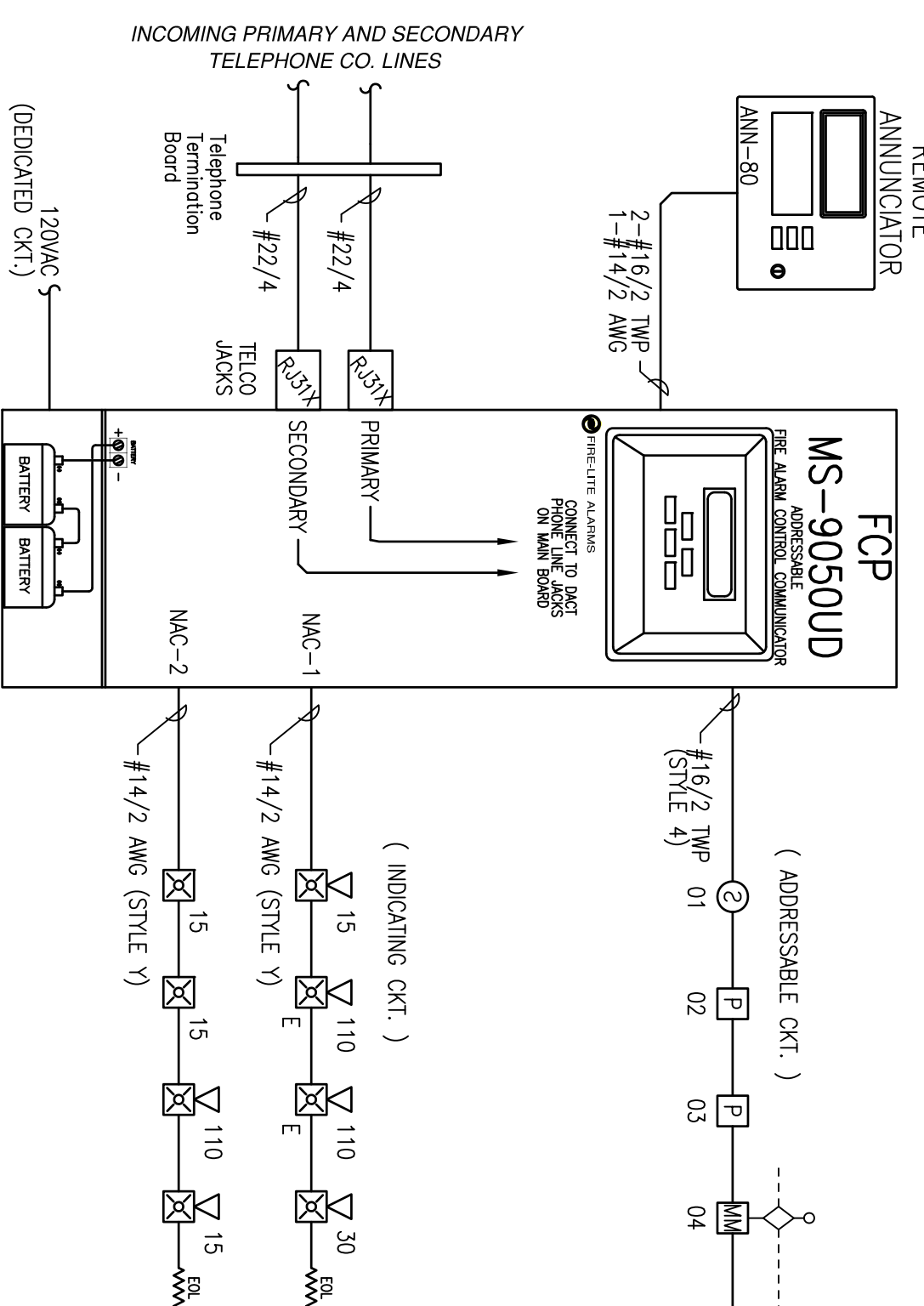


BASEMENT FIRE ALARM PLAN

FIRST FLOOR FIRE ALARM PLAN



FIRE ALARM RISER DIAGRAM
SCHEMATIC: NO SCALE

OPERATIONS MATRIX	
FIRE ALARM INPUT	FIRE ALARM OUTPUT
SMOKE DETECTORS	ACTIVATE ALARM INDICATOR
PULL STATIONS	ACTIVATE AUDIBLE ALARM
VALVE TAMPER SWITCHES	ACTIVATE SUPERVISORY INDICATOR
LOW AIR PRESSURE SWITCH	ACTIVATE AUDIBLE SUPERVISORY SIGNAL
FIRE ALARM AC POWER FAIL	ACTIVATE TROUBLE INDICATOR
FIRE ALARM LOW BATTERY	ACTIVATE AUDIBLE TROUBLE INDICATOR
OPEN CIRCUIT	TRANSMIT ALARM SIGNAL
GROUND FAULT	TRANSMIT SUPERVISORY SIGNAL
NAC SHORT CIRCUIT	TRANSMIT TROUBLE SIGNAL
LOSS OF AC TO BUILDING	

GENERAL NOTES:

- THESE DRAWINGS ARE DIAGRAMMATIC. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS.
- INSTALLATION SHALL COMPLY WITH NEC, NFPA 72 AND ALL OTHER APPLICABLE CODES AS REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- WIRING DEPICTED ON THESE PLANS IS SCHEMATIC - ACTUAL WIRE LOCATIONS MAY DIFFER FROM THESE PLANS. WIRING SHALL BE PERFORMED AS ACTUAL BUILDING CONSTRUCTION CONDITIONS ALLOW AND TO MINIMIZE PENETRATIONS THROUGH AREA SEPARATION WALLS AND FINE WALLS. THE USE OF A RACKMAY IS PERMITTED AS LONG AS NO 110V OR HIGHER VOLTAGE CABLES ARE IN THE SAME RACKMAY.
- FIRE RATINGS SHALL BE MAINTAINED FOR ALL PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION.
- POWER FOR ALL FIRE ALARM PANELS AND FIRE ALARM POWER SUPPLIES MUST BE PROVIDED BY A DEDICATED AC BRANCH CIRCUIT.
- POWER-LIMITED AND NONPOWER-LIMITED CIRCUIT WIRING MUST REMAIN SEPARATED IN CABINET. ALL POWER-LIMITED CIRCUIT WIRING MUST REMAIN AT LEAST 0.25" AWAY FROM ANY NONPOWER-LIMITED CIRCUIT WIRING. FURTHERMORE, ALL POWER-LIMITED AND NONPOWER-LIMITED CIRCUIT WIRING MUST ENTER AND EXIT THE CABINET THROUGH DIFFERENT KNOCK OUTS AND/OR SEPARATE CONDUITS.
- WHEN UTILIZING CLASS "X" CIRCUITS, SEPARATE OUTGOING AND RETURN CONDUCTORS OF CLASS "X" CIRCUITS BY A MINIMUM OF 12" WHERE RUN VERTICALLY AND 48" WHERE RUN HORIZONTALLY.
- WHEN UTILIZING SHIELDED CABLE THE SHIELDS THROUGH AND INSULATE AT EACH JUNCTION BOX. INSULATE AND TAPE BACK AT END.
- ALL FIRE ALARM CABLING SHALL BE ACCEPTABLE TO THE FIRE ALARM EQUIPMENT MANUFACTURER FOR THE INTENDED PURPOSE.
- SMOKE DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER CONSTRUCTION CLEAN-UP IS COMPLETED AND FINAL.
- LOCATE SMOKE DETECTORS A MINIMUM OF THREE (3) FEET FROM MECHANICAL DIFFUSERS, WALL-MOUNTED SMOKE DETECTORS SHALL BE LOCATED A MINIMUM OF 4" AND A MAXIMUM OF 12" FROM CEILING. CEILING-MOUNTED SMOKE DETECTORS SHALL BE MOUNTED ON CEILINGS AND NOT ON THE BOTTOMS OF BEAMS OR JOISTS.
- PROVIDE SYNCHRONIZATION OF ALL VISUAL NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ALL REQUIRED SYNC MODULES. PROVIDE A MULTI-SYNC MODE SLAVE CONNECTION BETWEEN ALL SYNC MODULES.
- VERIFY ALL FIELD SELECTABLE AUDIBILITY SETTINGS OF NOTIFICATION APPLIANCES WITH FIRE ALARM CONTRACTOR.
- UPON COMPLETION OF THE FIRE ALARM SYSTEM INSTALLATION AND PROGRAMMING, THE INSTALLING CONTRACTOR SHALL PERFORM FINAL TESTING OF THE ENTIRE SYSTEM PER ALL APPLICABLE CODES, AND SHALL COORDINATE AND PERFORM A FINAL FIRE ALARM SYSTEM INSPECTION.
- PROVIDE OFF-SITE MONITORING AS REQUIRED BY THE INTERNATIONAL FIRE CODE, SECTION 907.15 AND THE LOCAL AUTHORITY HAVING JURISDICTION.
- INSTALLING CONTRACTOR SHALL, PHYSICALLY LABEL ALL INITIATING DEVICES AND NOTIFICATION APPLIANCE CIRCUIT END OF LINE (WHEN WIRING CLASS "B"), THESE LABELS SHALL BE IN PLACE PRIOR TO START-UP AND TESTING.

SHEET NOTES:

- ADDRESSABLE MONITOR MODULE(S) PROVIDED TO MONITOR ALL WATER FLOW, PRESSURE SWITCHES, TAMPER SWITCHES AND POST INDICATING VALVES ASSOCIATED WITH THE FIRE SPRINKLER SYSTEM. INSTALLING CONTRACTOR SHALL FIELD VERIFY EXACT MOUNTING, CIRCUITING AND PROGRAMMING REQUIREMENTS. FIELD VERIFY EXACT QUANTITY AND LOCATION(S).

