PROJECT: **DATE:**

Wire Resistance At 75 Degrees Celsius, 167 Degrees Fahrenheit

	Ohms / ft
12GA =	0.00193
14GA =	0.00307
16GA =	0.00489
18GA =	0.00777

SAMPLE SPEAKER CALCULATION

WIRE GAUGE: 16 **Sld.** **CIRCUIT VOLTAGE:** 25

(18,16,14,12) (25 OR 70 VRMS)

AMP-1 **AMPLIFIER SIZE:** 95 WATTS

AUDIO CIRCUIT CALCULATION

CIRCUIT NUMBER	APPLIANCES QUANTITIES / TAP VALUES: SPEAKER TAPPED AT 0.25 Watts	SPEAKER TAPPED AT 0.5 Watts	SPEAKER TAPPED AT 1 Watts	SPEAKER TAPPED AT 2 Watts	SPEAKER TAPPED AT 4 Watts	SPEAKER TAPPED AT 8 Watts	SPEAKER TAPPED AT 15 Watts	TOTAL CIRCUIT LOAD (WATTS)	ESTIMATED CIRCUIT LENGTH (FEET)	MAXIMUM -3 dB DROP PER CIRCUIT: ACTUAL WIRE/LOSS (dB)	MAXIMUM ALLOWABLE CKT. LENGTH (FEET)	TOTAL CIRCUIT RESISTANCE (OHMS)
1S1	8	10	5	4		0	0	20.00 Watts	825 ft.	-1.99 dB	1,323 ft.	8.1 Ohms
CKT #	0	0	0	0	0	0	0	0.00 Watts	0 ft.	0.00 dB	0 ft.	0.0 Ohms
CKT #	0	0	0	0	0	0	0	0.00 Watts	0 ft.	0.00 dB	0 ft.	0.0 Ohms
CKT #	0	0	0	0	0	0	0	0.00 Watts	0 ft.	0.00 dB	0 ft.	0.0 Ohms
CKT #	0	0	0	0	0	0	0	0.00 Watts	0 ft.	0.00 dB	0 ft.	0.0 Ohms
Appliance Summary	8	10	5	4	0	0	0	Total Load (Watts) 20.00				

80% OF MAX AVAILABLE= 76 WATTS

AMPLIFIER RESERVE CAPACITY BASED ON 80% MAX = 56 WATTS

ACTUAL AMPLIFIER RESERVE CAPACITY BASED ON 100% OF AVAILABLE POWER = 75 WATTS

Format shown is a sample format, the contractor may format calculations as they like as long as the the following information is clearly indicated in the calculations:

SEE SHADED ITEMS ABOVE FOR EXAMPLES OF EACH NUMBERED ITEM BELOW

1. Clearly indicate the amplifier the calculation is for.
2. Clearly indicate wire gauge and type (solid or stranded)
3. Clearly indicate speaker voltage, 25 or 70.
4. Clearly indicate amplifier size, 20W, 40W, 100W etc…
5. Clearly indicate total length of speaker circuit cable.
6. Clearly indicate units for calculations.
7. Clearly indicate total load on amplifier.
8. Clearly indicate 80% of maximum amplifier capacity and excess capacity available based on this and the total speaker load connected to amplifier.
9. Clearly show the progression of the caclulation.