SECTION 275116 - PUBLIC ADDRESS SYSTEM

This section should be used only as a guide; designers using this specification should verify whether the equipment listed in this specification is still available.

This section was written for facility-wide public address system for use on correction department projects.

1. GENERAL
	* + 1. RELATED WORK SPECIFIED ELSEWHERE
				1. Main Security Console: Section 281601.
				2. Primary /Satellite Intercom System: Section 275113.
				3. Inmate Radio and CATV System: Section 274172.

Modify description to suit.

* + - 1. SYSTEM DESCRIPTION
				1. The system shall operate as a facility-wide zoned public address system.
				2. A person places a call from the main security console in control room (Building No. 1) by selecting the zone or zones in which a message is to be given, then presses a push-to-talk button on the microphone which activates the speakers in the selected zone or zones.

All zones may be paged simultaneously by selecting the all-call mode.

* + - * 1. A person places a call from the superintendent's office by selecting an all-call or zone-select mode (2 position switch), then presses a push-to-talk button on the microphone to activate the speakers.

In the all-call mode all zones are paged simultaneously.

In the zone-select mode, zones are paged which are selected on the zone select panel in the control room.

* + - * 1. In buildings equipped with local amplifiers, a person may place a call within a local building system by pressing a push-to-talk button on a plug-in microphone which activates the local building system speakers.

Housing Buildings (Buildings No. 4 and 5):

Second and Third Floors: A person in the control room on each of these floors can page through speakers on their respective floors only.

First Floor: A person in the first floor control room may, by means of a 2 position selector switch, page through the first floor speakers (local mode) or page through all speakers on all floors within the building, outside speakers on the building, and all radio channels (Inmate Radio System - Section 274172) within the building (building all-call mode).

Calls placed from the first floor control room in the "building all-call" mode have priority over calls placed from the second and third floors.

Health Building (Building No. 11) and Special Housing Unit (Building No. 16): Calls placed on the systems in these buildings are also simultaneously automatically placed on all radio channels within the building.

* + - * 1. Calls placed from the main security console in control room (Building No. 1) or superintendent's office have priority over calls placed from within local building systems. Pressing the push-to-talk button on the control room or superintendent's microphone causes local building messages (and tuner programming in Bldgs. No. 2 and 3) to be silenced while message is being given. Releasing button self-restores building systems for local use.

Calls placed from superintendent's office have priority over calls placed from control room.

Calls placed to a building equipped with an inmate radio system are simultaneously placed on all radio channels within the building.

Calls cannot be placed from the main security console in the control room or the superintendent's office over the local tear dust control booth public address systems.

* + - * 1. Relays in the housing building systems allow the public address system speakers in the galleries of each floor to be normally connected to the Satellite Intercom System (Section 275112) on that floor for monitoring and communication, except when calls are being placed on the public address system.

When a call is placed on the public address system, the gallery speakers are automatically disconnected from the intercom system and connected to the public address system.

* + - 1. SUBMITTALS
				1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				2. Manufacturer’s installation instructions shall be provided along with product data.
				3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
				4. Waiver of Submittals: The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this Section.
				5. Submittals Package: Submit the shop drawings, product data, and quality control submittals specified below at the same time as a package.
				6. Shop Drawings:

Composite wiring and/or schematic diagrams of the complete system as proposed to be installed (standard diagrams will not be accepted).

* + - * 1. Product Data:

Catalog sheets, specifications and installation instructions.

Bill of materials.

Detailed description of system operation (format similar to SYSTEM DESCRIPTION).

Name, address and telephone number of nearest fully equipped service organization.

* + - * 1. Quality Control Submittals:

Company Field Advisor Data: Include:

Name, business address and telephone number of Company Field Advisor secured for the required services.

Certified statement from the Company listing the qualifications of the Company Field Advisor.

Services and each product for which authorization is given by the Company, listed specifically for this project.

* + - * 1. Contract Closeout Submittals:

System acceptance test report.

Certificate: Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.

Operation and Maintenance Data: Deliver 2 copies, covering the installed products, to the Director's Representative. Include:

Operation and maintenance data for each product.

Complete point to point wiring diagrams of entire system as installed. Number all conductors and show all terminations and splices. (Numbers shall correspond to numbered tags installed on each conductor.)

Name, address, and telephone number of nearest fully equipped service organization.

* + - 1. QUALITY ASSURANCE
				1. Equipment Qualifications For Products Other Than Those Specified:

At the time of submission provide written notice to the Director of the intent to propose an “or equal” for products other than those specified. Make the “or equal” submission in a timely manner to allow the Director sufficient time to review the proposed product, perform inspections and witness test demonstrations.

If products other than those specified are proposed for use furnish the name, address, and telephone numbers of at least 5 comparable installations that can prove the proposed products have performed satisfactorily for 3 years. Certify in writing that the owners of the 5 comparable installations will allow inspection of their installation by the Director's Representative and the Company Field Advisor.

