COATS OF BITUMASTIC PAINT. THIS PAINTING SHALL BE APPLIED TO CONDUIT UP TO A POINT 2" ABOVE FLOOR SLAB. CONDUITS RUN BELOW FLOOR SLAB SHALL HAVE A MINIMUM COVER OF 12" AND THOSE RUN BELOW EXTERIOR FINISHED GRADE SHALL HAVE A MINIMUM COVER OF 24" IN NON-VEHICLE TRAFFIC AREAS AND 30" IN VEHICLE TRAFFIC AREAS. INSTALLATION OF P.V.C. CONDUIT IN TRENCHES SHALL HAVE 2" OF CLEAN SAND FILL ALL AROUND THEN BACKFILL TRENCH WITH FINE BACKFILL (NO ROCKS LARGER THAN 1/4" DIAMETER). CONTRACTOR SHALL FILL EXTERIOR TRENCHES TO WITHIN 6" OF TOP (FINISHED GRADE) THEN LAY A YELLOW RIBBON TAPE (USED IN INDUSTRY FOR THIS PURPOSE) ALONG TRENCH, THEN FINISH BACKFILL.
.03 RIGID CONDUIT SHALL BE HOT-DIPPED GALVANIZED, IN 1/2" THREADS. P.V.C. SHALL BE SCHEDULE 40.
.04 FLEXIBLE METALLIC CONDUIT (GREENFIELD) SHALL BE USED FOR ALL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT BUT IN LENGTHS UP TO EXCEED 10 FEET OF RIGID P.V.C. JACKETS FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR ALL EXPOSED LOCATIONS.
.05 ELECTRICAL METALLIC TUBING (EMT) MAY BE USED FOR ALL PIPES IN THIS SECTION AS INDICATED ABOVE. ALL PIPES SHALL BE EMT.
.06 ALL RACEWAYS SHALL BE RUNDOWN AND FINISHED AREAS UNLESS NOTED.
.07 WHERE RACEWAYS ARE NOTED OR INDICATED, THEY SHALL PRESENT A NEAT APPEARANCE, AND ALL RUNS BOTH EXPOSED AND CONCEALED SHALL BE PARALLEL OR PERPENDICULAR TO THE BUILDING LINES AND TO EACH OTHER WITHOUT INTERFERENCE WITH OTHER TRADES OR EQUIPMENT. SUPPORTS SHALL BE ONE (1) HOLE CAST STRAPS, KIDORF OR EQUAL SURFACE OR TRAPEZOID HANGERS, SPLIT HANGERS WITH APPROPRIATE ROD HANGERS AND FITTINGS. NO PERFORATED STRAP IRON.
.08 ALL RACEWAYS SHALL LAY FLAT TO RUNNING SURFACES AND SHALL BE KEPT FLAT WHERE ENTERING BOXES, ETC.
.09 DURING CONSTRUCTION, ALL OPEN ENDS OF CONDUIT SHALL BE KEPT PLUGGED OR CAPPED. USE 1/8" 1470 SERIES PLUGS.

