(NOTE: NOT ALL SYMBOLS SHOWN ARE USED ON DRAWINGS)

# ELECTRICAL SYMBOL LEGEND

| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION |
|---|---|---|---|
| A | 2'X4' FLUORESCENT LIGHT FIXTURE (LETTER DENOTES TYPE) | 1/2 | MOTOR CONNECTION, HP INDICATED. |
| A | 2'X2' FLUORESCENT LIGHT FIXTURE (LETTER DENOTES TYPE) | | GROUND |
| | 4' OR 8' FLUORESCENT LIGHT FIXTURE | | ELECTRICAL PANELBOARD (480/277 VOLT). |
| | LIGHT FIXTURE CONNECTED TO NIGHT LIGHT/EMERGENCY CIRCUIT OR EQUIPPED W/ INTEGRAL BATTERY PACK | | ELECTRICAL PANELBOARD (208/120 VOLT). |
| | 4' OR 8' FLUORESCENT STRIP LIGHT FIXTURE | TC | TIME CLOCK, RATING AS INDICATED. MOUNT 54" A.F.F. |
| | 4' OR 8' EMERGENCY FLUORESCENT STRIP LIGHT FIXTURE | PE | PHOTO-ELECTRIC CONTROL. MOUNT ABOVE ROOF PARAPET LINE FACING NORTH. |
| | 4' OR 8' LIGHT FIXTURE CONNECTED TO NIGHT LIGHT/ EMERGENCY CIRCUIT OR EQUIPPED W/ INTEGRAL BATTERY PACK | | SHARE NEUTRALS ARE ONLY ALLOWED IN MULTI-BRANCH CIRCUITS HOMERUNS WHERE INDICATES SWITCH LEG FOR LIGHTING FIXTURES. PROVIDE ADDITIONAL CIRCUITING (HOT,NEUTRAL & TRAVELER) AS REQUIRED TO ACCOMPLISH LIGHTING CONTROL SCHEME INDICATED. |
| | WALL MOUNTED LIGHT FIXTURE | | |
| A | CEILING MOUNTED LIGHT FIXTURE-UON-(LETTER DENOTES TYPE) | | |
| | WALL WASHER | | CIRCUIT WITH 2#12, 1#12G. CONDUCTORS AND 1/2" C. IS REQUIRED WHEN NO MARKS ARE SHOWN UON |
| | EGRESS LIGHT FIXTURE W/ BATTERY PACK | | CONDUIT STUBBED UP AND CAPPED |
| | EXIT LIGHT FIXTURE, CEILING MOUNTED, WITH ARROW | A-1 | HOMERUN TO PANEL A, CIRCUIT 1 |
| | EXIT LIGHT FIXTURE, WALL MOUNTED (SHADED PORTION INDICATES LIGHTED FACE) | A-1,3,5 | CIRCUIT HOMERUN - THREE CIRCUITS INDICATED |
| $ | SINGLE POLE SWITCH, 42" AFF TO CENTERLINE-UON | | CEILING FAN (LETTER DENOTES TYPE) |
| $3 | THREE WAY SWITCH, 42" AFF TO CENTERLINE-UON | | 4'X8'X3/4" GRADE A/B FIRE TREATED PLYWOOD TELEPHONE TERMINAL BACKBOARD. |
| $4 | FOUR WAY SWITCH, 42" AFF TO CENTERLINE-UON | S | SPEAKER |
| $D | DIMMER SWITCH, 42" AFF TO CENTERLINE-UON | W | TELEPHONE OUTLET. MOUNT 15" A.F.F. UNLESS U.O.N. BY DRAWINGS OR SPECIFICATIONS PROVIDE A 4" SQ. BOX W/ SINGLE DEVICE PLASTER RING, 3/4" E.C. WITH PULLSTRING STUBBED INTO NEAREST ACCESSIBLE CEILING. SUBSCRIPT "W" WHEN USED INDICATES WALL MOUNTED DEVICE. MOUNT 48" A.F.F. |
| $F | VARIABLE SPEED FAN CONTROL SWITCH, 42" AFF TO CENTERLINE-UON | | |
| $J | JAMB SWITCH, 42" AFF TO CENTERLINE-UON | | COMBINATION VOICE AND DATA OUTLET MOUNT 18" A.F.F. UNLESS OTHERWISE DIRECTED BY DWG'S OR SPECIFICATIONS. PROVIDE A 4" SQ. BOX W/ SINGLE DEVICE PLASTER RING, 1" E.C. WITH PULLSTRING STUBBED INTO NEAREST ACCESSIBLE CEILING. COORDINATE QUANTITY OF CABLES AND TYPE WITH OWNER. |
