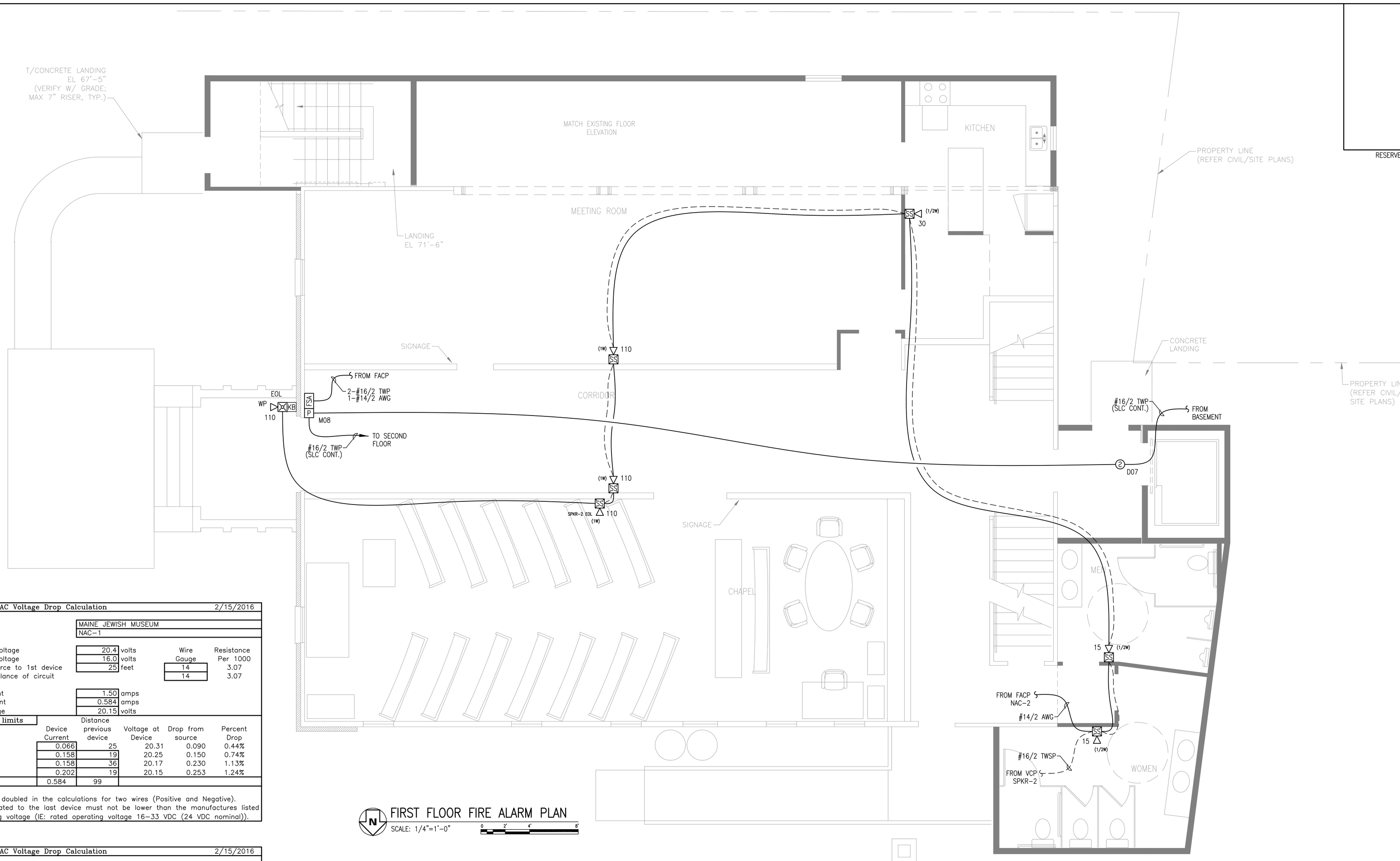

FIRST FLOOR FIRE ALARM PLAN

SCALE: 1/4"=1'-0"