16120 CONDUCTORS
.01 ALL CONDUCTORS SHALL BE MINIMUM 98 % CONDUCTIVITY COPPER.
.02 ALL WIRE AND CABLE SHALL HAVE INSULATION TYPE AS LISTED BELOW.
.03 ALL BRANCH CIRCUIT AND FEEDER WIRING SHALL BE COLOR CODED THROUGHOUT (SEE GENERAL NOTES ON DRAWINGS)
.04 NO WIRE SMALLER THAN #12 SHALL BE USED EXCEPT FOR CONTROL WIRING.
.05 BRANCH CIRCUIT RUNS LONGER THAN 100 FEET FROM PANEL TO FIRST OUTLET SHALL BE RUN WITH #10 WIRE.
.06 ALL INSULATION SHALL BE RATED FOR 90V UNLESS OTHERWISE NOTED.
.07 PARTICULAR CARE SHALL BE EXERCISED IN THE JOINING OF THE BRANCH CIRCUIT COMMON NEUTRALS.
.08 CONDUCTOR TYPES:
A. COMBINATION TYPE "THHN/THWN" FOR GENERAL USE.
B. TYPE "THW" FOR THE USE IN ALL SIZES #6 AND ABOVE.
C. BRANCH CIRCUIT WIRE MAY BE RUN IN FIXTURE CHANNELS (FLUOR).
D. ALUMINUM CONDUCTORS NOT ALLOWED ON THIS PROJECT.
.09 CONDUCTOR INSTALLATION SIZES:
A. SIZES SHOWN ON DRAWINGS ARE MINIMUM AND SHALL NOT BE DECREASED UNDER ANY CIRCUMSTANCES.
B. CHANGES IN EQUIPMENT FURNISHED BY OTHERS MAY REQUIRE CHANGES IN CONDUCTOR SIZES. IN SUCH CASE, THE CONTRACTOR SHALL NOTIFY THE OWNER.
C. BRANCH CIRCUITS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS. CONDUCTOR SIZES SHALL BE AS NOTED IN THE EQUIPMENT SCHEDULES AND/OR PANEL LISTINGS.
D. CONDUCTORS USED FOR WIRING OF MOTOR CONTROLS MAY BE #14 AWG UNLESS NOTED ON PLANS.
.10 CONDUCTORS INSTALLATION JOINTS:
A. JOINTS: BRANCH CIRCUIT SPLICES SHALL UTILIZE SCOTCH (LOCK) WIRE NUTS.
B. NO JOINTS OR TAPS WILL BE ALLOWED IN FEEDER RUNS, EXCEPT IN JUNCTION OR PULL BOXES.
C. ALL FEEDER SPLICES AND TERMINATION SHALL BE MADE MECHANICALLY USING COMPRESSION TYPE SLEEVES OR LUGS AND CONNECTION TO PANELS AND SWITCHES, BUNDLY OR 1/8" (HYPRESS) EQUIPMENT IS APPROVED. HYLUG - HYLUG. INSULATION RESISTANCE OF JOINTS SHALL BE EQUAL TO OR GREATER THAN THAT OF THE CONDUCTORS JOINED - COVERING SHALL BE SCOTCH #33 TAPE OVER HALF-LAPPED COVERING OF RUBBER TAPE.
.11 CONDUCTORS INSTALLATION METHODS:
A. NO CONDUCTORS SHALL BE INSTALLED UNTIL ALL ROUGH WORK BY OTHER TRADES IS IN PLACE AND ROOT DECKS ARE IN PLACE.
B. AT EACH OUTLET, A LOOP OF WIRE NOT LESS THAN 8 INCHES IN LENGTH SHALL BE LEFT FOR CONNECTION TO FIXTURES AND/OR OTHER DEVICES.
C. ALL CONDUCTORS SHALL BE CONTAINED IN RACEWAYS.
D. ALL RACEWAYS SHALL BE THOROUGHLY SWABBED OUT TO REMOVE MOISTURE BEFORE WIRE OR CABLES ARE DRAWN INTO PLACE.
.12 UNDERSLAB SERVICE: ELECTRICAL CONDUIT PASSING BELOW THE "DRAIN ROOM" TO THE EXTERIOR SHALL BE SPACED OR PLACED LOW ENOUGH IN THE CONCRETE FLOOR SLAB TO AVOID DAMAGE BY CORE DRILLING FOR SEATING INSTALLATION. SEE INTERIOR DESIGN DRAWINGS.
.13 ALL PANEL CONDUIT CONTAIN ALL GREEN EQUIPMENT GROUND WIRE AS PER N.E.C.
