

# ALTERATION REPAIR

## 4015 WOODLEA AVE

### BALTIMORE, 21206 MD

#### ELECTRICAL SPECIFICATIONS

- 5.01 GENERAL
- A. IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, TEST AND OTHER SERVICES AS MAY BE NECESSARY TO ACHIEVE THIS PRODUCT. THE CONTRACTOR SHALL ACKNOWLEDGE ACCEPTANCE OF THE PLANS AS AN ADEQUATE DEFINITION OF THE SCOPE OF WORK AND EXTRA COST CLAIMS BASED ON DISCREPANCIES ON THE PLANS WILL NOT BE CONSIDERED.
- B. COORDINATE WITH ALL TRADES TO AVOID INTERFERENCE AMONG MECHANICAL, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL ITEMS. PROVIDE ALL NECESSARY OFFSETS AND FITTINGS IN CIRCUITRY AND OTHER ITEMS REQUIRED TO INSTALL THE WORK WITHOUT INTERFERENCES.
- C. ALL EQUIPMENT INSTALLED SHALL BE NEW AND SHALL CONFORM IN ALL RESPECTS TO THE LATEST APPROVED STANDARDS OF IEEE, ANSI, NEMA AND UNDERWRITERS LABORATORIES, INC., UNLESS INDICATED OTHERWISE.
- D. SHOP DRAWINGS ARE TO BE SUBMITTED AND APPROVED BEFORE THE EQUIPMENT IS ORDERED. SUBMIT SIX (6) COPIES OF SHOP DRAWINGS TO THE ARCHITECT.
- F. THE ENTIRE ELECTRICAL INSTALLATION SHALL CONFORM TO THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE AND ALL OTHER RULES AND REGULATIONS OF THE LOCAL ELECTRICAL AND BUILDING CODES.
- G. ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UNDERWRITER'S LABORATORIES LABEL.
- L. ALL FEEDER RACEWAYS, ELECTRICAL PANELS AND ALL MAJOR PIECES OF EQUIPMENT SHALL BE CLEARLY LABELED WITH MINIMUM 1" HIGH LETTERS.
- M. ALL WORKMANSHIP, MATERIALS AND EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF AREA OF TENANT.
- P. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND CERTIFICATES OF INSPECTION INCLUDING THE COST OF SAME IN HIS CONTRACT.
- S. FINAL TESTING: AT THE TIME OF FINAL INSPECTION AND TESTS, ALL CONNECTIONS AT PANELBOARDS, DEVICES AND EQUIPMENT AND ALL SPLICES MUST BE COMPLETED. EACH BRANCH CIRCUIT AND ITS RESPECTIVE CONNECTED EQUIPMENT MUST TEST FREE OF SHORT CIRCUITS.
- T. UPON COMPLETION OF THE WORK, CLEAN AND POLISH ALL EXPOSED SURFACES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 5.02 JOB RESPONSIBILITY
- A. PROVIDE ADEQUATE STORAGE FACILITIES FOR MATERIALS AND EQUIPMENT DURING THE PROGRESS OF THE WORK.
- B. BE RESPONSIBLE FOR THE CONDITION OF ALL MATERIAL AND EQUIPMENT EMPLOYED IN THE ELECTRICAL INSTALLATION UNTIL FINAL ACCEPTANCE BY THE OWNER. PROTECT SAME FROM ANY CAUSE WHATSOEVER.
- C. BE RESPONSIBLE FOR THE REPLACEMENT OF ALL DAMAGED OR DEFECTIVE WORK, MATERIALS EQUIPMENT. DO NOT INSTALL SENSITIVE OR DELICATE EQUIPMENT UNTIL MAJOR CONSTRUCTION WORK IS COMPLETED.
- D. OBSERVE AND CONFORM TO APPLICABLE SAFETY REGULATIONS, INCLUDING THOSE REQUIRED BY THE OWNER'S REPRESENTATIVE.
- E. ERECT AND MAINTAIN SUITABLE BARRIERS, PROTECTIVE DEVICES, LIGHTS AND WARNING SIGNS FOR THE PROTECTION OF OCCUPANTS, TRANSIENTS AND WORKMEN FROM DANGER DUE TO WORK PERFORMED BY THE ELECTRICAL CONTRACTOR.
- F. MAKE GOOD ANY DAMAGE TO THE WORK CAUSED BY FLOODS, STORMS, ACCIDENTS, ACT OF GOD, ACTS OF NEGLIGENCE, STRIKES, VIOLENCE OR THEFT UP TO THE TIME OF FINAL ACCEPTANCE BY THE OWNER.
- G. BE RESPONSIBLE FOR ANY LOSS OR INJURY TO PERSONS OR PROPERTY RESULTING FROM NEGLIGENCE OR ANY OTHER CAUSES ON THE PART OF THE EMPLOYEES.
- H. DO NOT LEAVE ANY ELECTRICAL WORK IN A HAZARDOUS CONDITION, EVEN TEMPORARILY.
- I. ERECT, MAINTAIN AND FINALLY REMOVE ALL SCAFFOLDS, STAGING, FORMS, PLATFORMS AND LADDERS REQUIRED FOR THE ELECTRICAL INSTALLATION.
- J. DO NOT INSTALL WORK FOR WHICH AN EXTRA CHARGE IS TO BE MADE WITHOUT WRITTEN APPROVAL FROM THE OWNER'S REPRESENTATIVE AND THE OWNER. A WRITTEN REQUEST FOR EXTRA WORK SHALL STATE THE NATURE OF THE WORK, BY WHOM REQUESTED, AND THE PRICE TO BE CHARGED.
- 5.03 PRODUCTS -  
RACEWAYS, BOXES, CONDUITS -  
1. WIRING METHODS:  
2. EXPOSED AND CONCEALED CIRCUITRY (WHETHER CONDUIT AND WIRE OR CABLE) SHALL BE RUN TIGHT TO CEILING SLAB (AS HIGH AS POSSIBLE TO MAXIMIZE HEADROOM) IN A NEAT, WORKMANLIKE MANNER. ALL RUNS SHALL BE PARALLEL OR PERPENDICULAR TO BUILDING WALLS.  
3. ALL CIRCUITRY RUNS INDICATED ARE DIAGRAMMATIC. THE CONTRACTOR SHALL DETERMINE IN THE FIELD THE MOST SUITABLE ROUTES.  
4. OUTLET BOXES SHALL BE A MINIMUM OF 4" SQUARE WITH THE APPROPRIATE PLASTER RING OR TILE COVER.  
5. FINAL CONNECTION TO ALL MOTORS OR VIBRATING EQUIPMENT SHALL BE WITH FLEXIBLE CONDUIT.  
WIRE AND CABLE -  
1. ALL CONDUCTORS SHALL BE COOPER, MINIMUM #14 (EXCEPT CONTROL CONDUCTORS AND LIGHTING TAPS AS PERMITTED BY NEC, CONDUCTORS FOR SWITCHING LIGHTS SHALL NOT BE CONSIDERED CONTROL CONDUCTORS), WITH 600 VOLT TYPE "THHN - THWN" INSULATION. CONDUCTORS #10 AND LARGER SHALL BE STRANDED.  
2. ALL 120 VOLT CIRCUIT HOMERUNS WHICH ARE OVER 100 LINEAR FEET SHALL BE #10 CONDUCTORS MINIMUM.  
5. RUN MULTIPLE HOMERUNS TO ALTERNATELY NUMBERED PANELBOARD CIRCUITS (I.E. 1, 3, 5).

