

# Electrical Legend

## LIGHTING REQUIREMENTS:

- ALL LIGHTS IN KITCHEN, LAUNDRY ROOMS, BATHROOM, TO BE HIGH EFFICACY LIGHTING AND TO BE SWITCHED SEPARATELY FROM NON HIGH EFFICACY LIGHTING.
- LIGHTING IN BATHROOM, GARAGE, LAUNDRY ROOMS AND UTILITY ROOMS MUST BE CONTROLLED BY A OCCUPANT SENSOR.
- ANY OTHER ROOM MUST BE SWITCHED BY A OCCUPANT SENSOR OR DIMMER SWITCH. (CLOSETS UNDER 70 SQ FT ARE EXEMPT).
- ALL OUTDOOR LIGHTING TO HAVE A MOTION SENSOR SWITCH COMBINATION AND OR TIMER SWITCH ONLY (30 MIN MAX).
- ALL ROOMS TO HAVE LIGHTING TO BE PLACED. NON HIGH EFFICACY LIGHTING SHALL BE SWITCHED ON A SEPARATE CIRCUIT FROM HIGH EFFICACY LIGHTING.
- OCCUPANCY FIXTURE SHALL HAVE NO MANUAL OVERRIDE AND HAVE A 30 MIN. MAX TIMER AND BE A MICROWAVE/ULTRASONIC OR PASSIVE INFRARED TYPE.
- HIGH EFFICACY LUMINARIES MUST BE PIN BASED.

## NOTES:

- ALL WIRE SIZING AND INSTALLATION FOR ALL OUTLET, FIXTURES AND SWITCHES TO BE DETERMINED AND THE SOLE RESPONSIBILITY OF LICENSED ELECTRICIAN ON THE JOB.
- IF ANY FIELD CHANGES NEED TO BE MADE THE LICENSED ELECTRICIAN HAS SOLE RESPONSIBILITY FOR ALL CHANGES. ALL CHANGES MUST BE APPROVED BY GENERAL CONTRACTOR AND MUST FOLLOW THE 2005 NEC.

## LEGEND:

- DUPLEX RECEPTACLE: 20A-125V-2P, 3-WIRE GROUNDING TYPE. TO BE INSTALLED 12" OFF SLAB AND 8" OFF FINISHED COUNTERTOP
- DUPLEX RECEPTACLE: 20A-125V-2P, 3-WIRE GROUND FAULT INTERRUPTION TYPE. TO BE INSTALLED 12" OFF SLAB AND 8" OFF FINISHED COUNTERTOP. WEATHERPROOF COVER W/ GROUND FAULT INTERRUPTION FOR ALL OUT SIDE OUTLETS
- DUPLEX RECEPTACLE: 20A-125V-2P, 3-WIRE ARC FAULT INTERRUPTION TYPE. TO BE INSTALLED 12" OFF SLAB AND 8" OFF FINISHED COUNTERTOP
- RECEPTACLE: 20A-220V-2P, 3-WIRE GROUNDING TYPE. TO BE INSTALLED 3" FLOOR FINISHED SLAB U.N.O.
- HALF HOT RECEPTACLE
- CAN LIGHT. ALL CAN LIGHTS ARE TO BE THERMALLY PROTECTED ALL LIGHT TO BE HIGH EFFICIENCY (FLUORESCENT) U.N.O.
- WALL MOUNTED FIXTURE HIGH EFFICIENCY (FLUORESCENT) U.N.O.
- MS - MOTION SENSOR BUILT IN SWITCH
- CEILING MOUNTED FIXTURE OR FAN BOX ALL LIGHTS TO BE HIGH EFFICIENCY (FLUORESCENT) U.N.O.
- FLORESCENT LIGHT, ALL LIGHTS TO BE HIGH EFFICIENCY (FLUORESCENT)
- SMOKE DETECTORS HARD WIRE TO POWER AND SECURITY SYSTEM W/ BATTERY BACK UP
- TOGGLE SWITCH, 20A-125V, FLUSH MOUNT AT 48" OR AS NOTED SUBSCRIPT AT SYMBOL INDICATES THE FOLLOWING:
  - 3 - THREE WAY
  - 4 - FOUR WAY
  - D - DIMMER
  - OS - OCCUPANCY SENSOR
  - VS - VACANCY SENSOR
  - T - TIMER
  - P - PHOTOCELL / MOTION SENSOR COMBINATION
- THERMOSTAT SEE FAU AND A/C UNIT INSTALLATION MANUAL FOR DETAIL
- CABLE TELEVISION
- PHONE
- FIREPLACE GAS KEY
- EXHAUST FAN:
  - ALL BATHROOMS TO HAVE LIGHT THAT IS TO HAVE AT LEAST 40 LUMEN PER WATT
  - ALL BATHROOMS W/ TUBS OR SHOWERS, WATER CLOSETS AND LAUNDRY ROOMS SHALL BE PROVIDED AN ENERGY STAR COMPLIANT MECHANICAL VENTILATION SYSTEM THAT PROVIDE A MINIMUM OF 60 CFM DIRECTLY VENTED TO THE OUTSIDE.
  - THE DISCHARGE POINT FOR THE EXHAUST AIR SHALL BE AT LEAST 3' FROM ALL EXTERIOR OPENINGS WHICH ALLOWS AIR ENTRY INTO THE OCCUPIED AREAS.
  - UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, THE FAN MUST BE CONTROLLED BY A HUMIDISTAT WHICH SHALL BE READILY ACCESSIBLE. HUMIDISTAT CONTROLS SHALL BE CAPABLE OF ADJUSTMENT BETWEEN RELATIVE HUMIDITY RANGES OF 50% TO 80%.