16300 OUTLET BOXES AND DEVICES
.01 ALL WIRING DEVICES SHALL BE FURNISHED IN ACCORDANCE WITH DRAWINGS. SWITCH PLATES ARE TO BE PLASTER WITH FINISH TO MATCH DEVICE EXCEPT SWITCHES WHICH SHALL BE USED IN RESTROOMS (WOMEN'S AND MEN'S TOILET), AND SIMILAR AREAS.
.02 OUTLET BOXES SHALL BE GALVANIZED STEEL STAMPED BY (4) INCHES SQUARE, 1-1/2 INCHES DEPTH, STEEL CAPED 151 FOR GENERAL USE. LARGER BOXES SHALL BE USED WHERE REQUIRED TO PREVENT UNDEE CROWDING. ALL CONDUITS TYPE "EMT" SHALL BE GALVANIZED STEEL CITY "G" SHALL BE USED FOR ALL SWITCHES. BOXES SIZE AND DEPTH SHALL BE AS REQUIRED BY NATIONAL ELECTRIC CODE AND AS REQUIRED BY THE SPECIFIC DEVICE. BOX COVERS AND PLASTER RINGS ARE TO BE CONCRETE REQUIRED TO INSURE ASSEMBLY FINISHING FLUSH WITH SURFACE AREA.
A. WHERE EXPOSED WIRING IS DONE, CROUSE-HINDS FS BOXES WHICH DO NOT MEET THESE REQUIREMENTS SHALL BE USED WHERE EXPOSED TO WEATHER OR FOR (4) INCH BOXES AND FINISH COVERS.
B. SIZE SHOWN ABOVE ARE MINIMUM ONLY AND SHALL BE INCREASED WHERE NECESSARY DUE TO THE SIZE OF THE DEVICES TO BE COVERED.
C. DIMENSIONS ON DRAWINGS INDICATE APPROXIMATE LOCATIONS ONLY UNLESS EXACT LOCATIONS ARE SPECIFIED ON THE PLANS. VERIFY LOCATIONS WITH ARCHITECTURAL DETAILS.
D. PROPERLY CENTER OUTLETS IN PANELING OR OTHER ARCHITECTURAL FEATURES AS INDICATED ON THE ARCHITECTURAL PLANS.
E. CLEAR TRIM AND CORNERS BY A MINIMUM OF FOUR (4) INCHES WHERE POSSIBLE.
F. MOUNT ALL BOXES SO THAT COVERS AND PLATES WILL MOUNT FLUSH WITH THE BUILDING SURFACES AND CEILING FINISHED PANELS.
G. FURNISH AND INSTALL PLASTER RINGS WHERE REQUIRED.
H. FURNISH SURFACE COVERS, FOR EXPOSED WORK.
I. ALL FIXTURE OUTLETS SHALL BE EQUIPPED WITH "NO-BOLT" TYPE OF FIXTURE STUDS OF SUFFICIENT SIZE TO SUPPORT THE FIXTURE AND/OR DEVICE LOADS.
J. FIXTURE HANGING SYSTEMS TO BE ALL METALLIC.
K. CLOSE ALL OUTLETS DURING THE COURSE OF ROUGH CONSTRUCTION. CONCRETING AND PLASTERING WITH KRAFT PAPER, EXCELOROR OR SLIP-ON BLANK METAL PLATES. THE USE OF NEWSPAPER IS NOT PERMISSIBLE FOR THIS PURPOSE.
L. HEIGHTS OF OUTLETS: UNLESS SPECIFICALLY NOTED OTHERWISE, ALL WALL OUTLETS SHALL BE MOUNTED AT THE FOLLOWING HEIGHTS, MEASURED FROM THE FINISHED FLOOR TO THE CENTER OF THE OUTLET BOX: SWITCHES-48 INCHES; RECEPTACLES-18 INCHES; TELEPHONE OUTLETS-12 INCHES. THE DIMENSIONS GIVEN ABOVE ARE TO BE USED TO COVER THE USUAL INSTALLATION DETAILS OF THE OUTLETS INVOLVED. HOWEVER, THE CONTRACTOR IS TO REFER TO ARCHITECTURAL AND EQUIPMENT DETAILS FOR THE EXACT LOCATION OF ALL OUTLETS BEFORE INSTALLATION OF SAME. MEASUREMENTS ON THE DRAWINGS, OWNER'S INSTRUCTIONS AND DETAIL MEASUREMENTS TAKE PRECEDENCE.