7. ALL RECEPTACLES, LIGHTING FIXTURES, MOTORS, ETC. SHALL BE GROUNDED PER N.E.C. (ALL RECEPTACLE CIRCUITS SHALL CONTAIN A #12 INSULATED GROUND CONDUCTOR).
8. THE CONTRACTOR'S RESPONSIBILITY TO BALANCE ALL PHASES IN THE LOADCENTER, (BALANCE LOAD).
9. ALL MOTOR CONNECTIONS OUTSIDE SHALL BE DONE WITH FLEXIBLE SEALTITE CONDUIT.  
WIRING DEVICES, SWITCHES, RECEPTACLES AND TELEPHONE OUTLETS -  
1. THE LOCATION OF ALL WIRING DEVICES AND TELEPHONE/DATA OUTLETS SHALL BE VERIFIED BEFORE INSTALLATION WITH THE ARCHITECT. THE ARCHITECT MAY, AT HIS OPTION, RELOCATE ANY DEVICE 5 FEET AT NO CHARGE TO THE OWNER.  
2. WHERE TO OR MORE DEVICES ARE SHOWN TOGETHER ON THE PLANS, A MULTI-GANG BOX AND PLATE SHALL BE USED. DEVICES OF DIFFERENT VOLTAGES SHALL BE SEPARATED BY PERMANENTLY INSTALLED BOX PARTITIONS.  
3. ALL OUTLETS SHOWN ON A WALL BACK TO BACK SHALL BE OFFSET A MINIMUM OF 6" HORIZONTALLY.  
4. WALL MOUNTED WIRING DEVICES SHALL BE WHITE IN COLOR EQUAL TO THE FOLLOWING:  
- SINGLE POLE SWITCH: LEVITON  
- DUPLEX RECEPTACLE: LEVITON  
5. DEVICE PLATES AS DIRECTED BY THE ARCHITECT.

