



Accelerate Progress for Students

Charlotte Gensler
Executive Director

Scott Elder
Superintendent

DATE: 01/23/2023

RFP NUMBER: 23-061 NMM

RFP TITLE: Wearable Crisis Alert System

ADDENDUM NUMBER: 1

This addendum is to add Appendix B to the RFP.

If the offerer's system requires any interconnectivity to or from a Network rack, or from an area to another area within a building, installation must adhere to the APS Technology Infrastructure Standards in Appendix B.

ACKNOWLEDGE ADDENDUM WITH SUBMITTED PROPOSAL:

Addenda not signed and returned may consider the RFP non-responsive and may be rejected.

COMPANY/FIRM NAME

SIGNATURE

DATE

1.23.2023

APPENDIX B: If the offerer's system requires any interconnectivity to or from a Network rack, or from an area to another area within a building, installation must adhere to the APS Technology Infrastructure Standards in Appendix B.

APS Technology Requirements:

General Materials Standards:

All equipment shall equal or exceed the minimum requirements of BICSI, NEMA, ASME, ANSI/EIA/TIA and Underwriters Laboratories.

Any specified item of equipment or material shall be the product of one manufacturer throughout the facility. Multiple manufacturers of any one item will not be permitted, unless specifically noted otherwise and approved in writing in advance.

All material and equipment furnished shall be new and unused and free from defects. Material and equipment shall be clean and free of damage or corrosion and shall be of the best quality obtainable for the purpose intended.

This equipment must carry a minimum of a 1-year warranty and be supported by the manufacturer. All materials furnished shall bear the Underwriters Laboratory, Inc. label, provided a standard is established for the material in question.

All materials shall conform strictly to the standards and specifications put forth in this document. Unless otherwise specified, all products furnished shall be designed, built and installed in accordance with the latest and best practice of the industry, and shall conform to the standards of the BICSI, NEMA, ANSI, EIA/TIA, ICEA, IEEE, NEC and NM code, and these specifications wherever they apply.

Codes, Regulations:

All installations shall be in compliance with the requirements of the BICSI, NEC, OSHA, ANSI/EIA/TIA telecommunications standards and recommendations, and the rules, regulations and requirements of the FCC.

All installations shall comply with current National Code, federal, city, county and state laws, ordinances, regulations, and codes as applicable. The Telecommunications and VoIP Distribution Manufacturing Manual and Network Design Reference Manual (most current editions) will apply.

Except as may be modified by the governing codes and by the Contract Documents, the Contractor will comply with the applicable provisions and recommendations of these BICSI published.

All work shall be executed in accordance with the current National Code, as amended by the New Mexico State Code, local and state ordinances, and FCC regulations governing the

particular class of work involved. The contractor shall be responsible for the final execution of the work under this heading to suit these requirements. In the event of a conflict between the various codes and standards, the more stringent shall govern. Upon completion of the various parts of the work, the installation shall be tested by the constituted authorities and approved. Upon completion of the work, this contractor shall obtain and deliver to the APS final certificates of acceptance. The contractor shall hold and save the Board of Education free and harmless from liability of any kind arising from his failure to comply with codes and ordinances.

All installations shall comply with federal, city, county and state laws, ordinances, regulations, and codes as applicable. Contractors are required to own and maintain the most current edition of the NEC Code Book.

Standards:

All work and materials shall comply with the recommendations and standards as set forth in the latest edition(s) of IEEE and ANSI/EI A/TIA Telecommunication Standards. If substitute materials, equipment or systems are installed without prior approval or are installed in a manner not in conformance with the requirements of these specifications and for which the contractor has not received written approval, removal of all the unauthorized materials plus the re-installation of those indicated or specified shall be provided at no extra cost to the owner. Unless a specific date of issue or revision is cited, the documents listed below are the current issue in effect. The requirements contained become part of the contract to the extent specified herein. Except as may be modified by the governing codes and by the Contract Documents, the contractor will comply with all District and Data Communications Divisional design and installation standards.

Contractors are also required to own and maintain the most current edition of BICSI Telecommunications Distribution Methods Manual and the United States National CAD Standards.