| $K | KEY OPERATED SWITCH, 42" AFF TO CENTERLINE-UON | EPO | EMERGENCY POWER "OFF" PUSHBUTTON |
| $M | MOTOR RATED SWITCH WITH OVERLOADS. MOUNT 42" A.F.F. | F | FIRE ALARM PULL STATION, 42" AFF TO CENTERLINE |
| | SIMPLEX RECEPTACLE, +18" AFF TO CENTERLINE-UON | V | FIRE ALARM VISUAL STATION, 80" AFF OR 6" BELOW CEILING WHICHEVER IS LOWER. 75cd MINIMUM UNLESS OTHERWISE NOTED ON DRAWINGS. |
| | DUPLEX RECEPTACLE, +18" AFF TO CENTERLINE-UON | AV | FIRE ALARM AUDIO/VISUAL STATION, 80" AFF OR 6" BELOW CEILING WHICHEVER IS LOWER. 75cd MINIMUM UNLESS OTHERWISE NOTED ON DRAWINGS. |
| | DUPLEX RECEPTACLE. MOUNT 48" A.F.F. OR 6" ABOVE COUNTER TOP WHERE COUNTER IS INDICATED. | | |
| | QUADPLEX RECEPTACLE, +18" AFF TO CENTERLINE-UON | S | FIRE ALARM SMOKE DETECTOR |
| IG | ISOLATED GROUND RECEPTACLE, +18" AFF TO CENTERLINE-UON | D | FIRE ALARM DUCT SMOKE DETECTOR |
| | DUPLEX RECEPTACLE HALF SWITCHED,+18" AFF TO CENTERLINE-UON | H | HEAT DETECTOR |
| GFCI | DUPLEX CONVENIENCE RECEPTACLE WITH INTERNAL GROUND FAULT FAULT CIRCUIT PROTECTION. | CO | CARBON MONOXIDE DETECTOR |
| WP | WEATHERPROOF DUPLEX RECEPTACLE. | DH | MAGNETIC DOOR HOLDER |
| | SPECIAL PURPOSE RECEPTACLES. CONFIRM AMP RATING AND NEMA CONFIGURATION WITH OWNER, AND EQUIPMENT MANUFACTURER PRIOR TO PROCURING RECEPTACLES. | TS | FIRE SPRINKLER TAMPER SWITCH |
| J | JUNCTION BOX. WITH COVER PLATE | FS | FIRE SPRINKLER FLOW SWITCH |
| E | EQUIPMENT CONNECTION. (CONTRACTOR SHALL PROVIDE ALL WIRING CONDUIT, MOTOR STARTER, OVERCURRENT PROTECTIVE DEVICES, DISCONNECT SWITCH, ETC. REQUIRED TO CONNECT EQUIPMENT ELECTRICALLY. EQUIPMENT MAY BE PROVIDED BY DIVISION 16 OR OTHERS) | FACP | FIRE ALARM CONTROL PANEL |
| T | TRANSFORMER (SHOWN TO SCALE ON PLAN) | ANN | FIRE ALARM REMOTE ANNUNCIATION |
| | DISCONNECT SWITCH | OS CLG | OCCUPANCY SENSOR "CLG. INDICATES IN CEILING". |
| | DISCONNECT SWITCH, FUSED | | |
| 100/100/3 | FDS SIZE/FUSE SIZE/NUMBER OF POLES | | |
| | DISCONNECT SWITCH, WITH INTEGRAL STARTER | | |
| | MOTOR STARTER/CONTROLLER | | |
| TV | TELEVISION ANTENNA OUTLET, 16" AFF TO CENTERLINE-UON | | |
| 3P/60/40/3R | FUSED DISCONNECT SWITCH, IN NEMA 1 ENCLOSURE U.O.N. 3P = NO. OF POLES, 60 = SWITCH RATING, 40 = FUSE RATING 3R = NEMA 3R. | | |
| 3P/60/3R | NON-FUSED DISCONNECT SWITCH, IN NEMA 1 ENCLOSURE U.O.N. 3P = NO. OF POLES, 60 = SWITCH RATING, 3R = NEMA 3R. | | |

