

APPENDIX A

SCOPE OF WORK "Internal Connections – Structured Cabling (E-Rate)"

January 10, 2025

1.0 BACKGROUND

The District seeks qualified contractors to provide structured cabling services for the installation, maintenance, and upgrades of low-voltage communications infrastructure at various District facilities. All work shall adhere to the District's Division 27 – Technical Guidelines attached as Appendix A-1 and comply with the Universal Service Administrative Company (USAC) E-Rate program requirements.

The primary objective of this project is to ensure the delivery of a reliable, scalable, and compliant network infrastructure to support the educational and operational needs of the District. The work includes, but is not limited to, the items in this Scope of Work and the following Appendices:

- Appendix A-1: Division 27 Technical Guidelines
- Appendix A-2: Floor Plans for School Sites

2.0 OBJECTIVE

2.1 Scope of Work

2.1.1 The scope of work includes the design, installation, testing, and certification of structured cabling infrastructure for the following sites:

- 2.1.1.1 Arapahoe Ridge Elementary School, 13095 Pecos Street, Westminster, CO
 - 2.1.1.2 Eagleview Elementary School, 4601 Summit Grove Parkway, Thornton, CO
 - 2.1.1.3 Glacier Peak Elementary School, 12060 Jasmine Street, Brighton, CO
 - 2.1.1.4 Prairie Hills Elementary School, 13801 Garfield Place, Thornton, CO
 - 2.1.1.5 Skyview Elementary School, 5021 E 123rd Avenue, Thornton, CO
 - 2.1.1.6 Tarver Elementary School, 3500 Summit Grove Parkway, Thornton, CO
 - 2.1.1.7 Shadow Ridge Middle School, 12551 Holly Street, Thornton, CO
 - 2.1.1.8 Silver Hills Middle School, 12400 Huron Street, Westminster, CO
 - 2.1.1.9 Horizon High School, 5321 E 136th Avenue, Thornton, CO
 - 2.1.1.10 Mountain Range High School, 12500 Huron Street, Westminster, CO
- 2.1.2 The time period for completion of this work is from April 1, 2025 through September 30, 2026.
- 2.1.3 Appendix A-2: Floor Plans for School Sites, includes details related to the required number of data cable jacks, MDF/IDF closet locations, and building room layouts.
- 2.1.3.1 Site surveys will be performed with District IT Staff as part of the design process.

2.2 Project Overview

- 2.2.1 The Contractor shall provide all labor, materials, tools, and equipment necessary to implement a structured cabling system that meets or exceeds current industry standards, including TIA/EIA and BICSI requirements.
- 2.2.2 Work shall support connectivity for voice, data, video, and other communications systems.

2.2.3 All installed systems must integrate seamlessly with the District's existing infrastructure and be adaptable for future upgrades or expansions.

2.3 Required Services

2.3.1 The following services are required within the scope of work:

- 2.3.1.1 Installation of internal structured cabling systems for data.
- 2.3.1.2 Termination, testing, and certification of all horizontal and backbone.
- 2.3.1.3 Provision and installation of required cable management components, patch panels, and racks.
- 2.3.1.4 Labeling and documentation of installed cabling.
- 2.3.1.5 Provision of detailed as-built documentation, including updated floor plans with cable paths and connection points.
- 2.3.1.6 Demolition and removal of legacy cabling systems.
 - 2.3.1.6.1 Contractors must comply with District sustainability policies by recycling legacy cabling and minimizing environmental impact during installation.
- 2.3.1.7 Emergency repairs not covered by the scope of this project.

2.4 Performance and Quality Standards

2.4.1 All structured cabling installations must:

- 2.4.1.1 Comply with current District's Division 27 – Technical Guidelines attached as Appendix A-1.
- 2.4.1.2 Adhere to EIA/TIA-568 standards for structured cabling systems.
- 2.4.1.3 Be tested and certified to meet or exceed the manufacturer's performance specifications.

2.5 Service Level Expectations

2.5.1 The Contractor shall:

- 2.5.1.1 Respond to project requirements and timelines in a manner that minimizes disruption to school operations.
 - 2.5.1.1.1 The existing structured cabling (i.e., cabling and racks) and MDF/IDF equipment in the schools is currently in use. The contractor must coordinate to develop a cutover and testing plan, including rack elevations, testing schedules, and procedures for minimizing downtime during transitions.
- 2.5.1.2 Provide professional and experienced personnel trained in low-voltage cabling (e.g., BICSI) and District Division 27 guidelines.
- 2.5.1.3 Maintain compliance with all applicable building codes, safety regulations, and E-Rate documentation requirements.
- 2.5.1.4 Provide warranty coverage for all installations as detailed in the District Division 27 guidelines.
- 2.5.1.5 Be capable and have the capacity to manage multi-site projects of similar scale.