Listing of Reference Documents:

- National Code (NEC)
- Electronics Industries Alliance/ Telecommunications Industry Association (568, 569, 606, 607, TSB40)
- Institute of and Electronics Engineers, Inc. (IEEE)
- American National Standards Institute, Inc. (ANSI)
- BICSI's Telecommunications Distribution Methods Manual (TDMM)
- BICSI's Network Design Reference Manual (NORM)
- BICSI's Wireless Design Reference Manual (WORM)
- BICSI's Customer-owned, Outside-Plant Design Manual (CO-OSP)
- National CAD Standard (NCS)

- National Manufactures Association (NEMA)
- American Society of Testing Materials (ASTM)

The Contractor shall be responsible for the receipt, safe storage, and delivery of materials and equipment to the job site. All products and materials will be shipped and stored in a manner that will protect from damage, weather and entry of debris. Damaged items will not be installed; Contractor will take immediate action to obtain replacement.

Delivery, Storage, and Handling:

Materials (except bulk materials) shall be delivered in the manufacturer's unopened container, fully identified with the manufacturer's name, trade name, type, class, grade, size and color.

Any materials required to be stored shall be suitably sheltered from the elements. Items subject to moisture damage will be stored in dry, heated space. On-site secure storage area may or may not be available. The Contractor shall not store or place materials on APS floors in excess of the floors' designed load limits.

General Installation Requirements:

The locations of after takes, poke-throughs, stub-ups, outlets, panels, equipment racks and other related products as indicated on the drawings will be understood to be approximately correct and will be subject to such revision as may be found necessary or desirable at the time of installation. Particular caution will be exercised with reference to location of equipment, blocks, outlets etc., with precise and definite locations accepted by the Owner (APS) before proceeding with the installation.

Craft personnel will be required to provide and use the proper tools in the performance of each activity. The tools must be in good working order. The Owner (APS) reserves the right to review the tool lists and tool maintenance procedure for the Contractor.

Licensing and Personnel Qualifications:

The successful Contractor and sub-Contractors employed by the awarded Contractor performing the work of any cabling must have current NM licenses for low Voltage and Electrical, and at least one journeyman licensed installer.

Contractor shall be properly licensed, under the New Mexico Construction Industries Regulations, for all aspects of work requirements. Actual work is to be performed only by workmen properly licensed and skilled in applicable trade. No one under age 18 is to be employed on any APS.

Permits, Licensing and Reimbursement of Fees:

It is the contractor's responsibility to secure in a timely manner and pay for all necessary permits required for any particular job. The exact cost only of approved job permits will be reimbursed by APS with no markup. Add to invoice as a separate and documented item. APS

does not pay for business licenses, contractor licenses, certifications, or renewals of same, memberships in professional affiliations, and similar costs of doing business, which are the contractor's obligation to secure and maintain. It is the contractor's responsibility to contact the APS Environmental Department to obtain the required Asbestos Permits prior to network installations. Contractor will pull permits from the City of Albuquerque and will also be subject to City inspections for code compliance and/or any other relevant aspect of the job. The contractor will coordinate City inspections with the appropriate APS department.

Supervision:

The work shall be performed under the direction of a qualified project manager experienced in the trade who shall be thoroughly familiar with the complete requirements and details of the work and shall normally be present on the site during the execution of the work. The cost of such a project manager will be considered as a part of the contractor's overhead and may not be billed as a separate charge.

Project Performance:

Work performed under this contract is subject to strict APS internal controls and industry standards.

Project Procedures:

The contractor is required to coordinate these projects with all applicable APS IT Departments defined as Enterprise Cabling Division (ECO), Facilities, Design & Construction (FDIC), Maintenance & Operations (M&O), in addition to Site Administrators and Site Technology Coordinators. At this point, the contractor is not to proceed without contacting ECO - Enterprise Cabling Division. Enterprise Cabling Division will provide a Designee to serve as the Point of Contact (POC) between the APS entity and the contractor. Final inspections will be made by Enterprise Cabling Division and the Technology Infrastructure Coordinator; and in coordination with Facilities, Design and Construction and/or Maintenance & Operations on new construction, renovations and modernization projects. Upon completion of a project, contractor shall promptly notify the Enterprise cabling Division and deliver As-Builts within 10 working days.

Approval for clearance of asbestos-containing materials, provision of adequate service, and coordination with other construction projects, utility spotting and similar are essential to be cleared prior to beginning any project. Asbestos removal or handling is not within the scope of this contract. Prior to the initiation of a project, contractors shall contact the M&O Environmental Hazard Department, for an Asbestos Permit. Contractors shall coordinate networking projects with M&O's Technology Infrastructure Coordinator regarding mechanical, structural and upgrades.