# ABBREVIATIONS

| ABBREVIATION | DESCRIPTION | ABBREVIATION | DESCRIPTION |
|---|---|---|---|
| A | AMPERES OR TRIP AMPERES | MCA | MINIMUM CIRCUIT AMPS |
| ABV | ABOVE | MCB | MAIN CIRCUIT BREAKER |
| A/C | AIR CONDITIONING | MCC | MOTOR CONTROLLED CENTER |
| AF | AMPERE FRAME | MFR | MANUFACTURER |
| AFF | ABOVE FINISHED FLOOR | MH | MANHOLE |
| AFG | ABOVE FINISHED GRADE | MISC | MISCELLANEOUS |
| AHU | AIR HANDLING UNIT | MLO | MAIN LUGS ONLY |
| AIC | AMPERE INTERRUPTING CAPACITY | MOCP | MAXIMUM OVER CURRENT PROTECTION |
| ARCH | ARCHITECT | N | NEUTRAL |
| AT | AMPERE TRIP | NA | NOT APPLICABLE |
| ATS | AUTOMATIC TRANSFER SWITCH | NC | NORMALLY CLOSED |
| AWG | AMERICAN WIRE GAUGE | NEC | NATIONAL ELECTRIC CODE |
| CB | CIRCUIT BREAKER | NFDS | NON-FUSED DISCONNECT SWITCH |
| CCTV | CLOSED CIRCUIT TELEVISION | NIC | NOT IN CONTRACT |
| CKT | CIRCUIT | NO | NORMALLY OPEN, NITROUS OXIDE |
| CLG | CEILING | NTS | NOT TO SCALE |
| CT | CURRENT TRANSFORMER | OH | OVERHEAD |
| CU | COPPER | OHP | OVERHEAD PRIMARY |
| ER | EXISTING TO REMAIN | OHS | OVERHEAD SECONDARY |
| EXIST. | EXISTING | PB | PULL BOX |
| FACP | FIRE ALARM CONTROL PANEL | PE | PHOTO ELECTRIC |
| FCU | FAN COIL UNIT | Q | QUARTZ RESTRIKE |
| FLA | FULL LOAD AMPS | QTY | QUANTITY |
| FLUOR | FLUORESCENT | RECEPT | RECEPTACLE |
| GA | GAUGE | RECIRC | RECIRCULATION |
| GALV | GALVANIZED | RLA | RATED LOAD AMPS |
| GEN | GENERATOR | RTU | ROOFTOP UNIT |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER | S.C. | SPLIT CIRCUIT |
| HP | HORSEPOWER | SD | SMOKE DAMPER |
| HPS | HIGH PRESSURE SODIUM | TC | TIME CLOCK |
| HZ | HERTZ-FREQUENCY IN CYCLE PER SECOND | TV | TELEVISION |
| INCAD | INCANDESCENT | TYP | TYPICAL |
| Kcmill | 1000 CIRCULAR mils | UH | UNIT HEATER |
| KV | KILOVOLTS (THOUSAND VOLTS) | UL | UNDERWRITER'S LABORATORY |
| KVA | KILOVOLTS-AMPS (THOUSAND VOLT-AMPS) | UON | UNLESS OTHERWISE NOTED |
| KW | KILOWATT (THOUSAND WATTS) | V | VOLTS |
| KWH | KILOWATT HOUR | VA | VOLT AMPERES |
| LTG | LIGHTING | VD | VOLUME DAMPER |
| LTS | LIGHTS | VFD | VARIABLE FREQUENCY DRIVE |
| | | WP | WATER PROOF |
| | | XFMR | TRANSFORMER |