## ABBREVIATIONS:

- F = FLUORESCENT
- V = VAPOR RESISTANT

## GENERAL ELECTRICAL NOTES:

- THE ELECTRICAL SYSTEM SHALL BE GROUNDED BY UFER W/ BONDS TO GAS & WATER PIPING.
- ALL NON-LOCKING TYPE 125-VOLT, 15- AND 20-AMPERE RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES. EXCEPT RECEPTACLES LOCATED MORE THAN 6'-1/2" FEET ABOVE THE FLOOR AND RECEPTACLES THAT ARE PART OF A ALUMINUM OR APPLIANCE.
- PROVIDE ONE MINIMUM SEPARATE 20 AMP CIRCUIT TO LAUNDRY APPLIANCES. NO OTHER OUTLETS SHALL BE ON LAUNDRY CIRCUIT.
- WHERE MOTOR LOADS, APPLIANCE LIGHTING ARE IN COMBINATION, NO MORE THAN 50% OF CONDUCTOR RATING MAY BE USED.
- GROUNDING ELECTRODE CONDUCTOR SHALL BE #6 COPPER FOR 100A & #4 FOR 200A AND #2 COPPER OF 400A.
- EACH ROOM CONTAINING A WATER CLOSET SHALL HAVE AT LEAST ONE FIXTURE PROVIDING A MINIMUM OF 40 LUMENS PER WATT FLUORESCENT FIXTURES SHALL NOT CONTAIN MEDIUM BASE LAMP SOCKETS MUST BE PIN BASED) AND SHALL BE ON SEPARATE SWITCHES FROM ANY INCANDESCENT LIGHTING.
- ALL PROPOSED LIGHT FIXTURES SHALL BE LISTED FOR THE PROPOSED LOCATION. LIGHTING FIXTURES IN TUB OR SHOWER ENCLOSURES SHALL BE LABELED "SUITABLE FOR DAMP LOCATIONS".
- OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE RESISTIVE RATED WALLS, PARTITIONS, FLOORS, OR CEILINGS SHALL BE FIRE STOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE RESISTIVE RATING. PROVIDE TWO MINIMUM SEPARATE 20 AMP CIRCUITS TO KITCHEN APPLIANCES.
- ELECTRICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS OF MORE THAN 50 AMPS SHALL HAVE A POSITIVE MEANS OF DISCONNECT ADJACENT TO AND IN SIGHT FROM THE EQUIPMENT SERVED. PROVIDE DISCONNECT(S) AT A/C. DO NOT INSTALL DISCONNECTS BEHIND EQUIPMENT.
- ALL LIGHTS IN BATHROOMS AND KITCHEN SHALL BE FLUORESCENT, COMPACT FLUORESCENT, OR APPROVED EQUAL.
- SMOKE ALARM/DETECTORS SHALL SOUND AUDIBLE IN ALL SLEEPING AREAS (SECTION 907.2.10).
- PRODUCTS OF COMBUSTION DETECTORS ARE REQUIRED AT ALL OR CEILING OF CORRIDOR OR ROOM WHICH PROVIDES ACCESS TO SLEEPING ROOMS/CEILING ABOVE STAIRWAY TO SLEEPING ROOMS. USE GENERAL ELECTRIC N08201 OR NO 8202 SINGLE STATION OR EQUAL. FIRE WARNING SYSTEM/SMOKE DETECTORS TO COMPLY WITH SECTION 907.4 OF THE C.B.C. HARD WIRE TYPICAL W/BATTERY BACK UP AND INTERCONNECTED SO THAT WHEN ONE SOUNDS, THEY ALL SOUND.
- APPROVAL OF THESE PLANS BY THE BUILDING DEPARTMENT DOES NOT INCLUDE APPROVAL FOR ANY TYPE OF ALARM SYSTEM THAT MAY BE SHOWN OR REQUIRED. SEPARATE APPROVALS FOR ANY ALARM SYSTEM MUST BE OBTAINED.
