

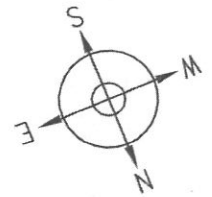
NEIGHBOR

**THIS PROJECT COMPLIES WITH THE FOLLOWING**

2022 CALIFORNIA BUILDING CODE  
2022 CALIFORNIA RESIDENTIAL CODE  
2022 CALIFORNIA ELECTRICAL CODE  
2022 CALIFORNIA ENERGY CODE  
SANTA CRUZ MUNICIPAL CODE

**PROJECT DESCRIPTION**

Install Level 2 EV Charger



**MAIN PANEL**

-Challenger  
-Panel rated for 100A

**SUB PANELS**

#1 : Challenger - 100A feeder  
breaker inside inside the main  
- located inside the house

#2 : Murray - 100A feeder  
breaker inside the main -  
located outside in drive way

**LEGEND**

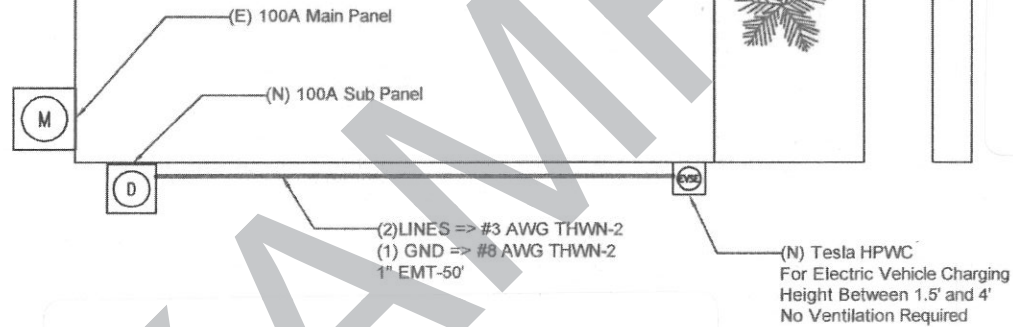
- Main Panel
- Load Center
- J-Box
- AC Disconnect
- EV Outlet
- Transfer Switch
- Conduit & Conductors
- Trench
- Tree