6. COORDINATE LIGHT SWITCHES SHOWN ON DRAWINGS WITH DOOR SWINGS. LOCATE LIGHT SWITCH ON LOCK SIDE OF DOOR.  
STARTERS AND DISCONNECTS -

1. PROVIDE SAFETY SWITCHES WHERE INDICATED AND AS REQUIRED BY CODE WITH RATINGS AS REQUIRED BY THE SYSTEM VOLTAGE, PHASE AND LOAD SERVED.  
2. PROVIDE NON-FUSED SAFETY SWITCHES UNLESS SPECIFICALLY NOTED FUSED AND NEMA 1 ENCLOSURES UNLESS NOTED OTHERWISE. PROVIDE NEMA 3R ENCLOSURES IN ALL EXTERIOR OR DAMP LOCATIONS AND NEMA 4 ENCLOSURES IN ALL WET LOCATIONS.  
4. LOCATE DISCONNECT SWITCH FOR MECHANICAL EQUIPMENT TO PERMIT SERVICING OF EQUIPMENT. PROVIDE FUSES IF REQUIRED BY MANUFACTURER OF EQUIPMENT FOR U.L. APPROVAL. CHECK MOTORS FOR PROPER ROTATION. CONNECT CONDUCTORS AS REQUIRED BY MANUFACTURER.

#### LIGHTING FIXTURES -

1. ALL NEW LIGHTING FIXTURES SHALL BE INSTALLED COMPLETE WITH LAMPS. SEE PLANS FOR SPECIFIC REQUIREMENTS. ALL TRACK AND ACCENT LAMPS TO BE INSTALLED AT END OF JOB.  
2. PROVIDE FINISHING FRAMES FOR ALL RECESSED LIGHTING FIXTURES, TYPE TO BE COMPATIBLE WITH CEILING, COORDINATE ALL FIXTURE TYPES WITH CEILING SYSTEM BEFORE ORDERING FIXTURES. PROVIDE ALL MOUNTING ATTACHMENTS FOR A COMPLETE INSTALLATION.  
3. PROVIDE A COMPLETE AND OPERABLE LIGHTING SYSTEM, WHICH SHALL INCLUDE IN PART, FLUORESCENT LIGHTING FIXTURES, BALLASTS, LAMPS, LENSES, SUPPORTS, CANOPIES, FRAMES, HARDWARE AND ANY OTHER NECESSARY APPURTENANCES AS MAY BE REQUIRED.  
4. PROVIDE ALL NECESSARY ACCESSORY FITTINGS, HANGES, CLAMPS, BRACKETS, YOKES, PLASTER FLANGES AND MISCELLANEOUS DEVICES AS REQUIRED FOR A COMPLETE INSTALLATION.  
5. PROVIDE LAMPS FOR EACH TYPE OF LIGHTING FIXTURE IN ACCORDANCE WITH THE FIXTURE MANUFACTURERS LAMP REQUIREMENTS AND RECOMMENDATIONS, UNLESS INDICATED OTHERWISE.  
6. FLUORESCENT LIGHTING BALLASTS SHALL BE ELECTRONIC HIGH FREQUENCY TYPE, CLASS P, ENERGY SAVING, CBM AND ETL CERTIFIED AND RATED FOR SYSTEM VOLTAGE AND FREQUENCY WITH THE QUIETEST SOUND LEVEL RATING AVAILABLE FOR THE TYPE REQUIRED.  
7. COLOR OF LIGHTING FIXTURES AND LAMP COLOR TEMPERATURE SHALL BE AS SELECTED BY THE ARCHITECT.

- 5.04 EXECUTION -  
A. PROVIDE ALL WORK, EQUIPMENT, AND MATERIALS INDICATED.  
B. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH NEC REQUIREMENTS AND ANY ADDITIONAL LOCAL CODES.  
C. ELECTRICAL IDENTIFICATION:

1. PROVIDE COLOR CODING FOR FEEDERS AND BRANCH CIRCUIT CONDUCTORS AS FOLLOWS:  
PHASE A-BLACK  
PHASE B-RED  
NEUTRAL-WHITE  
GROUND-GREEN  
2. APPLY CIRCUIT/CONTROL/ITEM DESIGNATION LABELS OF ENGRAVED PLASTIC LAMINATE FOR DISCONNECT SWITCHES, BREAKERS, PUSHBUTTONS, PILOT LIGHTS, AND SIMILAR ITEMS FOR POWER DISTRIBUTION AND CONTROL COMPONENTS

- D. GROUNDING:  
1. GROUND ELECTRICAL SYSTEMS AND EQUIPMENT IN ACCORDANCE WITH N.E.C. EXCEPT WHERE GROUNDING IN EXCESS OF NEC REQUIREMENTS IS INDICATED.  
2. ALL CIRCUITS SHALL CONTAIN AN INSULATED GROUNDING CONDUCTOR. THIS SHALL APPLY WHETHER INDICATED ON THE DRAWINGS OR NOT.