L. ALL WIRING DEVICES TO BE SPECIFICATION GRADE.
N. PROVIDE GASKETS ON W.P. COVERS AND BLANK PLATES.
16134 PANELBOARDS AND MAIN DISTRIBUTION
.01 PANEL CABINETS:
A. CABINETS SHALL BE CONSTRUCTED OF ZINC COATED SHEET STEEL IN ACCORDANCE WITH UL AND NEMA STANDARDS FOR CABINETS, BOXES AND ASSEMBLY.
B. A DIRECTORY HOLDER WITH GLASS COVER AND METAL FRAME SHALL BE FURNISHED ON THE INSIDE OF EACH DOOR. PANEL DIRECTORIES SHALL BE TYPED, HOLDER AND FRAME SHALL BE OF SUITABLE SIZE TO PROPERLY LIST CIRCUIT DESIGNATIONS. PROVIDE FLUSH, STAINLESS STEEL LOCK IN DOOR BEAD FRONT PANEL COVERING BUS & CIRCUIT BREAKER ASSEMBLY TO BE ONE (1) PIECE.
C. PANELS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS.
.02 PANEL BOARDS AND CIRCUIT BREAKERS:
A. INDIVIDUAL CIRCUIT BREAKERS SHALL BE CALIBRATED AT THE FACTORY, SEALED TO PREVENT TAMPING, SIZE AND FRAME AS INDICATED ON THE DRAWINGS.
B. MULTI-POLE BREAKERS SHALL BE OF THE COMMON TRIP TYPE, SIZE AND FRAME AS INDICATED ON THE DRAWINGS.
C. PROVIDE SHUNT TRIP ON MAIN CIRCUIT BREAKER WHERE REQUIRED BY LOCAL CODE.
D. ACCESSORIES SHALL BE FURNISHED AS INDICATED.
E. ALL BUSSETS SHALL BE AS PER MANUFACTURER'S STANDARD.
F. NEUTRAL BAR SHALL BE MOUNTED OPPOSITE THE MAIN LUGS AND SHALL HAVE NUMBERED TERMINALS FOR CONNECTION.
G. PROVIDE GROUND BUS AS CALLED FOR ON DRAWINGS.
.03 SAFETY SWITCHES:
A. SAFETY SWITCHES SHALL BE TYPE HD, FUSIBLE OR NON-FUSIBLE AS INDICATED ON THE DRAWINGS. IN THE SIZES SHOWN, ENCLOSURES SHALL CONFORM TO LOCATION. (NEMA 1 INTERIOR, NEMA 3R EXTERIOR).
B. ALL SWITCHES SHALL BE FURNISHED WITH THE NECESSARY NUMBER OF POLES.
C. SWITCHES SHALL BE INSTALLED WHERE REQUIRED WHETHER SPECIFICALLY CALLED FOR OR IMPLIED BY LOCATION.
D. WEATHERPROOF SAFETY SWITCHES MAY BE NEMA 3R EXTERIOR.
E. ACCEPTABLE MANUFACTURERS ARE: SQUARE D, GE, WESTINGHOUSE, AND CUTLER-HAMMER.
.04 MARKING AND IDENTIFICATION:
A. ALL SWITCHES, PANELBOARDS, CONTROLLER CONTROL PANELS, TIME SWITCHES, CONTACTORS, TELEPHONE AND COMMUNICATION CABINETS SHALL BE CLEARLY AND PERMANENTLY LABELLED IN A NEAT, ORDERLY AND SYSTEMATIC MANNER.
B. IDENTIFICATION SHALL CLEARLY DESIGNATE DEVICES AND EQUIPMENT TO BE USED.
C. PANELBOARDS AND CABINETS SHALL BE MARKED IN THE LETTERS SHOWN ON DRAWINGS AS PER MANUFACTURER'S STANDARD. BLACK PLACED OVER DOORS AND COVERS.
D. QUANTITY OF EACH TYPE OF CABINETS AND SIMILAR LOCATIONS SHALL BE IDENTIFIED AND PERMANENTLY IDENTIFIED AS TO ELECTRICAL CHARACTERISTICS: SYSTEM DESIGNATION, SOURCE AND DESTINATION OF SERVICE.
E. ALL DEVICES SHALL BE MARKED WITH PREPRINTED ADHESIVE MARKERS AS MANUFACTURED BY W.L. BRADY CO., OR THOMAS & BETTS. WHERE PREPRINTED MARKERS ARE NOT AVAILABLE WITH THE PROPER DESIGNATION, 1-1/4 INCH DIAMETER PUNCHED BRASS DISCS SHALL BE USED.
16350 MOTORS AND CONTROLS
.01 WIRE TO AND CONNECT ALL ELECTRICALLY OPERATED EQUIPMENT.
.02 VERIFY PROPER ROTATION OF ALL ROTATING EQUIPMENT.
16390 SUPPORTING DEVICES
.01 REFER TO 16110.09 FOR EXPOSED RACEWAYS. CONCEALED RACEWAYS SHALL BE SUPPORTED USING SAME METHODS AS REQUIRED FOR EXPOSED RACEWAYS, EXCEPT THAT BRANCH CIRCUIT EMT IN CONCEALED LOCATIONS MAY BE SUPPORTED FROM BUILDING STRUCTURAL ELEMENTS WITH CADDY TYPE FITTINGS MANUFACTURED BY ERIC PRODUCTS CO., INC.
.02 OUTLET BOXES SHALL BE SUPPORTED TO BUILDING STRUCTURE USING THROUGH LEAD ANCHORS AND MACHINE BOLTS, TOGGLE BOLTS, WOOD OR SHEET METAL, SCREWS, IF PLACED DIRECTLY ON WOOD OR METAL SURFACE. TWO (2) ANCHORS ARE REQUIRED FOR EACH BOX. WHEN BOXES ARE LOCATED BETWEEN STRUCTURAL SUPPORTS, USE CADDY BOX SUPPORTS.
.03 ALL SUPPORTS, ANCHORS, BOLTS AND HARDWARE SHALL BE SIZED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INFORMATION FOR THE SIZE AND WEIGHT OF THE SUPPORTED OBJECTS.
16450 GROUNDING
.01 REFER TO ELECTRICAL DRAWINGS AND DIAGRAMS FOR GROUNDING CONNECTIONS.
.02 THE CONDUIT SYSTEM AND THE NEUTRAL CONDUCTORS SHALL BE GROUNDED IN ACCORDANCE WITH REQUIREMENTS OF THE NATIONAL ELECTRIC CODE - LATEST EDITION. NEUTRALS OF ALL TRANSFORMER SECONDARIES SHALL BE GROUNDED TO MINIMUM ONE (1) INCH COLD WATER PIPE.
.03 THE GROUND CONNECTION OF THE CONDUIT SYSTEM AND THE NEUTRAL CONDUCTORS SHALL BE MADE AT THE MAIN SERVICE PANELBOARD GROUND BUS.
.04 WHERE THREE (3) PHASE THREE (3) WIRE FEEDERS ARE EXTENDED TO UTILIZATION EQUIPMENT AND APPARATUS, A BONDING CONDUCTOR OF ADEQUATE SIZE, GREEN COLOR, SHALL BE USED TO GROUND THE EQUIPMENT FRAME. THE CONDUCTOR SHALL BE INSTALLED FROM GROUND BUS TO EQUIPMENT FRAME IN THE CIRCUIT RACEWAY.
.05 SEE GENERAL NOTES ON DRAWINGS.
16480 FEEDER CIRCUITS
.01 PROVIDE FEEDERS AS INDICATED ON THE DRAWINGS AND IN SCHEDULES.

