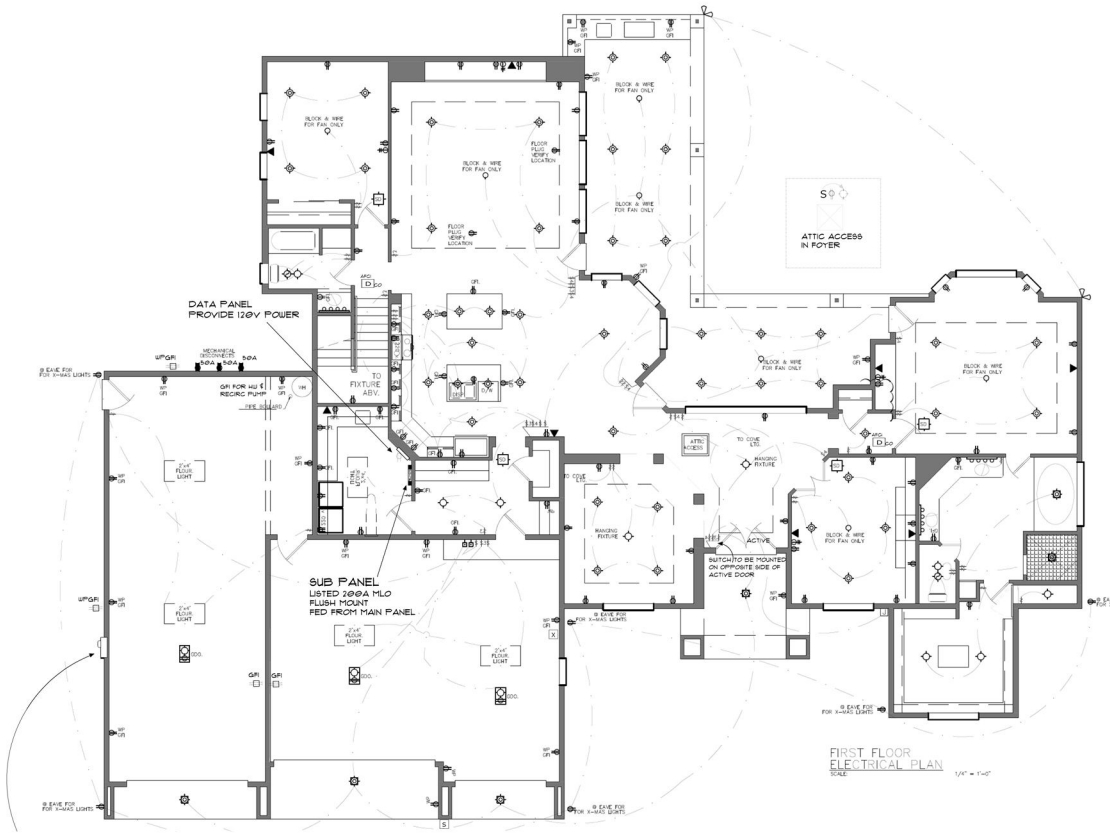
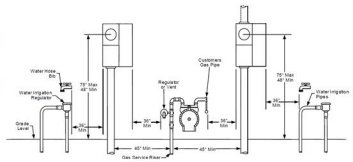


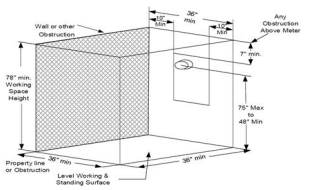
MAIN PANEL

LISTED 400A W/ 2) MAIN BREAKERS
SOLAR READY PANEL
MAINTAIN 36in CLEARANCE
IN FRONT
PROVIDE CONCRETE ENCASED
ELECTRODE PER NEC 250.52(A)(3)