Work Scheduling:

All work shall be, insofar as possible, performed during normal working hours (7:00 A.M. to 5:00 P.M.) Monday through Friday. Other shifts such as 2:00 P.M. to 11:00 P.M. may be mutually agreed upon should this be the most expeditious manner in which to accomplish the

project. However, all work shall be closely coordinated with both the APS Project Manager and the Site Administrator to avoid interference with any facility schedule. Weekend hours are only permissible if approved by Site Administrator and require an approved Facility Access from APS School Police.

All workmen shall sign in and out through the administrative office when arriving at the site, and again when leaving. A list of worker's name(s) and job classifications(s) shall be included. Site workers must wear distinctive clothing identifying the company e.g., shirt with company logo and a company badge, including sub-contractors a reasonable code of conduct must be observed. Profanity and other forms of vulgarity will not be tolerated.

Interrupting Services:

The contractor shall coordinate the execution of all work within the building in order to minimize interference with the operation of existing network, mechanical, plumbing, and utility systems during construction or repair work. Connections to existing systems requiring the interruption of service within the building shall be carefully coordinated with the appropriate APS project manager to minimize system down times. Absolutely no interruption of the existing services will be permitted without the prior approval of APS.

Safety:

The contractor shall take all necessary precautions to protect the site occupants from hazardous conditions. The contractor shall abide by all Occupational Safety and Health Administration (OSHA) regulations and all State of New Mexico Environmental Improvements Board Occupational Health and Safety regulations that apply to this contract. The contractor shall defend, indemnify, and hold the Board of Education and its agents, officer, administrators, and employees free and harmless against all claims, loss, liability, and expense resulting from any alleged violations(s) of said judgments, court costs, and attorneys' fees. The contractor also shall be responsible for damage to persons or property that occurs as a result of his fault or negligence, or that of his employees, agents, and/or subcontractors, in connection with this contract.

Emergency / Lockdown Procedures:

In case of a work related emergency or accident, the contractor shall immediately contact 911 as applicable. The contractor shall also contact the site administrator, the Divisional Manager of Enterprise Cabling Division and the M&O Emergency Hotline at 764-9601. In case of a site lockdown, contractor employees shall adhere to all APS procedures.

Guarantee:

The contractor shall guarantee all materials, equipment and workmanship furnished and installed under this contract to be free from all defects and shall agree to replace at his/her expense, without expense to APS, any and all defective equipment, parts, etc.

Protection of Adjacent Surfaces:

The contractor shall take all measures necessary during the course of work to protect existing property including adjacent surfaces, equipment, systems, piping, furnishings, and landscaping from damage during the course of the work and shall repair promptly any such damage at his own expense and to the satisfaction of Albuquerque Public Schools.

Protection of Work:

The contractor is responsible for the protection and security of all materials, tools, equipment, and installed work until the final acceptance of the work by APS designee.

Clean-up:

The contractor shall keep the site reasonable clean and neat during the execution of the work, shall remove accumulations of debris at the end of each day, and shall leave all surfaces and areas completely clean at final completion.

Final Acceptance:

The contractor shall notify the Enterprise Cabling Division when each project is complete, whereas arrangements will be scheduled for a prompt inspection by appropriate APS personnel or representative who shall either accept the project as complete and satisfactory or provide a written list of items to be corrected and/or completed. Final acceptance also includes receipt of As-Builts, Cabling Certifications and all other such final documents. A Data Communications representative, a contractors' representative, the M&O Technology Infrastructure Coordinator and the APS Site representative must all sign-off on the Scope of Work as declaration of project completion.

DETAILED REQUIREMENTS:

Cabling and connectivity using 4 Pair twisted cable and patch cords are required to be Cat6 CommScope Uniprise Cable.

Network Electronics - switches shall be managed Aruba Switches.

Equipment racks – Chatsworth or equivalent.

Installers must be qualified to perform the work and be knowledgeable in the following activities:

- Cable installations and terminations for specified copper and fiber optic cables.
- Installation of network electronics including switches, fiber modules, stacking kits, WAP's, etc.
- ANSI/EIA/TIA 606A Administration labeling and documentation.
- Bonding and grounding where required.
- Testing copper and fiber circuits for performance compliance.

Industry Cable Installation Standards as well as manufacturer's instructions will be used for in-process quality control and final acceptance of the work installation. Installers will be required to provide and use the proper tools in the performance of each activity. The tools must be in good working order. The owner reserves the right to review the tool lists and tool maintenance procedure for the contractor. APS reserves the right to bring in the Manufactures representative to inspect the workplace and quality of work.