- E. LIGHTING:  
1. COORDINATE LOCATION OF LIGHTING FIXTURES WITH MECHANICAL EQUIPMENT AND ARCHITECTURAL CEILING PLAN.

#### APARTMENTS NOTES

1. NO BACK TO BACK OUTLET INSTALLATIONS IS ALLOWED. ALL OUTLETS SHALL BE INSTALLED IN ACCORDANCE WITH ARTICLE 210-52 OF THE NEC. ADDITIONAL OUTLETS MAY BE REQUIRED IN ORDER TO AVOID BACK TO BACK INSTALLATIONS  
2. ALL DWELLING UNITS RECEPTACLES SHALL BE PROTECTED BY AN ARC FAULT CIRCUIT INTERRUPTER LISTED TO PROVIDE PROTECTION OF THE ENTIRE BRANCH CIRCUIT, NEC. ART 210.12(B)  
3. ALL RECEPTACLES WITHIN AN UNIT SHALL BE LISTED AS TAMPER-RESISTANT AS REQUIRED BY NEC. ART. 210.52  
4. ALL RECEPTACLES INSTALLED TO SERVE KITCHEN COUNTERTOPS SHALL HAVE CFCL PROTECTION.  
5. RECEPTACLES INSTALLED OUTDOOR IN A WET LOCATION MUST HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER THE ATTACHMENT PLUG IS INSERTED OR REMOVED, NEC 406.8(B)(1)  
6. HVAC OUTDOOR UNITS LOCATED MORE THAN 100FEET FROM UNIT LOADCENTER SHALL HAVE CONDUCTORS ONE SIZE LARGER.  
7. MORE THAN ONE SMOKE DETECTOR SHALL BE INTERCONNECTED.  
8. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ARCHITECT/OWNER THE NUMBER, AND FINAL LOCATION OF TELEPHONE AND CABLE TV OUTLETS PRIOR TO ROUGH-IN.  
9. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH PROJECT ARCHITECT THE TYPE, EXACT LOCATION, AND MOUNTING HEIGHT OF ALL LIGHTING FIXTURES, PRIOR TO ROUGH-IN.  
10. ELECTRICAL CONTRACTOR SHALL EXTEND WIRING, AND MAKE FINAL CONNECTIONS TO ALL MECHANICAL, AND PLUMBING EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS WHERE IS INDICATED OR NOT.

#### ABBREVIATIONS

A	AMPERES OR AMP
AC	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
AIC	AMPERE INTERRUPTING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
C	CONDUIT
CKT	CIRCUIT
CU	COPPER
C/B	CIRCUIT BREAKER
C/T	CURRENT TRANSFORMER
G/GRND	GROUND OR GROUNDING
GFI	GROUND FAULT INTERRUPTER
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLTAMPS
KW	KILOWATTS
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCCP	MAXIMUM OVERCURRENT PROTECTION
NIC	NOT IN CONTRACT
UNON	UNLESS OTHERWISE NOTED
V	VOLTAGE OR VOLT
VA	VOLT AMP
W	WATTS
WP	WEATHERPROOF

