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#16**			
Area Covered				
NAC Source Alarm Voltage	19.1		Wire	Resistance
Minimum Device Voltage	16		Gauge	Per KFt Cable
Distance to first appliance	45		14	3.14
Total Circuit Current	1.062			

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	0.129		18.95	0.15	0.8%
Appliance 2	0.129	25	18.88	0.22	1.2%
Appliance 3	0.129	75	18.69	0.41	2.2%
Appliance 4	0.125	40	18.60	0.50	2.6%
Appliance 5	0.125	25	18.56	0.54	2.8%
Appliance 6	0.129	40	18.51	0.59	3.1%
Appliance 7	0.129	30	18.48	0.62	3.3%
Appliance 8	0.167	40	18.46	0.64	3.4%
END			18.46	0.64	3.4%
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Totals	1.062	320			

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