GENERAL NOTES:
1. PROVIDE AND PAY FOR ALL PERMITS AND INSPECTION FEES AS REQUIRED.
2. FURNISH ALL LABOR AND MATERIAL TO COMPLETE THE WORK AS SHOWN ON THE DRAWINGS. RECEPTACLES AND SWITCHES SHALL BE LEVISON OR AN APPROVED EQUAL. ALL WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES.
3. GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL NEW LIGHTING FIXTURES UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.
4. ALL ELECTRICAL WORK SHALL BE AS PER NEC 2017.

TELEPHONE AND CABLE TELEVISION
1. TELEPHONE SERVICE IS PART OF THE SHELL BUILDING SCOPE.

16485 BRANCH CIRCUITS
.01 PROVIDE ALL WIRING AND CONNECTIONS TO OUTLETS AND FIXTURES AS INDICATED ON DRAWINGS AND IN SCHEDULES.
16500 LIGHTING - INTERIOR
.01 FURNISH AND INSTALL ALL LIGHTING FIXTURES CALLED FOR BY THE LIGHTING FIXTURE SCHEDULE ON THE SITE. EXTERIOR ELECTRICAL AND INTERIOR ELECTRICAL DESIGN DRAWINGS.
.02 EACH FIXTURE SHALL BE EQUIPPED WITH ANY REQUIRED MOUNTING FRAMES, HARDWARE AND ACCESSORY INSTALLATION ITEMS. FIXTURE MOUNTING FRAMES SHALL BE COMPATIBLE WITH CEILING CONSTRUCTION.
.03 EACH FIXTURE SHALL BE LAMPED WITH NEW LAMPS OF TYPE AND WATTAGE INDICATED ON THE SCHEDULE.
16510 INTERIOR LIGHTING FIXTURES
.01 INSTALL AS INDICATED ON LIGHTING AND REFLECTED CEILING PLANS, DIMENSIONAL REFERENCE POINTS AND TO ARCHITECTURAL DETAILS AND ELEVATIONS.
.02 ALL INTERIOR FIXTURES (WHERE APPLICABLE) SHALL HAVE 100% VIRGIN ACRYLIC PRISMATIC DIFFUSERS. POLYSTYRENE OR VINYL WILL NOT BE ACCEPTABLE.
.03 SET LIGHTING FIXTURE SCHEDULE AND NOTES ON ELECTRICAL DRAWINGS.

Order Plans

UNAPPROVED

Salem Gate
Market

**ANCHOR 2B
AND RETAIL 2C**

1454 AND 1460
OLD SALEM ROAD
CONYERS, GEORGIA

ELECTRICAL SPECIFICATIONS

Date	Drawn By	Checked By	Sheet No.
3/29/19	AK		E0.1
18.110	AR		(2)

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