Firehouse Alerting Project Notes

Electrical Contractor Scope of Work:
1. Provide permit if needed
2. Provide wire
3. Provide wire runs per NFPA 70 code
4. All wire runs to be clearly tagged & labeled
5. Provide all wiring materials (hangars, conduit, surface mold,wire ties, boxes, etc...)
6. Provide high voltage electrical relay connections if needed
7. Provide other high voltage connections if needed
8. Provide electrical power where needed (dedicated/undedicated)
9. Provide complete system installation (including head end equipment)
10. Provide as-built drawings after installation
11. Provide 1 year of warranty on labor
12. Provide an on-site representative when final connections are made

APS Scope of Work:
1. Provide shop drawings of field devices
2. Provide system components
3. Provide technical support to electrical contractor: 410-239-4644
4. Provide all programming and calibrations
5. Provide end user training
6. Provide 1 year of system warranty – Elect. Cont. may assist APS for payment to make repairs/replacements as needed

Wire Specifications:

Honeywell:

Non-Plenum

Product Number	Connectors	Color	Length
11251009	16/2 STR	Gray	1000'
11261009	16/4 STR	Gray	1000'
12145509	18/2 STR OAS	Gray	500'
11201009	18/6 STR	Gray	1000'
63602102	CAT6	Yellow	1000'
53921001	CAT6 OAS	White	1000'

Plenum

Product Number	Connectors	Color	Length
31211112	16/2 STR	White	1000'
31225512	16/4 STR	White	500'
32145512	18/2 STR OAS	Gray	500'
31165512	18/6 STR	Gray	500'
63611102	CAT6	Yellow	1000'
53921001	CAT6 OAS	White	1000'

Speaker Information:

Speaker Type	Common Wire Color	70V Wire Color	Wattage
8" Round CSS8008 Ceiling Speaker	Black	Brown	2.5
Exterior Loudspeaker		Switch Position 4	7.5
SM4T Bathroom Speaker		Rotary Switch w/ Jumper set to 70V	1.0
MB8TSL Metal Wall Mount Speaker	Black	Green	2.0
Soundsphere Speaker	Black	Purple	7.5

LED Speaker Type	Common Audio	70V Audio	LED Common Wire	LED Power
8" Round CSS8008 Ceiling Speaker	Black	Brown	Black	Red

Wire Length to leave in boxes for device connection: 16"

Wire Terminations:
CAT6 Cables = RJ45 Class B connections

Mounting heights: All are A.F.F. to bottom of the box
LCDs, LEDs, and power outlets - 60"
Apparatus Bay LCDs & power outlets - 95"
Volume Controls, Alert Selectors, Resets, & Who's In Reader - 48"
APS IP alerting controller – Dimensions 18" high, 15" wide, 4½" deep - 48 inches A.F.F.
Bogen #MB8STL wall mount speaker 11 5/8" X 11 5/8" - 78 inches A.F.F. to bottom of speaker
Exterior Speaker shall be hung under soffit where possible
Apparatus bay speakers to be hung 16' A.F.F.
Gas disconnect – located at the solenoid

Device Wire Size
All speakers (except LED speakers), and LED Clusters =16/2 STR
Reset Buttons, Doorbells = 18/2 STR OAS
LED Speakers, Volume Controls = 16/4 STR
Stove Resets = 18/2 STR OAS & 16/2 STR
Gas Shutoffs and Stove Shutoffs = 16/2 STR
Stacklights, and Multi-Color Lights = 18/6 STR
Toggle Alert Selectors = 16/4 STR or 16/2 STR
Momentary Alert Selectors = 18/2 STR OAS, one wire per button on the gang plate
CAD LCD Displays, and Scrolling LEDs = Cat6 (not to exceed 300')
RIB Relays (Lighting) = 16/2 STR

Zones:
Devices will be zoned as required by the customer and shown on this drawing.

Required boxes:

35w volume control – Double gang 3" deep box
10w volume control – Single gang 3" deep box
Reset button – Single gang 3" deep box
Alert selector – Single gang 3" deep box
Stove reset – Single gang 3" deep box
Doorbells- Single gang 3" deep box
Who's In Remote Reader - Double gang 3" deep box

Radio Connections:

Fire department to provide an antenna and line level output for fire station audio.

