Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 03/16/17

NAC Circuit Voltage Drop Calculation

Project Name	**CMP- Portland Service Center**			
Date	**2/6/2017**			
Circuit Number	**Nac#15**			
Area Covered				
NAC Source Alarm Voltage	19.1		Wire	Resistance
Minimum Device Voltage	16		Gauge	Per KFt Cable
Distance to first appliance	35		14	3.14
Total Circuit Current	1.342			

Wire Gauge for balance of circuit	14	3.14

Circuit is within limits

	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.125		18.95	0.15	0.8%
Appliance 2	0.125	35	18.82	0.28	1.5%
Appliance 3	0.129	35	18.70	0.40	2.1%
Appliance 4	0.281	50	18.55	0.55	2.9%
Appliance 5	0.151	40	18.46	0.64	3.3%
Appliance 6	0.190	40	18.40	0.70	3.7%
Appliance 7	0.151	40	18.35	0.75	3.9%
Appliance 8	0.190	40	18.33	0.77	4.0%
END			18.33	0.77	4.0%
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Totals	1.342	315			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 2014 NEC Table 8 Uncoated DC resistance. All resistance is based on solid conductors