Horizontal Cabling:

- Contractor shall supply horizontal cables to connect each information outlet to the backbone subsystem on the same floor.
- Unless otherwise noted on the floor plans or within this document, the type of horizontal cables used work location shall be rated Category 6 UTP / Augmented.
- Cable jacket and Wall jacks shall be "Blue" in color.
- The Category 6 UTP I Augmented cables shall be run using a star topology format from Telecommunications Room on each floor to every individual Telecommunication Outlet.
- All cable routes to be approved by project manager prior to installation of the cabling.
- The length of each individual run of horizontal cable from the Telecommunication Closet on each floor to the Telecommunication Outlet shall not exceed 295 ft (90 m).
- Contractor shall observe the bending radius and pulling strength requirements of the Category 6 UTP cable during handling and installation.
- OSP cables required for all wet locations. (Example: Underground conduit feeds)
- Each of cable between the termination block and the information outlet shall be continuous without any joints or splices unless approved by Designee.
- In suspended ceiling and raised floor areas where walker duct, cables trays or conduit are not available, the Contractor shall bundle station wiring with plastic cables ties at appropriate distances. The cable bundling shall be supported via "J" hooks attached to the existing building and framework.
- Plenum cable will be used in all appropriate areas.
- If the interior of walls are not obstructed, the Contractor shall conceal horizontal distribution wiring internally within the walls. If such obstructions exist, Contractor shall secure approval by project manager prior to the use of an alternate method.
- The Category 6 UTP cable shall be Underwriter's Laboratories (UL) listed type MPR, OSP, MPP, CMR, or CMP as stated later in this section.

- Contractor shall provide project manager with detailed cable run diagrams for cable runs within raised floor detailing exact locations of cable for review and approval by project manager after coordination with other contractors, architect or design professional and general contractor.
- Conduit runs installed by the contractor shall not exceed 100 feet or contain more than two 90 degree bends without utilizing appropriately sized pull boxes.
- All terminations will comply with ANSI/EIA/TIA 568B Standard
- Infrastructure cabling and Patch Cables Color Scheme: Cables colors for the following uses will be:
 - a. BLUE - Data
 - b. White - Phone /Analog
 - c. Yellow- Wireless
 - d. Green - Security Cameras
 - e. Black - Mechanical
 - f. Purple - Electrical
 - g. Gray - Intercom

Backbone Cabling:

- 6 - strand minimum, tight-buffer Fiber Backbones between Distribution Frames.
- Aerial, OSP Fiber cables shall be made of an indoor/outdoor/plenum rating where transitions are required from buildings.
- Contractor shall supply and install the transmission media and terminating hardware to provide interconnection between the MC and each TR in a star topology.
- All cable routes to be approved by project manager prior to installation.
- Riser and tie cables shall be extended between TR's utilizing the interflow conduit sleeves.
- Contractor shall observe the bend/joint radius and pulling strength requirements of all backbone cables during handling and installation.
- Contractor shall supply and install the transmission media and terminating hardware to provide inter-building communications facility.
- All cable routes to be approved by project manager prior to installation.
- Contractor shall supply OSP copper cable, OSP optical fiber cable and electrical protection devices that will prevent electrical surges on the cable from entering buildings.

- All buried and underground conduits are required to contain a Tracer wire in the conduit. Service Entrances must be recorded as part of the As-Builts for future spotting references..
- Aerial cable will consist of U/V rated Category Cat 6, or U/V rated fiber optic cable.
- Use self-supporting cable rather than lashed cable if: (1) It is available in the required size, (2) there is no existing strand for voice and data, (3) new cable cannot be lashed to existing cable unless approved by an APS representative, and (4) adequate space exists for growth.
- Aerial connecting hardware and enclosures must be UV and NEMA4 rated.
- All clearances and separations must meet NEC and local codes. NO contractor will install any cable on the roofs of any APS facilities, or make any roof penetrations unless given written permission by M&O.
- The fiber cable runs will include a 10-foot Service loop at each distribution closet and/or point.