CAT6 Network Cable:

Each CAT6 network cable must be homerun from PoE switch to each alerting display.
Maximum length for CAT6 network cable is 100 meters.

Speakers:
Speakers provided by APS are 70V commercial speakers only. 8-ohm speakers can not be used for proper operation of the system.

Devices and Equipment Provided by Others:

All existing or new devices and equipment provided by others must be approved, in writing, by APS prior to being connected to any APS alerting system. APS will not support or warranty devices or equipment provided by others.

CONTROLLER WIRING

INPUTS – SHIELDED WIRE ONLY

I1 = RF FIRE
I2 = RF EMS
I3 = NOT USED
I4 = NOT USED
I5 = NOT USED
I6 = NOT USED
I7 = NOT USED
I8 = NOT USED
I9 = NOT USED
I10 = NOT USED
I11 = NOT USED
I12 = NOT USED
I13 = NOT USED
I14 = NOT USED
I15 = AC SUPERVISORY
I16 = BATTERY SUPERVISORY

OUTPUTS

O1 = NOT USED
O2 = NOT USED
O3 = NOT USED
O4 = NOT USED
O5 = NOT USED
O6 = NOT USED
O7 = NOT USED
O8 = NOT USED
O9 = NOT USED
O10 = NOT USED
O11 = NOT USED
O12 = NOT USED
O13 = NOT USED
O14 = Dry Contact
O15 = SUPERVISORY RELAY
O16 = STOVE DISCONNECT
O17 = STOVE DISCONNECT LAMP

WIRELESS INPUTS

INPUTS

W1 = NOT USED
W2 = NOT USED
W3 = NOT USED
W4 = NOT USED
W5 = NOT USED
W6 = NOT USED

APS Firehouse Alerting
Fire Station Alerting System Solutions
RF and Network Alerting
(410) 239-4644 - FAX (410) 374-8870
115 Airport Drive, Suite 170
Westminster, MD 21157
www.firehousealerting.com

ALERTING DEVICE FUNCTIONALITY AND SYSTEM OPERATIONS

- **Two-Tone Alerting**
- A 2-Tone decoder is used as one method to alert the station. When implemented with CAD alerting, the 2-Tone decoder is used for alerting redundancy.
- Customer must supply a fire department radio with line level audio output, and external antenna.

CAD Alerting (When Provided)
- Data received from the customer's CAD system can be used to alert the station.
- CAD alerting based on Unit ID, Incident Type, and Box Area can be configured.
- Data can be in the form of standard file formats such as XML, JSON, standard print data, or SMTP.
- A persistent, direct CAD interface can be implemented if required by the customer.

Network Requirements
- Two local static IP addresses, and one external static IP address must be provided with proper application port configurations.
- The external IP provides APS access to the Alerting Controller to provide customer support, configuration changes, and software updates.
- Customer network security requirements can be coordinated through APS.

Station Zoning
- Stations are typically zoned by functional areas such as: apparatus bays, bunkrooms, living, office, and training areas.
- Zones will be designed according to customer requirements.
- Alerting and lighting can be controlled individually within each Zone.

Ramped Audio
- APS uses ramped audio to provide the initial station alert to provide a heart-healthy method of alerting.
- Custom customer audio files can be used.

Volume Controls
- APS uses commercial volume controls with priority functionality. When the Alerting Controller is activated, individual volume control settings will be bypassed, and ramped alert audio will be delivered up to the maximum volume.

Bunkroom and Egress Lighting
- APS LED Speaker Lights, and APS LED Cluster Lights, provide red, ramped, low-level lighting in bunkroom areas and egress corridors.
- LED lighting will ramp over a five-second period and will provide low-level, heart-healthy lighting to allow personnel time to adjust to normal lighting levels during the initial alerting process.
- Alternative colors are available.

Stove Disconnect
- Electric and gas cooking equipment can be disconnected when a station alert is received per customer requirements.
- Gas stoves with pilot lights can NOT be connected to a stove disconnect circuit.
- A 120V gas disconnect valve must be installed to disconnect the gas service. APS must be contacted to assure the proper type of gas valve is installed.
- Electrician will be responsible for installing the required electrical circuits. APS will provide RIB style relays to connect to the disconnect circuit.