- ALL BEDROOM BRANCH CIRCUITS SHALL BE ARC FAULT CIRCUIT PROTECTED.
- ALL BATHROOM CIRCUITS SHALL CONFORM TO SEC. THE REQUIREMENTS ARE AS FOLLOWS:
  - A - 20 AMPERE CIRCUIT DEDICATED TO EACH BATHROOM OR AT LEAST ONE 20 AMPERE CIRCUIT SUPPLYING ONLY BATHROOM RECEPTACLE OUTLETS.
  - B - AT LEAST ON 20 AMP CIRCUIT FOR ALL BATHROOMS.
  - C - ALL OUTLETS @ KIT, BATH, GARAGE, & EXTERIOR TO BE G.F.I.
- ELECTRICAL BOXES SHALL BE RATED & APPROVED AT FIREWALLS
- ALL EXHAUST AIR FANS SHALL BE PROVIDED WITH BACK DRAFT DAMPERS.
- ALL APPLIANCES MUST MEET THE MINIMUM STANDARDS SET FORTH BY THE STATE ENERGY COMMISSION.
- OCCUPANCY FIXTURE SHALL HAVE NO MANUAL OVERRIDE AND HAVE A 30 MIN. MAX TIMER AND BE A MICROWAVE/ULTRASONIC OR PASSIVE INFRARED TYPE.
- WIRING SHALL BE SHEATHED WITH MIN. 26 GA. MATERIALS AND TIGHTLY SEALED. VENTS AND DUCTS SHALL BE MIN. 26 GA. MATERIAL AND FIRE STOP AT FLOOR/CEILING LINES.
- ALL CAN LIGHTS ARE TO BE THERMALLY PROTECTED AND ALL LIGHTING ABOVE TUBS AND SHOWERS MUST BE APPROVED FOR WET PLACES.

## EV Notes

- FOR A SINGLE EV SPACE, A LISTED RACEWAY SHALL BE INSTALLED TO ACCOMMODATE A DEDICATED 200/204-VOLT BRANCH CIRCUIT. THE RACEWAY SHALL NOT BE LESS THAN TRADE SIZE 1 (NOMINAL 1 INCH INSIDE DIAMETER). THE RACEWAY SHALL ORIGINATE AT THE MAIN SERVICE OR SUBPANEL AND SHALL TERMINATE INTO A LISTED CABINET BOX OR OTHER ENCLOSURE IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF AN EV CHARGER.
- THE SERVICE PANEL AND/OR SUBPANEL SHALL PROVIDE CAPACITY TO INSTALL A 40 AMPERE MINIMUM DEDICATED BRANCH CIRCUIT AND SPACE(S) RESERVED TO PERMIT INSTALLATION OF A BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE. 2016 CGSBC SECTION 4.106.4.1
- NEW CONSTRUCTION SHALL COMPLY WITH SECTION 4.106.4 AND 4.106.4.2 TO FACILITATE FUTURE INSTALLATION AND USE OF EV CHARGERS. 2016 CGSBC SEC. 4.106.4.
- THE ELECTRICAL VEHICLE CHARGING SYSTEM SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (I.E. UL) IN COMPLIANCE WITH UL 2202 "STANDARD FOR ELECTRICAL VEHICLE (EV) CHARGING SYSTEM EQUIPMENT. SEC 90.7.
- IN ANY BUILDING OR INTERIOR AREA USED FOR CHARGING ELECTRICAL VEHICLES, ELECTRICAL EQUIPMENT SHALL BE INSTALLED ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE.
- THE ELECTRICAL VEHICLE CHARGING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINE AND SHALL BE SUITABLE FOR THE ENVIRONMENT (INDOOR/OUTDOOR). IF INSTALLED INDOORS, THE CHARGING STATION SHALL BE LABELED "VENTILATION NOT REQUIRED" IN LOCATION CLEARLY VISIBLE AFTER INSTALLATION. SEC 925.15.