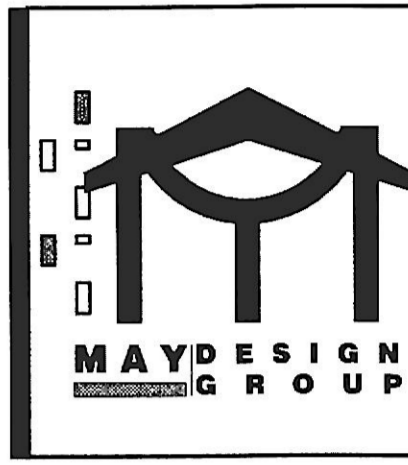
#### ELECTRICAL SYMBOLS

- ⊗ RECESSED LIGHT FIXTURE  
S SINGLE POLE TOGGLE SWITCH, 125V, 20AMP+48" A.F.F.  
S<sub>3</sub> THREE WAY SWITCH 125V, 20AMP, +48" A.F.F.  
D DIMMER SWITCH  
PC PHOTOCELL  
⊙ CEILING MOUNTED OCCUPANCE SENSOR WITH LOW VOLTAGE WALL MOUNTED SWITCH  
⊕ DUPLEX RECEPTACLE, 125V, 20 AMP +18" A.F.F.  
⊕ DUPLEX RECEPTACLE, 125V, 20 AMP +44" A.F.F.  
◆ DUPLEX RECEPTACLE W/ BUILT IN GROUND FAULT PROTECTION, 20 AMP, 125V, +44" U.O.N.  
⊕ WEATHERPROOF DUPLEX RECEPTACLE W/ BUILT-IN GROUND FAULT PROTECTION, 20 AMP, 125V, +24" U.O.N.  
⊕ SINGLE RECEPTACLE, 120/240V, 30AMP +18" A.F.F.  
⊕ SINGLE RECEPTACLE, 120/240V, 50AMP +18" A.F.F.  
▷ FLUSH WALL MOUNTED DATA/TELEPHONE COMBINATION OUTLET +18" AFF. UON, PROVIDE (2) CAT-5 CABLE UP UP TO THE UNIT HUB  
⊕ TV OUTLET MOUNT +18" A.F.F. U.O.N. PROVIDE RG-6 CABLE FROM EACH OUTLET TO THE UNIT HUB LOCATION.  
⊕ JUNCTION BOX-SIZE AS REQUIRED.  
⊕ DISCONNECT SWITCH (FSS=FUSIBLE; NFSS=NON-FUSIBLE).  
M MOTOR RATED WITCH  
⊕ MOTOR CONNECTION  
⊕ EXHAUST FAN CONNECTION  
⊕ UNIT HEATER CONNECTION  
⊕ CONDUIT TURNING UP  
⊕ CONDUIT TURNING DOWN  
⊕ HOMERUN TO PANELBOARD, ARROWHEADS DENOTE NUMBER OF CIRCUITS. CROSS MARKS DENOTE NUMBER OF CONDUCTOR.  
⊕ \*\*RESIDENTIAL SMOKE DETECTOR, 120VOLT W/ BATTERY BACK-UP(\*\*)  
⊕ \*\*RESIDENTIAL COMBINATION SMOKE DETECTOR/ CARBON MONOXIDE DETECTOR, 120VOLT WITH BATTERY BACK-UP(\*\*)  
\*\* ELEC. CONTRACTOR TO USE 15 AMP TOGGLE SWITCHES & RECEPTACLES ONLY IN APART. UNITS AND 20 AMP RECEPTACLES IN COMMON AREAS.  
SMOKE DETECTORS ARE HARDWIRED 120V. WITH BATTERY BACK-UP, MORE THAT ONE SMOKE DETECTOR SHALL BE INTERCONNECTED.  
NUMERALS SUBSCRIPT ADJACENT TO LIGHTING FIXTURES, WIRING DEVICES, SPECIAL OUTLETS, AND MOTOR CONNECTIONS ON APARTMENT PLAN INDICATES BRANCH CIRCUIT NUMBER TO WHICH ITEM IS TO BE CONNECTED. REFER TO "LOADCENTER SCHEDULES" FOR DESCRIPTION OF CIRCUIT AND WIRE SIZE.

ALL 120 VOLT SINGLE PHASE, 15 AND 20AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DEN, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSET, HALLWAYS, OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT PER NEC 210.12

LIGHTING FIXTURE SCHEDULE					
TYPE	DESCRIPTION	MANUFACTURER	LAMPS	MOUNTING	VOLTS
⊙	NEW 4" RECESSED DOWN LIGHT	FIXTURE TO BE SELECTED BY ARCHITECT ALLOW 15 WATTS	LED	RECESSED	120V
⊕	NEW WALL SCONCE WEATHER PROOF	FIXTURE TO BE SELECTED BY ARCHITECT ALLOW 15 WATTS	LED	RECESSED	120V
○	NEW 6" RECESSED DOWN LIGHT	FIXTURE TO BE SELECTED BY ARCHITECT ALLOW 15 WATTS	LED	RECESSED	120V

- LIGHTING FIXTURE SCHEDULE NOTES  
1. FIXTURE TO COMPLY WITH LOCAL JURDICTION REQUIREMENTS  
2. PROVIDE IC RATED LIGHTING FIXTURES



4015 WOODLEA AVE  
BALTIMORE, 21206 MD  
SQ: 6,996 LOT: 016



SCALE: AS NOTED  
DATE:  
PROJECT NUMBER:

COVER SHEET

E000