BACK YARD

HOUSE

ABC STREET

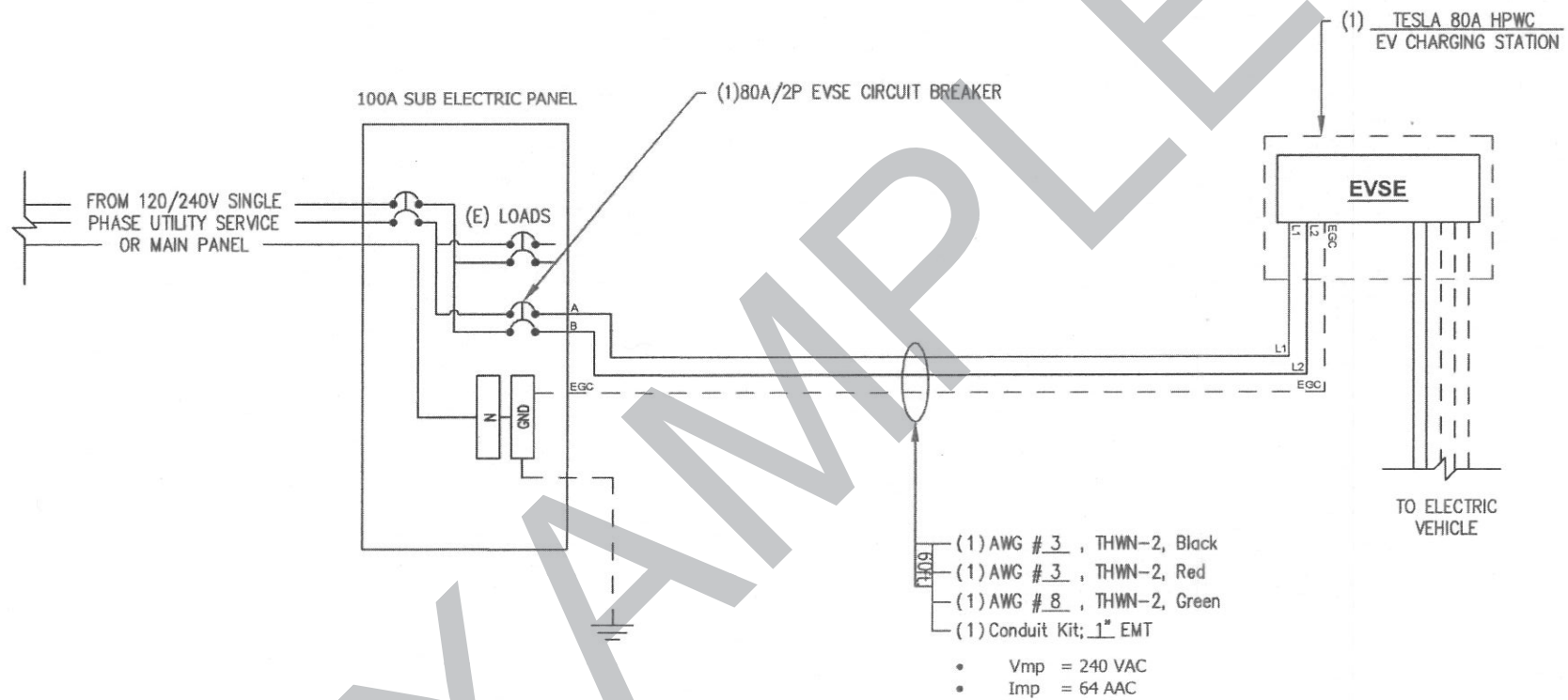
DRIVE WAY



Site Plan

MAIN PANEL SERVICE RATING:  
100A  
CIRCUIT VOLTAGE/AMPERAGE:  
240V/80A  
CHARGER:  
TESLA 80A HPWC

Mr. and Mrs. Smith  
1234 ABC Street  
Santa Cruz, CA 95060



**Single-Line Diagram**

AHL: Santa Cruz

MAIN PANEL SERVICE RATING:  
100A

CIRCUIT VOLTAGE/AMPERAGE:  
240V/80A

CHARGER:  
TESLA 80A HPWC

PREMISE OWNER:

Mr. and Mrs. Smith  
1234 ABC Street  
Santa Cruz, CA 95060

# NEC 220.83 - Adding a Circuit to an Existing Dwelling Unit

Square Feet: 2,100 Panel Breaker Rating: 100 A L1/L2: 240 Vac

**NEC 220.83(A)(1)** "General lighting and general use receptacles ... @ 3 volt/amperes per square foot as determined by 220.12"

2,100 square feet x 3w/sq ft 6,300 VA

**NEC 220.83(A)(2)** Small appliance and laundry branch circuits @1500VA per 20 amp circuit

Number of circuits 3 x 1500= 4,500 VA

**NEC 220.83(A)(3)(b)** "Household Range(s), wall-mounted oven(s), and counter-mounted cooking unit(s)"

Oven	7,680 VA
Microwave	0 VA
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	7,680 total VA

**NEC 220.83(A)(3)(a)** "All other appliances that are permanently connected, fastened in place, or connected to a dedicated circuit, at nameplate rating"

Dishwasher/Disposal	2,800 VA
Refrigerator	1,760 VA
Cooktop/Hood	1,760 VA
Washer	1,760 VA
Dryer	800 VA
Jacuzzi	1,500 VA
	0 VA
	0 VA
	0 VA
	0 VA
	0 VA
Tesla HPWC	15,360 VA
EVSE 1:	VA
EVSE 2:	VA
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	25,740 total VA
Total of non air-conditioning loads:	44,220 total VA
First 8kVA of load at 100%	8,000 VA
Remainder of load at 40%	14,488 VA
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Adjusted total of non air-conditioning load	22,488 VA

**NEC 220.83(B)** "Where additional air-conditioning equipment or electric space-heating equipment is to be installed..."

A/C Equipment Unit #1 and #2	0 VA
A/C Equipment Unit #3 and #4	0 VA
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Total of A/C Loads and All Other Loads:	22,488 total VA

Total Proposed Calculated Load:	93.70 Amps
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**Load Calculation(s)**