Point to Point NAC Voltage Drop Calculation			2/15/2016
Project Name	MAINE JEWISH MUSEUM		
Circuit Number	NAC-1		
Nominal System Voltage	20.4 volts	Wire Gauge	Resistance Per 1000
Minimum Device Voltage	16.0 volts		
Distance from source to 1st device	25 feet	14	3.07
Wire Gauge for balance of circuit		14	3.07
Max Output Current	1.50 amps		
Total Circuit Current	0.584 amps		
End of Line Voltage	20.15 volts		

Circuit is within limits	Device Current	Distance previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.066	25	20.31	0.090	0.44%
Device 2	0.158	19	20.25	0.150	0.74%
Device 3	0.158	36	20.17	0.230	1.13%
Device 4	0.202	19	20.15	0.253	1.24%
Totals	0.584	99			

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative).
The voltage calculated to the last device must not be lower than the manufactures listed minimum operating voltage (IE: rated operating voltage 16–33 VDC (24 VDC nominal)).

Point to Point NAC Voltage Drop Calculation			2/15/2016
Project Name	MAINE JEWISH MUSEUM		
Circuit Number	NAC-2		
Nominal System Voltage	20.4 volts	Wire Gauge	Resistance Per 1000
Minimum Device Voltage	16.0 volts		
Distance from source to 1st device	40 feet	14	3.07
Wire Gauge for balance of circuit		14	3.07
Max Output Current	1.50 amps		
Total Circuit Current	1.044 amps		
End of Line Voltage	19.51 volts		

Circuit is within limits	Device Current	Distance previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.066	40	20.14	0.256	1.26%
Device 2	0.066	8	20.10	0.304	1.49%
Device 3	0.094	54	19.79	0.607	2.97%
Device 4	0.202	37	19.61	0.793	3.89%
Device 5	0.202	11	19.57	0.834	4.09%
Device 6	0.202	3	19.56	0.842	4.13%
Device 7	0.212	34	19.51	0.886	4.34%
Totals	1.044	187			

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative).
The voltage calculated to the last device must not be lower than the manufactures listed minimum operating voltage (IE: rated operating voltage 16–33 VDC (24 VDC nominal)).

Point to Point NAC Voltage Drop Calculation			2/15/2016
Project Name	MAINE JEWISH MUSEUM		
Circuit Number	NAC-3		
Nominal System Voltage	20.4 volts	Wire Gauge	Resistance Per 1000
Minimum Device Voltage	16.0 volts		
Distance from source to 1st device	40 feet	14	3.07
Wire Gauge for balance of circuit		14	3.07
Max Output Current	1.50 amps		
Total Circuit Current	0.518 amps		
End of Line Voltage	20.10 volts		

Circuit is within limits	Device Current	Distance previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.202	40	20.27	0.127	0.62%
Device 2	0.158	45	20.19	0.215	1.05%
Device 3	0.158	85	20.10	0.297	1.46%
Totals	0.518	170			

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative).
The voltage calculated to the last device must not be lower than the manufactures listed minimum operating voltage (IE: rated operating voltage 16–33 VDC (24 VDC nominal)).

Point to Point NAC Voltage Drop Calculation			2/15/2016
Project Name	MAINE JEWISH MUSEUM		
Circuit Number	NAC-4		
Nominal System Voltage	20.4 volts	Wire Gauge	Resistance Per 1000
Minimum Device Voltage	16.0 volts		
Distance from source to 1st device	50 feet	14	3.07
Wire Gauge for balance of circuit		14	3.07
Max Output Current	1.50 amps		
Total Circuit Current	0.382 amps		
End of Line Voltage	20.17 volts		

Circuit is within limits	Device Current	Distance previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.158	50	20.28	0.117	0.57%
Device 2	0.066	29	20.24	0.157	0.77%
Device 3	0.158	70	20.17	0.225	1.10%
Totals	0.382	149			

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative).
The voltage calculated to the last device must not be lower than the manufactures listed minimum operating voltage (IE: rated operating voltage 16–33 VDC (24 VDC nominal)).

RESERVED FOR CITY STAMP

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	2/16/2016

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FIRST FLOOR FIRE ALARM PLAN & CALCULATIONS

DRAWN	JPB UNICAD JOB #16081
CHECKED	WAYNE B. HAWS NICET IV 90496
DATE	2/16/2016
REVISION	0
SCALE	1/4" = 1'-0"

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