Metering Equipment: Installation Requirements



Metering Equipment: Installation Requirements

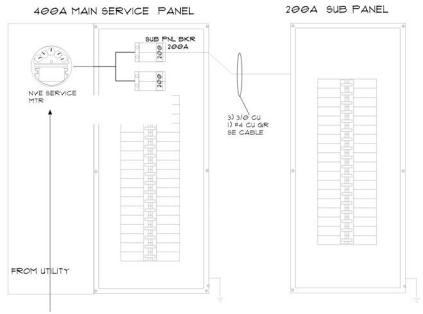


1ST FL POWER PLAN

NTS

SINGLE LINE DIAGRAM

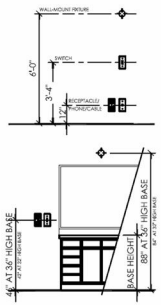
SERVICE W/ SUB PANEL FEED



ELECTRICAL SYMBOL LEGEND

	SINGLE-POLE SWITCH
3	THREE-WAY SWITCH
4	FOUR-WAY SWITCH
	110 V. DUPLEX RECEPTACLE
	110 V. DUPLEX HALF-HOT RECEPTACLE
	110 V. DUPLEX RECEPTACLE WITH GROUND-FAULT INTERRUPTER
	110 V. DUPLEX HALF-HOT RECEPTACLE WITH GROUND-FAULT INTERRUPTER
WP	INDICATES WATER PROOF OR SUITABLE FOR DAMP LOCATION
X	DOORBELL XFMR
	220 V. APPLIANCE OUTLET
A	A/C DISCONNECT
B	PUSH BUTTON
C	CHIME
SD	SMOKE ALARM
D CO	SMOKE/CO COMBO ALARM
J	J-BOX
M	MAIN ELECTRICAL PANEL
S	LIGHTED ADDRESS SIGN
	TELEVISION JACK
	CEILING-MOUNT LUMINAIRE
	WALL-MOUNT LUMINAIRE
	RECESSED CEILING-MOUNT LUMINAIRE
	FLUORESCENT CEILING-MOUNT LUMINAIRE
	EXHAUST FAN
	TELEPHONE JACK
	VIDEO JACK
	FUEL GAS
	LOOSE KEY
	HOSE BIBB
	HOSE BIBB WITH SHUT-OFF
AFCI	ARC-FAULT INTERUPTER CIRCUIT
	CEILING MOUNT PADDLE FAN W/LIGHT

TYPICAL INSTALLATION HEIGHTS



NOTE:

THESE PLANS HAVE BEEN DESIGNED TO COMPLY WITH THE 2011 NATIONAL ELECTRICAL CODE AS AMENDED AND ADOPTED

ELECTRICAL NOTES

1. SMOKE ALARMS TO BE POWERED BY 110V AND INTERCONNECTED WITH A BATTERY BACKUP AND SIMULTANEOUS ALARM.
2. ELECTRICAL FIXTURES INSTALLED ABOVE TUBS AND SHOWERS TO BE WATERPROOF.
3. ALL 125-VOLT SINGLE-PHASE, 15 AND 20 AMPERE RECEPTACLES INSTALLED IN THE FOLLOWING LOCATIONS SHALL HAVE GROUND FAULT CIRCUIT INTERRUPTER PROTECTION:
   ALL RECEPTACLES LOCATED IN BATHROOMS, GARAGES, OUTDOORS, SERVING COUNTERTOPS IN KITCHENS, AND IN WET BARS WITHIN 6' OF A SINK.
4. DUPLEX RECEPTACLES SHALL BE INSTALLED IN ALL LIVING AND SLEEPING ROOMS (AND SIMILAR USE ROOMS) SO THAT NO POINT ALONG ANY LENGTH OF WALL 2'-0" OR GREATER IS MORE THAN 6'-0" FROM ANY OUTLET IN THAT SPACE, INCLUDING FIXED PANELS ON EXTERIOR WALLS. FLOOR OUTLETS SHALL NOT BE COUNTED AS PART OF THE REQUIRED NUMBER UNLESS LOCATED CLOSE TO A WALL.
5. DUPLEX RECEPTACLES SHALL BE INSTALLED IN KITCHENS AT EACH COUNTER SPACE 12" OR WIDER, AND SO THAT NO POINT ALONG ANY LENGTH OF COUNTER IS MORE THAN 4'-0" FROM ANY OUTLET. COUNTERS SEPARATED BY FIXED-IN-PLACE APPLIANCES SHALL BE CONSIDERED AS SEPARATE COUNTERTOPS.
6. ISLANDS AND PENINSULAR COUNTERTOPS GREATER IN SIZE THAN 12"x24" SHALL HAVE AT LEAST ONE RECEPTACLE OUTLET AND SHALL, IN GENERAL, COMPLY WITH THESE REQUIREMENTS.
7. NO MORE THAN 4 DUPLEX OUTLETS SERVING THE REQUIRED COUNTERTOP RECEPTACLE SHALL BE INSTALLED ON ANY SMALL APPLIANCE BRANCH CIRCUIT.
8. ONE DUPLEX GFI RECEPTACLE SHALL BE PROVIDED FOR EACH LAVATORY IN BATHROOMS. BATHROOM RECEPTACLE OUTLETS SHALL BE SUPPLIED BY AT LEAST ONE 20 AMP BRANCH CIRCUIT. SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS.
9. ONE DUPLEX GFI RECEPTACLE EACH SHALL BE PROVIDED AT: FRONT OF DWELLING, REAR OF DWELLING, AND IN GARAGE.
10. THE FOLLOWING FASTENED-IN-PLACE APPLIANCES ARE REQUIRED TO HAVE A SEPARATE MINIMUM 20-AMPERE CIRCUIT:
    DISHWASHER, TRASH COMPACTOR, MICROWAVE OVEN, RANGE HOOD, CLOTHES WASHER AND HYDRO-MASSAGE BATHTUB. THE CLOTHES WASHER CIRCUIT MAY SERVE ONE ADDITIONAL OUTLET IN THE LAUNDRY AREA.
11. ALL BRANCH CIRCUITS THAT SUPPLY 120-VOLT, SINGLE-PHASE 15 AND 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN DWELLING UNIT BEDROOMS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, SUNROOMS, REC. ROOMS, CLOSETS, HALLWAYS OR SIMILAR ROOMS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION TYPE INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT (NEC ARTICLE 210.12(B)) INCLUDING LIGHTS AND SMOKE ALARMS.
12. THE MAXIMUM NUMBER OF OUTLETS ON A 20-AMP, 125-VOLT CIRCUIT USED EITHER EXCLUSIVELY FOR RECEPTACLES OR EXCLUSIVELY FOR LIGHTING FIXTURES OR FOR ANY COMBINATION OF RECEPTACLES AND LIGHTING FIXTURES SHALL BE 12.
13. A 125-VOLT, SINGLE-PHASE 15 AND 20 AMP RATED GFCI RECEPTACLE OUTLET SHALL BE INSTALLED AT AN ACCESSIBLE LOCATION ON THE SAME LEVEL AS AND WITHIN 25 FEET FOR THE SERVICING OF HEATING, AIR-CONDITIONING AND REFRIGERATION EQUIPMENT.
14. WHERE A BOX IS LISTED AS THE SOLE SUPPORT OF A CEILING-SUSPENDED(PADDLE) FAN, THE BOX SHALL BE LISTED FOR THE APPLICATION AND FOR THE WEIGHT OF THE FAN SUPPORTED.
15. ALL INTERIOR AND EXTERIOR STAIRWAYS SHALL BE PROVIDED WITH A MEANS TO ILLUMINATE THE STAIRS, INCLUDING THE LANDINGS AND TREADS. INTERIOR STAIRWAYS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF EACH LANDING OF THE STAIRWAY. FOR INTERIOR STAIRS THE ARTIFICIAL LIGHT SOURCES SHALL BE CAPABLE OF ILLUMINATING TREADS AND LANDINGS TO LEVELS NOT LESS THAN 1 FOOT-CANDLE MEASURED AT THE CENTER OF TREADS AND LANDINGS.
16. ALL LIGHTING FIXTURES TO BE INSTALLED WITHIN A ZONE MEASURED 3 FEET HORIZONTAL AND 8 FEET VERTICAL FROM THE TOP OF THE BATHTUB RIM OR SHOWER STALL THRESHOLD (WHICH IS ALL ENCOMPASSING AND INCLUDES THE ZONE DIRECTLY OVER A TUB OR SHOWER STALL) SHALL BE GFCI PROTECTED.
17. LUMINAIRES IN CLOTHES, CLOSETS SHALL BE INSTALLED IN ACCORDANCE WITH 2011NEC.
18. When more than 1 smoke alarm or carbon monoxide alarm is req. to be installed within an individual dwelling unit all alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit. Smoke and carbon monoxide alarms shall be installed in the following locations: (IRC Section R314.3 as amended)
    a. Smoke alarms in each sleeping room
    b. Smoke alarms outside of each separate sleeping area in the immediate vicinity of the bedrooms
    c. Smoke alarms on each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
    d. Carbon monoxide alarms outside of sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel fired appliances are installed and in dwelling units that have attached garages.
19. In all areas specified in 210.52, all 125 volt 15 and 20 amp receptacles shall be listed tamper-resistant receptacles. (NEC 406.11)
20. A minimum of 90% of the lamps in permanently installed fixtures shall be high efficacy lamps (ECC)