## GENERAL NOTES:

1. ALL CONDUCTORS SHALL BE COPPER, #12 AWG MINIMUM, UNLESS OTHERWISE NOTED. REFER TO SECTION 260519 FOR VOLTAGE DROP LIMITATIONS
2. ALL CONDUIT SHALL BE 1/2" MINIMUM, UNLESS OTHERWISE NOTED. MINIMUM CONDUIT SIZES FOR TELECOMMUNICATION SHALL BE 1"C. REFER TO SPECIFICATIONS.
3. FOR EXACT LOCATION AND QUANTITIES OF EQUIPMENT MOUNTED IN SUSPENDED CEILINGS SUCH AS LIGHTING FIXTURES, SMOKE DETECTORS, SPEAKERS, ETC. REFER TO REFLECTED CEILING PLANS CEILING MOUNTED AV DEVICES REFER TO TELECOMMUNICATION DRAWINGS.
4. CONFIRM COMPATIBILITY BETWEEN CEILING TYPES, DEFINED IN THE ARCHITECTURAL ROOM FINISH SCHEDULES & THE LIGHT FIXTURE TRIM AND MOUNTING HARDWARE DEFINED IN THE LIGHTING FIXTURE SCHEDULE, PRIOR TO PURCHASING LIGHT FIXTURES.
5. FOR EXACT LOCATION OF MECH. AND PLUMBING EQUIP., REFER TO MECH. AND PLUMBING DRAWINGS.
6. EACH MOTOR BEING INSTALLED IN THIS CONTRACT SHALL BE PROVIDED W/ THERMAL PROTECTION BY EITHER A MANUAL OR MAGNETIC STARTER WHETHER SHOWN OR NOT. THERMAL ELEMENTS SHALL BE SIZED & INSTALLED ACCORDING TO THE FLA OF THE MOTOR.
7. IN ALL AREAS, BE RESPONSIBLE FOR COORDINATION BETWEEN THE ELECT. AND MECH. TRADES TO PROVIDE CLEARANCE ABOVE CEILING BETWEEN RECESSED LTG. FIXTURES AND THERMAL INSULATION OR DUCTWORK IN ACCORDANCE W/ NEC PARAGRAPH 410-66.
8. MECH. EQUIP. SIZES ARE AS DESIGNED. BREAKERS, CONDUIT, WIRING, STARTERS, CONDUCTORS, ETC., SHALL BE ADJUSTED ON TO THE EQUIPMENT APPROVED FOR INSTALLATION ON THIS PROJECT WITH NO ADDITIONAL COST TO THE OWNER.
9. RECEPT. WITHIN 6'-0" OF ANY SINK SHALL BE PROVIDED W/ GFCI (GROUND FAULT CIRCUIT INTERRUPTED) WIRING DEVICES.
10. COORDINATE SPECIAL EQUIP. (I.E., COPY MACHINES, KITCHEN, EQUIP, ETC.) RECEPTACLE N.E.M.A. CONFIG. W/ THE OWNER PRIOR TO PROCUREMENT AND INSTALLATION.
11. FURNISH AND INSTALL IN-LINE FUSES FOR ALL UNSWITCHED LIGHT FIXTURES AND NIGHT LIGHT (UL) DESIGNATED LIGHT FIXTURES.
12. ALL 120 RECEPTACLES SHALL BE TAMPER RISISTANT/CHILD PROOF.

# LIGHTING SCHEDULE

NOTE: INSTALL THE FOLLOWING LIGHTING FIXTURES AND COMPONENTS. ELECTRICAL SUBCONTRACTOR SHALL PROVIDE FRAME-IN KITS AND ACCESSORIES AS REQUIRED.

| SYMBOL | TYPE | MANUFACTURER | MODEL # | LAMP | VOLTAGE | MOUNTING | NOTES |
|---|---|---|---|---|---|---|---|
| A | 2'X4' TROFFER | COOPER LIGHTING - METALUX | 2AC-232-UNV-ER81-U | 2- 32 WATT T8 | 277V | RECESSED | |
| B | 2'X4' TROFFER | COOPER LIGHTING - METALUX | 2AC-2177B-UNV-ER81 | 2- 17 WATT T8 | 277V | RECESSED | |
| C | 6" DIAMETER DOWNLIGHT | COOPER LIGHTING - PORTFOLIO | C6042-6051LI-HB26 | 1- 32 WATT PL-T | 277V | RECESSED | |
| D | 2'X4' TROFFER ACRYLIC LENS | COOPER LIGHTING - METALUX | 2GC8-232-A(INV)-UNV-EB81 | 2- 32 WATT T8 | 277V | RECESSED | |
| E | 1'X4' WALL BRACKET LIGHT | COOPER LIGHTING - METALUX | BA-232-UNV-ER81 | 2- 32 WATT T8 | 277V | SURFACE | |
| F | 1'X2' WALL BRACKET LIGHT | COOPER LIGHTING - METALUX | BA-217-UNV-ER81 | 2- 17 WATT T8 | 277V | SURFACE | |
| G | 1'X4' STRIP | COOPER LIGHTING - METALUX | SS-232-UNV-ER81 | 2- 32 WATT T8 | 277V | SURFACE | |
| H | 6" DIAMETER DOWNLIGHT | COOPER LIGHTING - PORTFOLIO | C6042-6051LI-HB26/DIM-BALLAST | 1- 32 WATT PL-T | 277V | RECESSED | 1. |
| I | DIRECT/INDIRECT LINEAR FLUORESCENT | COOPER LIGHTING - CORELITE | NB-SB-1T8-1C-UNV-A-C-4' | 1- 32 WATT T8 | 277V | SUSPENDED | |
| J | WALL SCONCE | TO BE SELECTED BY ARCHITECT | TBD | 2- 42 WATT | 277V | SURFACE | 2. |
| K | INDIRECT/DIRECT WALL SCONCE | INSIGHT LIGHTING | VP-LI-C-1-P-400-277-W-YR | 1- 400 WATT M.H. | 277V | SURFACE | |
| K2 | INDIRECT/DIRECT WALL SCONCE | INSIGHT LIGHTING | VP-LI-C-1-P-250-277-W-YR | 1- 250 WATT M.H. | 277V | SURFACE | |
| L | EXTERIOR WALLPACK | COOPER LIGHTING - LUMARK | MP-PL-100-277 | 1-100 WATT PULSE START M.H. | 277V | SURFACE | 3. |
| M | EXTERIOR WALLPACK | COOPER LIGHTING - LUMARK | MP-1P-TM-175-3-277 | 1-175 WATT PULSE START M.H. | 277V | SURFACE | 3. |
| N | EXTERIOR WALL SCONCE | TO BE SELECTED BY ARCHITECT | | 2- 42 WATT | 277V | SURFACE | 3. |
| P | ELEVATOR PIT LIGHT | COOPER LIGHTING - METALUX | VT2-232-UNV-TEB81-EM | 2- 32 WATT T8 | 277V | SURFACE | |
| X | EXIT SIGN (UNIVERSAL SINGLE FACE) | COOPER LIGHTING - SURELITE | #AP70R | INCLUDED | 277V | UNIVERSAL | |
| X2 | EXIT SIGN (UNIVERSAL DOUBLE FACE) | COOPER LIGHTING - SURELITE | #AP70R | INCLUDED | 277V | UNIVERSAL | |