Make arrangements with the owners of 2 installations (selected by the Director) for inspection of the installations by the Director's Representative. Also obtain the services of the Company Field Advisor for the proposed products to be present. Notify the Director a minimum of 3 weeks prior to the availability of the installations for the inspection, and provide at least one alternative date for each inspection.

Only references from the actual owner or owner’s representative (Security Supervisor, Maintenance Supervisor, etc.) will be accepted. References from dealers, system installers or others, who are not the actual owners of the proposed products, are not acceptable.

Verify the accuracy of all references submitted prior to submission and certify in writing that the accuracy of the information has been confirmed.

The product manufacturer shall have test facilities available that can demonstrate that the proposed products meet the contract requirements.

Make arrangements with the test facility for the Director's Representative to witness test demonstrations. Also obtain the services of the Company Field Advisor for the proposed product to be present at the test facility. Notify the Director a minimum of 3 weeks prior to the availability of the test facility, and provide at least one alternative date for the testing.

Provide written certification from the manufacturer that the proposed products are compatible for use with all other equipment proposed for use for this system and meet all contract requirements.

* + - * 1. Test Facility: The Company producing the system shall have test facilities available which can demonstrate that the proposed system meets contract requirements.

Edit number of hours to suit.

* + - * 1. Company Field Advisor: Secure the services of a Company Field Advisor for a minimum of 40 working hours for the following:

Render advice regarding installation and final adjustment of the system.

Render advice regarding interconnections between the Public Address System (Section 275116), Primary /Satellite Intercom System (Section 275113) and Inmate Radio system (Section 274172).

Witness final system test and then certify with an affidavit that the system is installed in accordance with the contract documents and is operating properly.

Train facility personnel on the operation and maintenance of the system (minimum of two 1 hour sessions).

Explain available service programs to facility supervisory personnel for their consideration.

* + - 1. MAINTENANCE
				1. Service Availability: A fully equipped service organization capable of guaranteeing response time within 24 hours to service calls shall be available to service the completed Work.
1. PRODUCTS
	* + 1. PUBLIC ADDRESS SYSTEM
				1. Head-End Equipment:

Microphones: Dukane Corp.'s 7A766.

Preamps: Dukane Corp.'s 1A881.

Master Distribution Amplifier: Dukane Corp.'s 1A833.

Power Supplies: Dukane Corp.'s 17A355.

Relays: Soundolier Inc.'s RLM-24-5.

Relay Chassis: Soundolier Inc.'s RPM series relay pak modules.

Zone Select Panel:

Required number of toggle switches, with indicator lamps. Switches indicated as spares shall be complete with relays, wiring and accessories for connection to future zones, without requiring additions or modifications to equipment.

Switch contacts rated 5A.

Housing to suit.

Edit subparagraph above or below to suit.

Suitable for rack mounting in main security console.

Switches permanently labeled.

Remote power-failure alarm (monitor power supplies in central equipment for failure), Dukane Corp.'s 9A1488.

Equipment Cabinet: Soundolier Inc.'s 300-26.

* + - * 1. Local Building Amplifiers: Dukane Corp.'s 1A929A and 1A931A.

Each building amplifier shall be furnished with factory-installed standard modification to effect take over and priority, and shall provide:

An impedance-matching, level-controlled transformer isolation circuit to match the 70 volt loudspeaker-level line to the requirements of the building amplifier. This network shall include an adjustable level control mounted inside the cabinet and inaccessible to operating personnel.

A relay, operated by an external control voltage, to bridge the electrical on-off switch so as to provide remote application of power to the amplifier.

A second relay, operated by the same external control voltage which disconnects the mixer portion of the equipment from the power amplifier portion (muting) and substitutes the feed from the impedance-matching network (priority takeover).

One-Octave Filter Kits (one for each amplifier): Dukane Corp.'s 438-406.

Use subparagraph below when amplifier is being installed in a secure area.

Backboxes: Dukane Corp.'s 8A360 (flush) or 8A350 (surface) to suit type of mounting.

Use subparagraph below in all other cases.

Backboxes:

Flush: Dukane Corp.'s 8A360 with 110-2770 flush mounted cover with locking access door.

Surface: Dukane Corp.'s 8A350 with 110-2911 surface mounted cover with locking access door.

Edit number of microphones to suit.

Furnish 24 plug-in type microphones for use with local building systems. Store at site as directed.

* + - * 1. Rec Yard Amplifier:

Amplifier: Dukane Corp.'s 1A833.

Preamps: Dukane Corp.'s 1A881.

Impedance matching network and relays as described for local buildings amplifiers for priority take over and to bridge power on-off switch.

Enclosure Cabinet: As manufactured by Soundolier, sized as required for equipment, with brackets for wall mounting.

* + - * 1. Tuner & Cabinet for Visitor's Bldg.: Dukane Corp.'s 10A181, or Grommes-Precision Model T-112 in surface cabinet.

Antenna for Tuner: Blonde Tongue Y-FM-2/MDX-75F/MH-1/MAST/AM Antenna.