NEC 2011(6A)
THE REQUIREMENT FOR AFCI PROTECTION OF 15A, 15A OR 20A BRANCH CIRCUITS SERVING OUTLETS AND DEVICES IN DWELLINGS HAS BEEN EXPANDED TO INCLUDE KITCHENS AND LAUNDRY AREAS.
AFCI PROTECTION IS NOW REQUIRED IN THE FOLLOWING ROOMS AND AREAS:
- BEDROOMS - DINING ROOMS - KITCHENS
- LIBRARIES - RECREATION ROOMS - CLOSETS
- FAMILY ROOMS - LIVING ROOMS - SUNROOMS
- DENS - HALLWAYS - PARLORS - LAUNDRY AREAS
- SIMILAR ROOMS OR AREAS

PROJECT TITLE
RACETRACK CUSTOM
424 RACETRACK RD
HENDERSON NV 89015

SHEET TITLE
POWER PLAN

ISSUE DATE

DRAWN BY

PROJECT #

E-1

RESIDENTIAL ELECTRICAL LOAD CALCULATIONS

Owner: Custom Residence — Date: 11/20/19

Address: Racetrack and Havare — Prepared by: JB

General Lighting Load Sq.Ft. 4326	X 3 Volt Amps	=	12978 VA
Small Appliance Circuits at 1500 VA each x 2 (min. of two)		=	3000 VA
Laundry (Washing Machine) Circuit 1500 VA x 1 (min. of one)		=	1500 VA
Sub-Total		=	17478 **VA**
First 3,000 VA of Lighting, Small Appliance, Laundry Load at 100%		=	3,000 VA
From 3,001 to 120,000 VA at 35% 14478	X .35	=	5067 VA
Over 120,000 VA use 25%	X .25	=	VA
Electrical Cooking Appliances, Use NEC Table 220-55			
(Number of Appliances) 1 Demand 100 % x Total KW 8 (Column A) x 1,000		=	8000 VA
(Number of Appliances) Demand % x Total KW (Column B) x 1,000		=	VA
(Number of Appliances) Demand x Total KW (Column C) x 1,000		=	VA
Dryer Load NEC Table 220-54		=	0 VA
(1) Sub-Total		=	16067 **VA**

Heating/Air Conditioning – List type and VA at 100%

(H) Heat Pump	(G) Gas + Cool	(S) Heat Strip	(A) Cir Fans
( )	( ) 2880	( )	( ) 420
( )	( ) 2880	( )	( ) 420
( )	( ) 2880	( )	( ) 420
( )	( )	( )	( )
8640			1260

(2) Sub-Total = 9900 **VA**

Fixed Appliances – If fewer than four units, use 100%. If four or more, use 75% of the nameplate rating.