NOTES:

1. REFER TO THE ELECTRICAL SPEFICATIONS FOR THE LUTRON DIMMING BALLAST AND CONTROLS.
2. $150.00 ALLOWANCE FOR BIDDING PURPOSES.
3. REFER TO ARCHITECTURAL ELEVATION DRAWINGS FOR MOUNTING HEIGHTS.


hatch+ulland owen architects
702 San Antonio Street
Austin, Texas 78701
T: 512.474.8548
F: 512.474.8643
www.huoarchitects.com

CIVIL ENGINEER:
TEXAS DESIGN INTERESTS
6001 W. WILLIAM CANNON
AUSTIN, TX 78749
512-301-3389

STRUCTURAL ENGINEER:
TEXAS DESIGN INTERESTS
6001 W. WILLIAM CANNON
AUSTIN, TX 78749
512-301-3389

MECHANICAL, ELECTRICAL & PLUMBING ENGINEERS:
AYS ENGINEERING, LLC
595 Round Rock West Dr.
ROUND ROCK, TX 78681
512-961-6835

LANDSCAPE ARCHITECT:


HOUSTON GATEWAY ACADEMY
INC

BOWIE CAMPUS

7310 BOWIE ST
HOUSTON, TX 77012

CITY OF HOUSTON
PROJECT # 09044674


NOTE: This document, the ideas and design incorporated herein are and shall remain the property of h+uo architects. These documents are not to be used or altered, in whole or in part, for other than the original intended use, nor are they to be assigned to any third party without written permission from h+uo architects.

NOTE: By act of submitting a bid for the proposed contract, the bidder warrants that the bidder, and all subcontractors and material suppliers he intends to use have carefully and thoroughly reviewed the drawings and specifications and other construction documents and that the bid is complete and free from any ambiguities and sufficient for the purpose intended. The bidder further warrants that to the best of their or their subcontractor's and material supplier's knowledge all materials and products specified or indicated herein are acceptable for all applicable codes and authorities.


STATE OF TEXAS
R. ROSS ALEMAN
98427
REGISTERED
PROFESSIONAL ENGINEER
06.21.09

| PROJECT MGR: | |
|---|---|
| DRAWN BY: AYS | CHKD. BY: AYS |

ISSUE DATES:

| | date | Issue |
|---|---|---|
| 1 | 06.5.09 | Permit Set |
| 2 | 08.21.09 | COH REVIEW 1 |

AYS Engineering, LLC
MEP CONSULTING & ENGINEERING
595 Round Rock West Dr., Unit 103 • Round Rock • TX 78681
www.AYSeng.com • 512-961-6835

ELECTRICAL LEGEND & SCHEDULES

E1.0