Fiber Specifications:

50 micron Multi-mode Fiber

10 Gigabit bandwidth capacity

300 meters (984') maximum distance LC type terminations Preferred

62.5 micron Multi-mode Fiber

1 Gigabit bandwidth capacity

220 meters (720') maximum distance LC type terminations Preferred

Single-mode Fiber

10 Gigabit bandwidth capacity

40 kilometers (~25 miles) maximum distance LC type terminations Preferred

Pathways:

In suspended ceiling and raised floor areas where duct, cable trays or conduit are not available, the Contractor shall bundle, in bundles of 50 or less, station wiring with cable ties snug, but not deforming the cable geometry. Cable bundles shall be supported via "J" hooks attached to the existing building structure and framework at a maximum of five foot (5') intervals. The contractor shall adhere to the manufacturer's requirements for bending radius and pulling tension of all data cables. Cables shall not be attached to or supported by fire sprinkler heads or delivery systems or any environmental sensor located in the ceiling air space. Cables shall not be attached or lift out ceiling grid supports or load directly on the ceiling grid. Plenum rated cable ties shall be used in all appropriate areas. Aerial pathways shall consist of rigid conduit masts and 30' utility poles, not to exceed a span of 75,' and wedge clamps as secure attachments to aerial messengers.

Identification:

All cables and conduits shall be labeled by the contractor at each exposed point or end with a unique identifier and a description of the cable function to ease individual cable tracing based on ANSI/EIA/TIA 606A and District standards. Labels shall be permanent, waterproof, and readable from one foot with permanent lettering and shall not be removable by normal cable handling or normal operations.

As-Builts Requirements:

Contractor is required to provide As-Built drawings at the completion of each project. They must be of professional quality, capable of being reproduced and with reasonable archival standards. As-Builts shall be delivered within 10 working days after project completion. Hand-drawn As-Builts are not acceptable. Upon completion of the project, paper and electronic copies of the As-Builts are to be provided to the Data Communications Division, as well as a hard copy to the Site Technology Coordinator. As-Builts are required to be drawn in the latest version of auto desk's AutoCAD software and comply with the United States National CAD Standard as follows:

- ES - Site Plan - Details include Telecommunications pathways and spaces; Conduits, pull boxes, underground boxes, sleeves, masts and utility poles.
- TN-DATA, Telecommunications Network Layer - Details physical locations and labeling for network drops, MDF, IDF's, wireless access points and backbones.
- Labeling compliance with ANSI/EIA/TIA 606A standards and District standards
- Electronic As-Builts will be sent as a complete set which include both the .dwg and .dxf formatted files

Grounding and Bonding Requirements:

The contractor shall be responsible for providing an approved ground at all newly installed distribution frames, and or insuring proper bonding to any existing facilities. The contractor shall

also be responsible for ensuring ground continuity by properly bonding all appropriate cabling, closures, cabinets, service boxes and framework. All grounds shall consist of #6 AWG copper wire and shall be supplied from an approved building ground and bonded to the main ground. Bonding and grounding shall be in compliance with the NEC and ANSI/EIA/TIA 607 standards.

When required by local code, provide a Telecommunications Bonding Backbone utilizing a #6-A WG or larger bonding conductor that provides direct bonding between equipment rooms and telecommunications closets. This is part of the grounding and bonding infrastructure (part of the telecommunications pathways and spaces in the building structure), and is independent of equipment or cable.

Fire stopping and Penetration Sealants:

Sealing of openings between floors, through rated fire and smoke walls, existing or created by contractor for cable pass through shall be the responsibility of the contractor. Any openings created by or for the contractor and left unused shall also be sealed as part of this work. All sealant materials will be installed according to manufacturer's directions and recommendations. No foam sealants are to be used.

Provide UL and ATSM approved fire stopping systems to restore fire ratings to all wall or floor or ceiling penetrations. Contractor must provide certification of such fire stopping along with as-builts indicating the locations of such penetrations.

The fire rating of the penetration seal shall be at least that of the floor or wall into which it is installed, so that the original fire rating of the floor or wall will be maintained as required by Article 300-21 & 22 of the NEC. Sealing of molar space of conduits is also required.

The sealant shall remain resilient and pliable to allow for the removal and/or addition of cable without the necessity of drilling holes. It shall adhere to itself in order to allow any and all repairs to be made with the same material. It shall allow for vibration, expansion and/or contraction without affecting the seal, cracking or crumbling.

Cable Testing:

Contractor will provide a cable certification from the manufacture based on their warranty period, as proof that the system is fully operational. If at any time during this period, cable or workmanship should be defective, the contractor will repair or replace in a timely manner at no charge. The above-referenced certifications must be delivered to APS no later than 30 days after completion of the project. Test equipment manufactures may include only Wirescope or Fluke. The contractor shall perform the cable tests for all cables specified as follows unless otherwise noted or approved by the owner:

Cabling Warranties:

Contractors are required to provide a Manufacture Warranty Certification for all completed Network Installations projects for new schools, classroom additions, renovations, upgrades, LAN expansions. This Warranty shall be hand-delivered to the Data Communications Division no later than one month after project completion.