* + - * 1. Relay Protection: Bridge every relay coil in the system with a 1 amp, 200 peak-inverse-voltage field-collapse-absorbing diode.
				2. Equipment Grounding: Properly ground all equipment with a separate conductor of at least 10 AWG and not merely via the power cord ground.
				3. Speakers:

Type H Horns: Dukane Corp.'s 5A30.

Type W Horns: Dukane Corp.'s 5A121 w/5A408 drivers.

If ceiling speakers are installed in fire rated ceilings, special consideration must be given to the speaker installation, enabling them to meet the fire rating.

Ceiling Speakers: Dukane Corp.'s 5A606 (include 70V transformer):

Flush Mounted: Soundolier Inc.'s VP-161-R-8 vandal resistant baffles and 193-8-5 backboxes.

Surface Mounted: Soundolier Inc.'s VP410-S vandal resistant baffle.

Wall Speakers: Dukane Corp.'s 5A606 (include 70V Transformer):

Flush Mounted: Soundolier Inc.'s VP-161-R-8 vandal resistant baffle and 193-8-5 backboxes.

* + - 1. WIRING
				1. Conductors: Conductor number, size and type as recommended by the Company producing the system but not less than the following:

Speaker Wiring Within Building: 2 #16 AWG twisted and jacketed.

Wiring From Head End Equipment to Each Area Listed In Schedule: 3 #14 AWG shielded and jacketed.

Microphone Jacks to Amplifiers: 3 #14 AWG shielded and jacketed.

* + - * 1. Wiring installed in underground raceways shall be UL listed suitable for use underground.
			1. INTERCONNECTION CABINETS
				1. Lockable, vandal resistant, surface mounted cabinets constructed of 14 gage steel, size as recommended by the Company producing the system. Equip cabinets with barrier type double screw terminals. Use identification strips, tags or labels to identify each conductor. Paint cabinets green and stencil "PUBLIC ADDRESS" thereon.
			2. SIGNS AND LABELS
				1. Zone Locator: Card holder with aluminum or stainless steel frame, plexiglass front and sheet aluminum card backing plate. Minimum size card 3 x 5 inches. Type on card the zone numbers and description of area encompassed by each zone.
			3. MARKERS AND NAMEPLATES
				1. Markers: Premarked self-adhesive; W.H. Brady Co.'s B940, Thomas and Betts Co.'s E-Z Code WSL self-laminating, Ideal Industries' Mylar/Cloth wire markers, or Markwick Corp.'s permanent wire markers.
				2. Nameplates: Precision engrave letters and numbers with uniform margins, character size minimum 3/16 inch high.

Phenolic: Two color laminated engraver's stock, 1/16 inch minimum thickness, machine engraved to expose inner core color (white).

Aluminum: Standard aluminum alloy plate stock, minimum .032 inches thick, engraved areas enamel filled or background enameled with natural aluminum engraved characters.

Materials for Outdoor Applications: As recommended by nameplate manufacturer to suit environmental conditions.

* + - 1. SILICONE AND ACRYLIC SPRAY
				1. Silicone: Clear, as manufactured by Dow-Corning Corp., or General Electric Co.
				2. Acrylic Spray: Clear, as manufactured by Krylon/Consumers Products Div. Borden Inc.
			2. ACCESSORIES
				1. Include accessories required for a complete and operable system.
1. EXECUTION
	* + 1. INSTALLATION
				1. Install system in accordance with the Company's printed instructions unless otherwise indicated.
				2. Speakers indicated to be treated with silicone and acrylic spray:

Rub entire cone with silicone.

Let dry.

Coat speaker cone with acrylic spray.

* + - * 1. Use markers to identify conductors at terminal strips, cabinet and pullboxes (designations shall correspond with point to point wiring diagrams).
				2. Zone Locator: Install adjacent to microphones in superintendent's office and control room.
				3. Nameplates:

Head End Equipment: Identify each item.

Zone Select Panel: Identify each switch by area paged.

Interconnection Cabinets: Indicate building number and floor number.

* + - 1. FIELD QUALITY CONTROL
				1. Preliminary System Test:

Preparation: Have the Company Field Advisor adjust the completed system and then operate it long enough to assure that it is performing properly.

Run a preliminary test for the purpose of:

Determining whether the system is in a suitable condition to conduct an acceptance test.

Checking and adjusting equipment.

Training facility personnel.

* + - * 1. System Acceptance Test:

Preparation: Notify the Director's Representative at least 3 working days prior to the test so arrangements can be made to have a Facility Representative witness the test.

Make the following tests:

Individually test each local building system and entire system from superintendent's office and control room.

Test each system function step by step as summarized under SYSTEM DESCRIPTION.

Supply all equipment necessary for system adjustment and testing.

Submit written report of test results signed by Company Field Advisor and the Director's Representative. Mount a copy of the final report in a plexiglass enclosed frame assembly adjacent to the console.

END OF SECTION 275116