FCP Battery Calculation			
PROJECT NAME: 1854 FOREST AVENUE		10/1/2014	
Required Standby Time: 224 Hours			
Required Alarm Time: 5 Minutes			
Regulated Load in Standby			
Device Type	Number of Devices	Current (amps)	Total Current (amps)
MS-9050UD Main Circuit Board	1	0.172000	0.172000
ANN-80 Remote Annunciator	1	0.015000	0.015000
SD353 Smoke Detector	1	0.000350	0.000350
80-12X Pull Stations	4	0.00023	0.00092
MM-500 Monitor Modules	4	0.00040	0.00160
TOTAL STANDBY LOAD			0.13782
Regulated Load in ALARM			
Device Type	Number of Devices	Current (amps)	Total Current (amps)
MS-9050UD Main Circuit Board	1	0.200000	0.200000
ANN-80 Remote Annunciator	1	0.040000	0.040000
All Addressable Devices - Maximum Draw	1	0.400000	0.400000
NAC-1	1	0.610000	0.610000
NAC-2	1	0.425000	0.425000
TOTAL ALARM LOAD			1.67300
Battery Requirements			
Standby Load	0.13782	X	Required Standby Time in Hours
Alarm Load	1.67300	X	Required Alarm Time in Hours
Current (amps)	0.13782	X	Required Standby Time in Hours
Current (amps)	1.67300	X	Required Alarm Time in Hours
Total Amper Hours (before derating factor)	0.08333	=	3,447.10
Derating Factor		X	1.2
TOTAL AMPERE HOURS REQUIRED			4,136.82
BATTERIES TO BE PROVIDED (2 - 12V)			7 AH

FIRE ALARM SYMBOL LEGEND

SYMBOL	DESCRIPTION	MOUNTING
[FCP]	FIRE ALARM CONTROL PANEL	WALL-TOP @ 66"
[FES]	FIRE ALARM POWER SUPPLY	FIELD VERIFY
[FSA]	FIRE SYSTEM ANNUNCIATOR	WALL-TOP @ 66"
[FSD]	FIRE/SMOKE DAMPER	BY OTHERS
[SD]	SMOKE DETECTOR	CEILING
[DST]	DUCT SMOKE DETECTOR	BY OTHERS
[HED]	HEAT DETECTOR	CEILING
[AM]	ADDRESSABLE CONTROL MODULE	FIELD VERIFY
[MM]	ADDRESSABLE MONITOR MODULE	FIELD VERIFY
[P]	MANUAL PULL STATION	WALL @ 48"
[R]	CONTROL RELAY (MULTI-VOLTAGE)	FIELD VERIFY
[RM]	ADDRESSABLE RELAY MODULE	FIELD VERIFY
[M]	MAGNETIC DOOR HOLDER	FIELD VERIFY
[WFS]	WATER FLOW SWITCH	BY OTHERS
[VTS]	VALVE TAMPER SWITCH	BY OTHERS
[LAP]	LOW AIR PRESSURE SWITCH	BY OTHERS
[B]	BELL	BY OTHERS
[CMS]	CEILING MOUNT STROBE	FIELD VERIFY
[CMS]	CEILING MOUNT SPEAKER / STROBE	FIELD VERIFY
[H]	HORN	WALL @ 10'-0"
[H]	HORN / STROBE	WALL 80"-96"
[S]	SPEAKER / STROBE	WALL 80"-96"
[S]	SPEAKER	WALL @ 90"
[S]	STROBE	WALL 80"-96"
[KB]	KNOX BOX	FIELD VERIFY

NAC Circuit Voltage Drop Calculation

Project Name	1854 FOREST AVENUE	2/23/2012
Circuit Number	NAC-1	
Nominal System Voltage	20.2	Volts
Minimum Device Voltage	15	Volts
Distance from source to 1st device	8	Feet
Wire Gauge for balance of circuit	14	
Max. Output Current	1.0	amps
Total Circuit Current	0.610	amps

Circuit is within limits			
Device	Distance previous device	Voltage at source	Drop from source
Device 1	0.079	20.37	0.03
Device 2	0.212	20.23	0.17
Device 3	0.212	20.16	0.24
Device 4	0.107	20.14	0.28
Totals	0.610	124	

NAC Circuit Voltage Drop Calculation

Project Name	1854 FOREST AVENUE	2/23/2012
Circuit Number	NAC-2	
Nominal System Voltage	20.2	Volts
Minimum Device Voltage	15	Volts
Distance from source to 1st device	23	Feet
Wire Gauge for balance of circuit	14	
Max. Output Current	1.0	amps
Total Circuit Current	0.423	amps

Circuit is within limits			
Device	Distance previous device	Voltage at source	Drop from source
Device 1	0.066	20.34	0.06
Device 2	0.082	20.29	0.11
Device 3	0.212	20.20	0.20
Device 4	0.079	20.19	0.21
Totals	0.423	120	

1854 FOREST AVENUE
PORTLAND, ME 04103

FIRE ALARM PLAN

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REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	2/23/2012
1	REVISED PER CLIENT MARK UP	10/2/2014

DATE: 2/22/2012

SCALE: 1/8" = 1'-0"

DRWN: JPB UNICAD JOB #12058

CHECKED: WAYNE B. HANS NICTE # 90486

FA-1

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