SECTION 27 41 25
BACK OF HOUSE SPACES: AUDIOVISUAL SYSTEMS

PART 1 GENERAL

1.1 OPERATIONAL SUMMARY

A. This section of the specification describes the functional details of the audiovisual systems to be furnished and installed in the back-of-house spaces that include:
   1. Dressing Rooms 14, and 16, and adjacent connecting corridor to N101G.
   2. Corridor N101G.
   3. Drama Classroom 024A and B.
   4. South Music Corridor.

B. All systems shall be dedicated and permanently installed as described above and, in the following, functional' descriptions.

1.2 RELATED WORK

A. Installation of all floor boxes and/or poke thru devices (excluding any plates and connectors to be provided by the contractor.

B. Telephone and telecommunications jacks and special telecom outlets not related directly to AV, (LAN/WAN, Wireless access points (WAPs), PTSN/POTS, etc.).

C. Provide in accordance with Section 27 41 00 – Audiovisual Systems.

1.3 SYSTEM INTERCONNECTION & FUNCTIONAL DESCRIPTION

A. Functional intent

   1. The ceiling speakers shall provide overflow audio from the Theater, as directed through the control system, with volume set at a local rotary encoder or autotransformer control, or from the main touchpanel control in the case of general corridor speakers.

   2. Wall mounted flat-panel display will provide a mix of the following content:

      a) Situational awareness video from PTZ streaming camera in the Theater House.

      b) Control of display power on/off shall be from the Theater control system and related touchpanel controls.

   3. New wall-mounted two-channel party-line production intercom speaker/mic panels.

   4. In the Drama Classroom, Ethercon/CAT6A ties lines shall be provided to the AER-01 equipment rack to allow patching of remote production elements from the Theater to the Drama Classroom, which may facilitate offstage musical performance, or visual elements.

B. Display Systems

   1. Provide and install wall-mounted flat panel displays, as per the drawings and Appendix 'A'.

      a) Provide integration of the display to the AV network, to allow control of the display through the Q-Sys control platform, using a page within the theater control panels.

   2. Provide and install wall-mounted flat panel display mounts over the LegrandAV Chief PAC-series in-wall enclosures as per the drawings (PAC-series boxes and infrastructure to be provided and installed under separate JOC by the District).

C. Video Systems

      a) Provide and install streaming decoders behind each display, as per the drawings and Appendix 'A'. Provide mounting accessories to secure within PAC-series backbox.

D. Audio Systems

1. Provide and integrate recessed ceiling mounted 70V distributed loudspeakers as per the drawings and Appendix 'A". Provide mounting hardware to mount in existing ceiling type, including seismic and safety cables.
    a) Provide and integrate wall-mounted autotransformer rotary volume controls as per the drawings and Appendix 'A' to allow setting of levels in each room from a single zone amplifier circuit.
2. Provide and integrate wall-mounted 2-channel production intercom speaker/mic panels as per the drawings and Appendix 'A'.
3. Provide and integrate custom wall panel in the Drama Classroom for tie-lines to the Theater as per the drawings and Appendix 'A', for use with OFE/Future audio and video transport systems, as needed.

E. Control Systems
1. Provide integration of display devices with the specified 3rd party control network, to allow power state switching if displays, as well as resetting default display status when switched on – nulling any previous user settings for input, volume/muting, and video settings.
2. Provide software emulation of the control panel GUI that may be run on an OFE laptop or Windows tablet device. This emulation may take place using a web-browser interface to direct to the processor host, or an executable file that provides the GUI and interfacing to the processor.

F. User Interface
1. Provide programming of control interfaces as directed by Owner's Representative and Consultant. Programming shall provide simple user interface to select local video and audio sources and adjust room and area volume to within predetermined limit.
2. Provide and program software management/monitoring interface for Owner's technical staff, which will allow advanced system control and monitoring functions using a PC connected to the control system LAN.
3. Provide control panel operations that are consistent from page to page.
4. Provide feedback that indicates the current equipment and/or system status where possible.

G. The Contractor shall provide all interconnection cable, connectors, terminal strips, wireways, flexible conduit, etc., to facilitate the audiovisual systems as detailed within these specifications and drawings.

H. Conduit and power systems are detailed in the Electrical Engineer's drawings.

I. Miscellaneous
1. Provide and install all hardware, cabling, connectors, faceplates, terminators, adapters, audio combiners, balanced-unbalanced audio converters, wall boxes, etc. required to ensure installation of a fully functional audiovisual system as depicted in the attached AV Systems drawings.

1.4 EQUIPMENT LAYOUT

A. The equipment in this area shall be as detailed on drawings.

B. All equipment shall be installed with rack ears/mounts or custom rack-mounts/face-plates, using security screws. There shall not be any shelf-mounted components in the audiovisual racks.