Manual Alert Button
- One or two-button manual alerts provide a means to internally alert station personnel in circumstances where an emergency is reported over the phone, or in-person at the station.
- Buttons can be strategically mounted at any location within the station.
- Custom audio can be assigned to each button.

Alerting Displays
- Commercial alerting displays are strategically located throughout the stations. 43-inch displays are normally located in administrative or living areas; 55-inch displays are normally located in apparatus bays.
- Alerting Displays show non-emergency, situational awareness information while in non-emergency mode. In emergency mode, alerting displays show incident information to include: incident type, units due, incident address, box or map area, and CAD comments. A route map or location map is displayed.
- GIS layers can be imported into the map.

Reset Button
- Reset buttons are located throughout the station and are used to reset the station alert audio and lighting within a zone or throughout the station.
- Station audio and lighting will automatically reset after a user-selectable time if a reset button is not pressed or installed.

Speaker Disconnect Switch
- A speaker disconnect switch will disconnect the audio to a particular room, area, or zone and acts as a "do not disturb" function. They are typically installed in conference or training rooms.

User Interface
- A browser-based user interface is provided on all APS systems. The interface allows the customer and APS technical staff to access the system, troubleshoot, make configuration changes, and test devices and operation of the system.

Multi-Color Lights
- Four-lens LED multi-color lights are installed throughout the station. Multi-color lights provide visual notification for unit or incident type alerting. Lights are activated wirelessly.

Alert Selector Buttons
- Alert Selectors are used in individual bunkrooms and enable personnel the ability to select which units or incident groups get alerted.
- Alert buttons allow personnel assigned to a particular unit to not be disturbed unless required to respond.

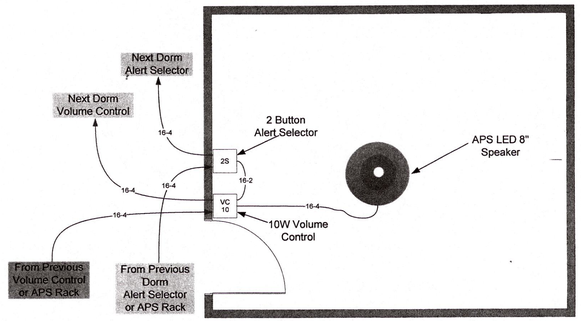
LED Stacklights
- LED Stacklights are typically used in apparatus bay areas to provide visual notifications for units alerted.
- LED Stacklights can have up to four lens'. Typical colors include, red, blue, green, and amber.

Fitness Emergency Button
- Installed in the gym or fitness room and is used to internally alert station personnel of a medical emergency involving fire/rescue members.
- The emergency button will activate alert lighting, bypass volume control settings, and sound a custom alert audio. The audio will loop until acknowledged by pressing any station reset button.

Relay Controls and Inputs
- The APS alerting controller provides 12-volt, 16 inputs, and 16 outputs to control external functions.
- No external, controls have been provided or required by this customer per the government-provided design drawing. Control of apparatus bay doors, internal lighting, stove disconnect circuits, etc. can be added.

Doorbells
- Doorbells are located as shown on the design drawing.
- When pressed, doorbells will sound a custom audio tone and recorded voice indicated which doorbell was activated.
- The activated doorbell location will be shown on the station alerting displays.
- Video from compatible cameras at the doorbell location can be shown on the station alerting displays.