3.0 TECHNICAL APPROACH / REQUIREMENTS

3.1 Structured Cabling Design and Installation

3.1.1 The vendor shall provide all materials, equipment, and labor necessary to complete the following:

- 3.1.1.1 Cabling Design and Engineering
 - 3.1.1.1.1 Develop a detailed horizontal structured cabling design, including pathways, cable types (e.g., Cat 6A), terminations, and labeling.

- 3.1.1.1.2 Develop a detailed backbone fiber optic cabling design including pathways, fiber cable, terminations, and labeling for backbone cabling between MDF and IDF rooms.
- 3.1.1.1.3 Provide a site survey and work plan for each of the ten schools to document existing conditions and requirements.
- 3.1.1.1.4 Ensure the design complies with District Division 27 standards and meets E-Rate requirements.
- 3.1.1.2 Installation Tasks
 - 3.1.1.2.1 Install low-voltage horizontal structured cabling (Cat 6A) for end-user locations and backbone fiber optic cabling between telecommunications equipment rooms.
 - 3.1.1.2.2 Terminate all cables with industry-standard connectors and patch panels.
 - 3.1.1.2.3 Install cable management systems, including raceways, trays, and racks.
 - 3.1.1.2.4 Perform labeling and documentation for traceability and maintenance.
- 3.1.1.3 Testing and Certification
 - 3.1.1.3.1 Perform certification testing of all installed cabling using industry-standard tools.
 - 3.1.1.3.2 Provide detailed test reports to demonstrate compliance with performance requirements (e.g., bandwidth capacity up to 10 Gbps or higher).
 - 3.1.1.3.3 Deliver as-built documentation for each site, including floor plans, cable pathways, and termination details.

4.0 MANAGEMENT APPROACH / TASKS AND DELIVERABLES

4.1 Project Schedule and Service Delivery Date

- 4.1.1 Provide a high-level schedule detailing the project plan for each school, including:
 - 4.1.1.1 Phase 1: Design and Engineering, including site surveys and readiness assessments.
 - 4.1.1.2 Phase 2: Installation, including installation, cutover and demo schedules for each school.
 - 4.1.1.3 Phase 3: Testing and Certification, including timelines for testing and certification timelines.
 - 4.1.1.4 Proposed services are to be installed, tested, and fully operable no later than September 30, 2026.

4.2 Project Management Requirements

- 4.2.1 Assign a dedicated project manager to oversee the installation process and coordinate with the District's project manager.
- 4.2.2 Risk Management
 - 4.2.2.1 Detailed risk mitigation and contingency strategies to minimize disruptions during installation, including delayed material delivery, unexpected site conditions, or other unforeseen circumstances.
- 4.2.3 Change Management Process
 - 4.2.3.1 All Change requests must be submitted in writing to the District's project manager and approved prior to implementation.
 - 4.2.3.2 Change requests should include scope, impact, and cost details.
- 4.2.4 Deliverables
 - 4.2.4.1 Comprehensive as-built documentation for each school.
 - 4.2.4.2 Certified cabling test results demonstrating compliance with District Division 27 and industry standards.

- 4.2.4.3 Detailed network diagrams reflecting the newly installed infrastructure, including labeling of all cable runs, patch panels, and MDF/IDF layouts for easy future maintenance.

4.3 Monitoring, Support, and Service Level Agreements (SLAs)

- 4.3.1 The selected vendor must:
- 4.3.1.1 Ensure that all structured cabling installations meet requirements for reliability and performance.
 - 4.3.1.2 Provide post-installation support, including troubleshooting and warranty services. Warranty services shall be in compliance with District Division 27 and manufacturer guidelines.
 - 4.3.1.3 Warranty support must include a guaranteed response time of 24 hours for critical issues and resolution within 5 business days for non-critical items.

5.0 OPTIONAL / VALUE ADDED ITEMS

5.1 Additional Value-Added Services

- 5.1.1 As an option, the District will consider including the one or both of the following schools in the scope of work including the design, installation, testing, and certification of structured cabling infrastructure:
 - 5.1.1.1 Hunters Glen Elementary School, 13222 Corona Street, Thornton, CO
 - 5.1.1.2 Century Middle School, 13000 Lafayette Street, Thornton, CO
- 5.1.2 The time period for completion of this work is from April 1, 2025 through September 30, 2026.
- 5.1.3 Appendix A-2: Floor Plans for School Sites, includes details related to the required number of data cable jacks, MDF/IDF closet locations, and building room layouts.
- 5.1.4 Selection of optional sites will depend on contractor performance metrics, including on-time completion of milestones, quality of installation (e.g., passing test results), and ability to allocate sufficient resources without impacting the primary project schedule.