## Basement Electrical Floor Plan

1/4" = 1'-0"

MOUNTING: Recesses		FED FROM: Panel A		PANEL A (New)		VOLTAGE: 120/240V 2P 3W	
NEMA: 3R		A/C RATING: 10,000 AMPS		A		BUS: 400 A	
				FEEDER: (2) #4, (1) #10			
NO.	Description	A	B	15	20	30	40
1	FAU	2350 VA	2350 VA	2	40	1	2
2	Condenser	1140 VA		2	30	5	4
3	Lighting Garage	360 VA	1140 VA	1	15	9	10
4	Powder Room GFI	180 VA		1	20	11	12
5	Kitchen Lights	600 VA		1	15	13	14
6	Pantry / Powder Lights	300 VA		1	15	15	16
7	Trash Compactor Receptacle	180 VA		1	15	17	18
8	Receptacle - Master Bed	360 VA		1	15	19	20
9	Microwave Receptacle	180 VA		1	20	21	22
10	Ext. Lights / Patio Lights 1 & 2	840 VA		1	15	23	24
11	Super Charger	2064 VA		2	40	25	40
12	Laundry GFI	180 VA		1	20	29	30
13	Receptacle Stair	180 VA		1	15	31	32
14	Receptacle Living	360 VA		1	15	33	34
15	Receptacle Entry	360 VA		1	15	35	36
16	Receptacle Bed 1	360 VA		1	15	37	38
17	Receptacle Bed 2	360 VA		1	15	39	40
18	N-Bath GFI	180 VA		1	15	41	42
PHASE SUBTOTALS		7954 VA	8134 VA	A - 12524 VA		B - 13264 VA	
				SUBTOTAL = 25788 VA		TOTAL = 32225 VA	