1.5 OWNER FURNISHED EQUIPMENT

A. All room furniture will be furnished by the Owner (Unless otherwise noted in this specification).

B. All Windows PC computers will be furnished by the Owner, along with wired and wireless keyboard/mice/trackpads and monitors. All software and licensing for PC computers will be OFE. Coordinate I/O connectivity requirements with Owner IT staff and provide any required adaptors, baluns or interfaces.

C. Unless noted otherwise in Appendix 'A', All IP Network switches will be furnished by the Owner. Coordinate switch allocation with owner, including dedicated switches for AV-network-only applications.

1.6 RELATED WORK SPECIFIED ELSEWHERE

A. The Contractor is to coordinate with the other Trades as necessary to insure compatibility.
   1. Installation of all floor boxes and/or poke thru devices (excluding any plates and connectors to be provided by the contractor.
   2. Telephone and telecommunications jacks and special telecom outlets not related directly to AV, (LAN/WAN, Wireless access points (WAPs), PTSN/POTS, etc.).

PART 2 PRODUCTS

2.1 APPROVED MANUFACTURERS

A. Included with Contract Documentation
   1. Provide in accordance with Appendix 'A' – 27 41 25.

B. Pre-Approved Alternate Manufacturers
   1. Provide in accordance with Section 27 41 00.

2.2 AUDIOVISUAL SYSTEMS HARDWARE & COMPONENTS

A. Provide in accordance with Appendix 'A' – 27 41 25, which includes the following:
   1. Equipment description, including parameters and options required.
   2. Manufacturer to be base-bid.
   3. Model number of equipment or series to be bid.
   4. Quantity of equipment, or reference to drawing quantities.
   5. Designation of any Owner-Furnished (OFE), Existing to Reuse (ETR), Not-in-Contract (NIC) or Future equipment.
   6. Custom Quotation numbers, where applicable, to be bid as a pre-approved dealer or representative of the manufacturer quoted.

PART 3 EXECUTION

3.1 PROVIDE IN ACCORDANCE WITH SECTION 27 41 00 – AUDIOVISUAL SYSTEMS: PART 3 - EXECUTION.

APPENDIX A – EQUIPMENT LISTS

See the attached Appendix for the equipment lists for the audiovisual systems. These lists are provided for the bidding process.

END OF SECTION 27 41 25

Appendix A

27 41 25 - BACK OF HOUSE SPACES: AUDIOVISUAL SYSTEMS

Item #		Product	Manuf.	Model #	Unit	Qty	Ext.
CONTROL							
1	VC-01	Autotransformer rotary volume control - 70-Volt, 35 Watt rated, with 3 dB steps and 10 index positions, in stainless steel panel - single-gang	Atlas-IED	AT35	_____	3	_____
2	VC-02	Push-button rotary encoder volume control panel. With programmable OLED menu screen. Ethernet-based control for Q-SYS. (color selection by owner, submital process)	Q-SYS (Attero-Tech)	Axon C1	_____	1	_____
DISPLAY & VIDEO							
2	FPD-01	55" Wall-mounted Flat-Panel-Display: UHD, 350 nit panel with HDMI inputs, Wi-Fi screen casting, RS-232 & Network/IP control	Samsung	QB55C-N	_____	4	_____
3	FPD-01	Wall-mount for 55" FPD, with 5-axis micro-adjustment, compatible with PAC-series wall-enclosures	Chief/LegrandAV	LSM1U	_____	4	_____
4	FPD-02	50" Wall-mounted Flat-Panel-Display: UHD, 350 nit panel with HDMI inputs, Wi-Fi screen casting, RS-232 & Network/IP control		QB50C	_____	1	_____
5	FPD-02	Wall-mount for 50" FPD, with 5-axis micro-adjustment, compatible with PAC-series wall-enclosures	Chief/LegrandAV	LSM1U	_____	1	_____
6	IPD-01	AVoIP protocol decoder, 1G bandwidth; Receives and scales 4K/60 @ 4:4:4 video, audio, Ethernet, and USB over 1 Gbps IP networks. Rack mountable	LibertyAV	IPEX5102	_____	5	_____
AUDIO							
7	S-03A	Pendant-mounted 2-way 6.5" Ceiling Speaker w/70V, 60W transformer	Biamp	Desono DP6B	_____	QTY. PER PLANS	_____
8	S-03B	Recessed 2-way 6.5" Ceiling Speaker w/70V, 60W transformer	Biamp	Desono CM60DTD	_____	QTY. PER PLANS	_____
9	S-04	Recessed 2-way 6.5" Ceiling Speaker w/70V, 60W transformer	Biamp	Desono CM60DTD	_____	QTY. PER PLANS	_____
MISCELLANEOUS HARDWARE							
10	WP-08	Custom 2-Gang Wall Panel for AV I/O - Per Detail Drawings	Pro-Co, RCI, Panelcrafters, etc…	Custom [Refer to Drawings]	_____	1	_____
11		Miscellaneous hardware, switches, relays panels, connectors, cabling, lamps, terminal blocks, etc., necessary to insure a complete and operating system.			_____	LOT	_____