Microwave	1500 VA x 1	Food Center	600 VA x
Compactor	1200 VA x	Hot Water	4500 VA x
Dishwasher	1200 VA x 1		VA x
Disposal	600 VA x 1		VA x
Cent Vacuum	1600 VA x		VA x

Appliance Subtotal 3300 x **(100%) OR (75%)** **(3) Sub-Total** = 3300 **VA**

Add 25% of the largest motor (typical AC compressor)

2880 X 25% LM 720 **(4) Sub-Total** = 720 **VA**

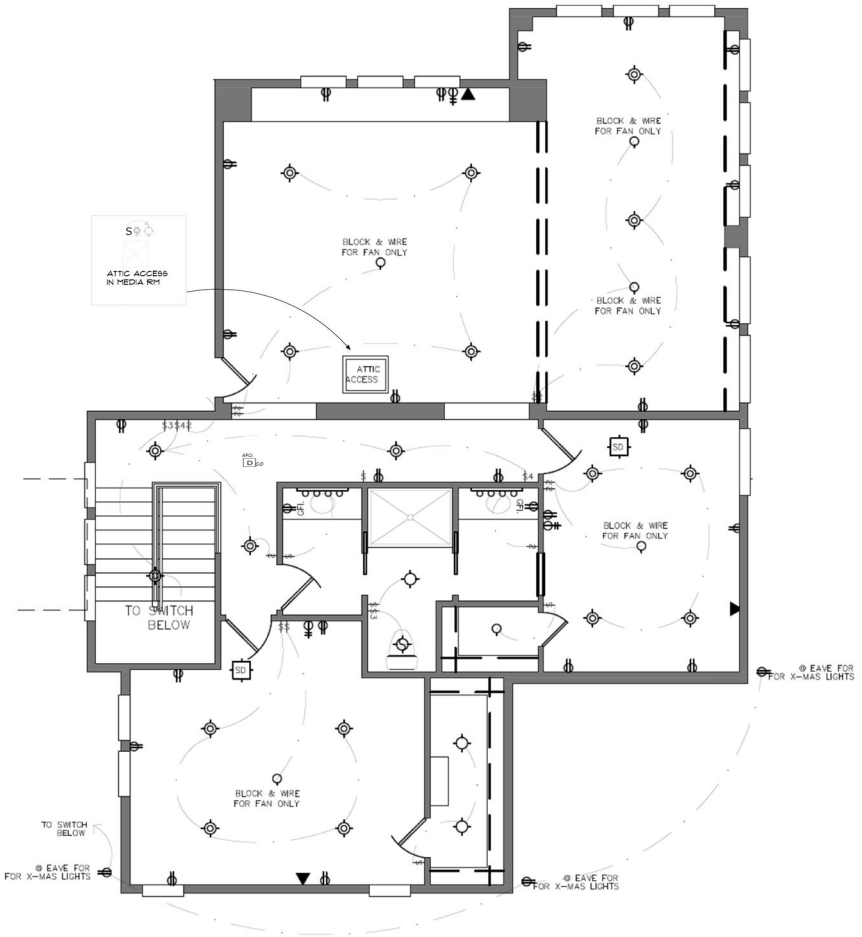
5) Spare 20amps x 240 volts Sub-Total = 4,800 **VA**

GRAND TOTAL (Add Sub-Totals (1), (2), (3), (4), (5)) = 34787 **VA**

Total Volt Amps 34787 Divide by 240 Volts = 145 Amps

Service Size 400 Grounding Electrode Conductor #3

BFPE-0200
Rev. (4/15/08)



2ND FLOOR ELE DESIGN

☐ 2ND FLOOR & ELE CALC

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RACETRACK CUSTOM
424 RACETRACK RD
HENDERSON NV 89015

SHEET TITLE
2ND FL & ELE CALC

ISSUE DATE

DRAWN BY

PROJECT #

E-2