## Plan Notes

- 2-878 NEW GAS SERVICE FROM STREET (BY UTILITY)
- 11-81 SLIDE-IN GAS COOKTOP WITH OVEN BELOW AND EXHAUST HOOD AND 7" DIAMETER GALVANIZED SHEET METAL DUCT TO OUTSIDE AIR HOOD ABOVE BUILT-IN CONVECTION OVEN WITH MICROWAVE ABOVE TO BE FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR. PROVIDE 3/4" GAS AND 20 AMP 120 V. ELECTRICAL OUTLET ON SEPARATE CIRCUIT.
- 15-300 33" x 22" DOUBLE BOWL, SELF-RIMMING ENAMELED STEEL KITCHEN SINK WITH 1/2 HP GARBAGE DISPOSER
- 15-328 2P RESIDENTIAL TANKLESS GAS-FIRED HOT WATER FIXTURE ON WALL WITH 3/4" GAS AND WATER CONNECTION AND 4" DIAMETER "B" VENT (SEE MECHANICAL SYSTEM NOTES FOR MANUFACTURER AND MODEL NUMBER). VERIFY REQUIRED INPUT BTU RATE WITH OWNER.
- 15-530 36" x 36" ATTIC ACCESS FOR ATTIC FAU. PROVIDE WEATHERSTRIP OR SEAL AT ATTIC ACCESS PANEL TO PREVENT DRAFTS. ACCESS SHALL BE SIZED TO ACCOMMODATE REMOVAL OF LARGEST PIECE OF EQUIPMENT
- 15-548 EXHAUST FAN CAPABLE OF FIVE COMPLETE AIR CHANGES EVERY HOUR. DISCHARGE AIR TO OUTSIDE WITH POINT OF DISCHARGE A MINIMUM OF 3'-0" FROM ANY OPENING WHICH ALLOWS OUTSIDE AIR INTO THE BUILDING.
- 15-550 DUCT SPACE (VERIFY EXACT SIZE IN FIELD)
- 15-630 3" ON FAU WITH COOLING COIL. SET ON PLYWOOD PLATFORM WITH RETURN AIR BELOW. PROVIDE 4" DIAMETER "B" VENT TO OUTSIDE AIR. PROVIDE WATER TIGHT GALVANIZED PAN WITH 3/4" PVC CONDENSATE OVERFLOW TO DRAIN ABOVE WINDOW.
- 15-640 4" ON FAU WITH COOLING COIL. SET ON PLYWOOD PLATFORM WITH RETURN AIR BELOW. PROVIDE 4" DIAMETER "B" VENT TO OUTSIDE AIR. PROVIDE WATER TIGHT GALVANIZED PAN WITH 3/4" PVC CONDENSATE OVERFLOW TO DRAIN ABOVE WINDOW.
- 16-08 NEW 200 AMP ELECTRICAL MAIN SERVICE (UNDERGROUND FEED) (VERIFY EXACT LOCATION WITH UTILITY) (PROVIDE GAS AND WATER BONDING TO SERVICE)
- 16-46 EV PANEL
- 16-76 PROPOSED LOCATION FOR FUTURE INVERTER AND METERING EQUIPMENT FOR SOLAR PANELS PER ENERGY CODE SECTION 110.10
- 16-140 OUTLET FOR GARAGE DOOR OPERNER WITH REMOTE SAFETY CONTROLS PER FEDERAL REQUIREMENTS

## Ground Floor Electrical Plan

1/4" = 1'-0"

- 16-379 RECESSED LED (UON) "CAN" LIGHT FIXTURE WITH ADJUSTABLE "EYEBALL" TRIM ("V" = VAPOR RESISTANT, WHERE OCCURS) USE "TYPE IC" FOR FIXTURES IN DIRECT CONTACT WITH INSULATION.
- 16-380 RECESSED LED (UON) "CAN" LIGHT FIXTURE ("V" = VAPOR RESISTANT, "P" = HARDWIRED TO PHOTOCELL, WHERE OCCURS) USE "TYPE IC" FOR FIXTURES IN DIRECT CONTACT WITH INSULATION.
- 16-384 WALL SCONCE LIGHT (#84 UON)
- 16-560 SURFACE MOUNTED LED LIGHT (#84 UON) WITH MOTION DETECTOR
- 16-674 ALL NEW COMBINATION SMOKE / CARBON MONOXIDE ALARMS SHALL RECEIVE PRIMARY POWER FROM THE BUILDING WIRING. HAVE A BATTERY BACK-UP. EMIT A SIGNAL WHEN THE BATTERIES ARE LOW. HAVE PERMANENT WIRING WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION. BE WIRED SO THAT WHEN ONE IS ACTIVATED, ALL ARE ACTIVATED AND THE DETECTOR SHALL SOUND AN ALARM THAT IS AUDIBLE IN ALL SLEEPING AREAS. ("FIRST ALERT" MODEL NO. SC9120B, OR EQUAL)
- 16-675 ALL NEW SMOKE DETECTORS SHALL RECEIVE PRIMARY POWER FROM THE BUILDING WIRING. HAVE A BATTERY BACK-UP. EMIT A SIGNAL WHEN THE BATTERIES ARE LOW. HAVE PERMANENT WIRING WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION. BE WIRED SO THAT WHEN ONE IS ACTIVATED, ALL ARE ACTIVATED AND THE DETECTOR SHALL SOUND AN ALARM THAT IS AUDIBLE IN ALL SLEEPING AREAS.

## Plan Notes

Proposed Custom Home For:  
**Rodney and Brandy Arthur**  
 16733 La Bella Villa, Riverside, CA 92505

21 Dec 2020      4 March, 2021

19-3675

**Electrical Plan A-9**

16733 La Bella Villa, Riverside, CA 92505

12-31-21  
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 DATE



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