

**Cumberland County Courthouse  
Portland, Maine  
Remote Booster Panel Battery Calculations**

**Strobe Circuit Draw Remote Booster Panel**

	HSW Horn Strobe				STW Strobe Only			Quiescent Current	Alarm Current	Remaining % of Ckt Capacity
	15cd	30cd	75cd	110cd	15cd	30cd	75cd			
	82	102	148	197	57	85	135			
Circuit1	1		2	1	3	3	1	0.0300	0.1500	
Circuit2									1.1360	54.56 %
Circuit3									0.0000	100.00 %
Circuit4									0.0000	100.00 %
								<b>0.0300</b>	<b>1.2860</b>	83.93 %
								<b>Total Quiescent</b>	<b>Total Alarm</b>	Remaining

All currents are expressed as mA.  
Max current per ckt = 2.5 Amps. Max current per panel = 8 Amps.

Total Quiescent Amp x Time Required (24 Hours)      0.720 AmpHr  
 Total Alarm Amp x Time Required (15 Minutes)      0.322 AmpHr  
 Total Battery Required      1.042 AmpHr  
 Total Battery Required + 20%      **1.250 AmpHr**  
 Battery Supplied      **7.2 AmpHr**

**NAC Circuit Voltage Drop/Maximum Length Calculations**

**Formulas Used:**  
 $R_t = (D) \times (R_w) / 1000'$   
 $V_d = (R_t) \times (I_t)$   
 Substitute for  $(R_t)$  and solve for D  
 $D = ((4.0) \times (1000)) / ((R_w) \times (I_t))$

**$R_t$  = Total Circuit Resistance**  
 **$D$  = Total Circuit Length (Feet)**  
 **$R_w$  = Wire Resistance ( $\Omega$ ) per 1000' Pair (Ohms)**  
 **$V_D$  = Circuit Voltage Drop (Max allowed is 4.0Vdc)**  
 **$I_t$  = Total Circuit Current**

**Notes:**

1. NAC Circuit terminal voltage 24Vdc.
2. A maximum allowable voltage drop of 4Vdc will provide a minimum of 20 Vdc per circuit.
3. Current values listed per device are based on 20Vdc.

	HSW Horn Strobe				STW Strobe Only			Total Circuit Current	$\Omega$ per 1000' Pair	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd		12AWG (3.5)	14AWG (5.2)
	82	102	148	197	57	85	135			
Circuit1	1	0	2	1	3	3	1	1.1360	1006.04    677.14 Ft	
Circuit2	0	0	0	0	0	0	0	0.0000	#DIV/0!    #DIV/0! Ft	
Circuit3	0	0	0	0	0	0	0	0.0000	#DIV/0!    #DIV/0! Ft	
Circuit4	0	0	0	0	0	0	0	0.0000	#DIV/0!    #DIV/0! Ft	