

PROPEL SCHOOLS - CABLING BID #YR140005

ATTACHMENT: B-PROPEL-STD & SPECS

Note: All new drops should run to the closest IDF/MDF network closets on the floors they are on.

Narrative Section:

It is the goal of this Bid Contract Project and supplied specifications/diagrams to provide a complete workable LAN system. Any item not specifically shown on the riser or called for in the specifications, but normally required conforming to this intent, are to be considered a part of the contract. The risers and specifications are not intended as a complete materials list of items required by the contractor.

Contractor must provide all items and work indicated within all documentation submitted with this RFP process (and via a scheduled site evaluation visit as identified within the RFP) and all items and work called for in the specifications. This includes labor, materials, incidentals, equipment, appliances, services, tools, test equipment, supervision, consumable items, fees, licenses, insurance, etc., to provide a complete cabling system. No "change-orders" or additional charges can be levied against this project unless there is a written and signed document requesting such changes. Any costs above and beyond the submitted amount from the contractor for this project will be absorbed by the contractor.

Cable Specs:

Intra-building UTP:

All cabling must meet IEEE specs for CAT 6 cabling. Corresponding patch panels and wall jacks are also to be rated for CAT 6 specifications.

Patch Cords:

All patch cables must be booted Category 6 and shall be color coded as specified. All patch cables must be three (3) foot in length at the patch panel and ten (10) foot in length at the wall jack. All patch cables required must be provided by the contractor.

Intra-building Fiber:

6 strand Multi-mode backbone cable. High strength. Physical specifications 62.5/125 micro, tight buffered, multi-mode optical fiber cable. 900 micro buffer, EIA/TIA 568, IEEE 802 compliant.

Fiber patch cords:

ST to SC connectors. Length to be 1 meter...**Final cable spec should be verified with equipment contractor prior to ordering.**

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Labeling:

All cable types are to be labeled at both ends with machine generated black uppercase lettering on a permanent adhesive label stock, covered with a permanent water resistant sealer. Patch cords at the patch panel should be labeled with the corresponding room and drop number (ex. 101-1). Fiber patch cords should be labeled with the room and switch number of the corresponding equipment (ex. IDF-100 SW-1).

Color codes for Patch Cables:

- All patch panel to equipment cables are to be Blue except those that are for WAPs which should be Yellow. All cables should be managed neatly and utilize acceptable cable-management components.
- All CAT 6 cables used for equipment uplinks must be Red, labeled as specified and managed
- All cables from the wall jacks located in the various rooms for attaching equipment to the network do not have to be labeled, but must be a minimum of 10 feet in length, CAT 6 Rated, booted at both ends and Grey in color.

Testing:

All final test reports shall be notarized. The original and three copies shall be turned over to the owner.

After installation of fiber connectors, visually inspect each fiber end-face at 10X magnification. Refinish any fibers showing visible defects and/or striations in the core area. Perform end-to-end, bi-directional attenuation (loss) test for each fiber strand at 850nm and 1300nm wavelengths. Conduct tests in accordance with EIA/TIA-525-14, method B and with test instrument manufacturer's printed instructions. All Intra-building UTP shall be tested end-to-end.

Documentation:

Contractor is responsible for providing electronic documentation of network cabling location terminations (by rack) and corresponding final network layout.

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Basic Network Structure Summary:

The network cabling infrastructure being requested will consist of the following deliverables unless otherwise noted:

- 6 strand vertical fiber backbone to run from each new IDF network closet (one total run)...terminating in the Ground floor network MDF closet. Fiber must be enclosed in inter-duct and draw-cord must be intact within interdict upon completion of job. All fiber must be labeled at both ends with wrap-around, tear-resistant labeling. No use of any existing occupied interduct is permitted.
- All Network IDFs/MDF require a wall-mounted, deep rack which must be mounted on 3/4" plywood which must be painted to match (somewhat) the original background wall. Mounted unit should be capable of safely supporting all equipment including a UPS.
- Any required network down-time **MUST** be coordinated with the school's Technical Support staff/resource. Contact information will be provided upon Bid Award.
- Location of all rack assemblies to be installed should be placed so that existing electrical outlets can be leveraged where the opportunities exist.
- Contractor is responsible for all trash removal at the end of shifts so as not to impede everyday school operation.
- It is the contractor's responsibility to address all aspects of aesthetics in regards to repairing cracks, holes and similar defects; including touch-up painting where needed which are direct results of the contracted work being performed.
- Contractor is responsible of migration of any existing drops, panels or other network components and incorporating them into the new network scheme/scenario being implemented.
- A post-job inspection will be done before final signoff to ensure that all specifications, labeling standards, terminations and defined deliverables are met.

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Equipment/component list (To Be Provided by Cabling Contractor):

- 24 Port CAT 6 Patch Panels: **TBD by Contractor**
- 48 Port CAT 6 Patch Panels: **TBD by Contractor**
- 96 Port CAT 6 Patch Panels: **TBD by Contractor**
- Wall-mount Network Racks: **TBD by Contractor**
- Floor-mount Network Racks: **TBD by Contractor**
- Fiber Distribution Panels w/SC Connectors: **TBD by Contractor**
- IDF/MDF 3 ft. Blue Booted CAT 6 Patch Cables: **TBD by Contractor**
- IDF/MDF 3 ft. Red Booted CAT 6 Patch Cables: **TBD by Contractor**
- Fiber Patch Cables: **Quantity & length to be determined by Contractor**
- Wall Jack CAT 6 10 ft. Yellow Booted Patch Cables: **TBD by Contractor**
- 12-ST (12 fibers) Multimode Rack Mount Fiber Cabinets: **TBD by Contractor**
- 24-ST (24 fibers) Multimode Rack Mount Fiber Cabinets: **TBD by Contractor**
- CAT 6 Jacks: **TBD by Contractor**
- CAT 6 Wall Plates: **TBD by Contractor**
- CAT 6 Patch Cables w/ Boots 10ft. Grey: **TBD by Contractor**
- CAT 6 Patch Cables w/ Boots 3-5ft. Blue: **TBD by Contractor**
- CAT6 Patch Cables w/ Boots 3ft. Red: **TBD by Contractor**
- CAT6 Patch Cables w/ Boots 3-5ft. Yellow: **TBD by Contractor**
- 3Meter SC-LC MMF Patch Cables: **TBD by Contractor**
- (Bulk) CAT 6 Solid Plenum Rated Cable: **TBD by Contractor**
- (Bulk) 6-strand MMF: **TBD by Contractor**

*** All spare cables to be given directly to school technical staff**

NOTE: The above list is to be used as a reference guide to assist in the bidding process. It should be noted that the list is only provided to assist in the evaluation process and is not necessarily a comprehensive list of all materials required to complete the project. The Contractor is responsible for identifying and providing all required components in sufficient quantities necessary to complete the project within the specifications outlined in the RFP Contract. No additional add-on costs will be permitted outside of the "Per drop/per closet" pricing provided in the Bid response submitted by the awarded contractor for this Bid Project. Thus, said submitted pricing should take into consideration not only the labor but all related materials. Omission of any item needed to complete the project is solely the responsibility (purchase and payment) of the contractor.

The following E-Rate acquired electronics will be provided by the school to the contractor at time of installation so all equipment/components can be assembled for a full operating system:

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- Layer 3 24 Port Switches
- Layer 3 24 Port POE Switches
- Layer 3 12 Port SFP Switches
- Assorted switch Modules:
- Cisco Wireless Access Points
- Rack Mount UPS