Symbol	Name	Mounting	Wire	Additional Notes / Comments
APS	APS Alerting Controller	Rack or Wall Mounted	N/A	
	APS Doorbell	Flush or surface-mounted in single-gang box	18/2 OAS	Each doorbell is home run. Connect each input to Alerting Controller per FSA-1.
1A 2A	One or Two-Button Manual Alert	Flush or surface mounted in single-gang box	18/2 OAS	For a two-button manual alert, one 18/2 OAS wire is required for each button. Connect each to input in Alerting Controller per FSA-1.
3S	3-Button Alert Selector	Mounted in single-gang box	16/4	See device wiring supplementary for wiring details. Custom alert selector panels are available upon request.
Switch	APS Switch	Rack-mounted or on shelf in rack depending upon type of switch required	N/A	Standard switch used by APS is a 16-port rack-mounted switch
ME	Medical Emer Button	Flush or surface-mounted in single-gang box	18/2 OAS	An APS Reset Button must be pressed to reset Emergency Button audio.
	Stove Reset/ Disconnect	Stove Reset is flush or surface-mounted in single-gang box	18/2 OAS, 16/2	Stove disconnect is a 120V gas valve. Gas valve provided and installed by others. Disconnect can not be used on stove with pilot lights. Electrical circuit to stove must disconnect with gas.
SD	Speaker/Audio Disconnect	Flush or surface-mounted in single-gang box	16/2	
EP	Emergency Phone	Mounted per manufacturer instructions	18/2 OAS	Emergency phone must provide a 12V contact closure to APS Alerting Controller
S	Recessed Ceiling Speaker	Mounted in drop ceiling using a tile-bridge. Backcans provided if required	16/2	8-inch, 70V, 2.5 Watts
LED	APS LED Speaker	Mounted in drop ceiling using a tile-bridge. Backcans provided if required.	16/4	8-inch, 70V, 2.5 Watts
BS	Moisture Resistant Bathroom Speaker	Surface mounted	16/2	1.0 Watt
WS WV BX	Metal, Wall Speaker	Surface mounted	16/2	BX – Metal square box speaker. WS/WV – Metal slant wall speaker. WV has built-in volume control. 2.0 Watts - WV has built-in volume control
SS	Omni-Direction Speaker	Surface mounted, or hung 16ft. a.f.f. depending upon installation	16/2	7.5 Watts
R B	Strobe Light	Surface mounted	16/2	Available in multiple colors per customer requirements.
	APS LED Cluster Light	Light is mounted in a standard 4-inch round plate	16/2	Will illuminate an approx 10 x 10 square foot area
M C L	Multi-Color LED Wireless Lighthead	Ceiling or wall mounted in a single-gang box	16/2	Lights are wired in series for power. Lights are activated wireless through transmitter located in rack.
4 S L	Multi-Color LED Stacklight	Surface mounted horizontally, or vertically using a 90-degree elbow	18/6	Lights are wired in series. Only one, 18/6 wire is required.
ES	External Speaker	Surface mounted under soffit	16/2	7.5 Watts
	APS RIB Style Relay	Mounted in standard 1900 box	16/2	Relays are used to control stove disconnect, and other 120V devices.
	APS Trouble Strobe	Ceiling or Wall Mounted	16/2	Connected to Output 15 of Alerting Controller
CAD LED 4"	Commercial Alerting Display	Wall mounted using a full-tilt or full-motion bracket. See detail pages for specified mounting bracket. Mounting height to be 78-inches a.f.f. in admin areas, and 96-inches min a.f.f. in apparatus bays.	CAT 6	A 120V, duplex outlet is required at each display location. A RJ-45 network jack is required at each display location. Alerting displays can be wired in series or home run. See wiring detail pages wiring method.
	APS Reset Button	Wall-mounted at 48-inches a.f.f.	18/2 OAS	
VC 10 VC 35	10W/35W Volume Controls	Wall-mounted at 48-inches a.f.f.	16/4	12V volume controls with priority bypass. 16/4 wire from APS alerting controller to primary volume control within each identified zone. Volume controls in each zone can be wired in series using 16/4 wire.



TYPICAL BUNK ROOM WIRING
NTS

FIRE STATION ALERTING SYSTEM DETAILS

SEAL: STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 9689 WAYNE MEWLEY 7-31-23

Miller Newell Engineers Inc.
Miller - Newell
510 THIRD STREET
NEWPORT, AR 72112
PHONE: (870) 523-6531
FAX: (870) 523-6533
EMAIL: MILNEWENGR@AOL.COM

PROPOSED:
TRUMANN FIRE STATION
801 WEST MAIN ST, TRUMANN, AR 72472

PROJECT NO.: 2023-02
DRAWN BY: DD
CHECKED BY: WM
DATE: 07-31-2023
REVISIONS:

SHEET NO.:
E109