Request for Proposals

Consolidated High School District 230

District-Wide

LAN-BASED WIRELESS
TABLE OF CONTENTS

1. BACKGROUND ........................................................................................................................................... 4

2. PROCUREMENT INFORMATION ............................................................................................................. 7

3. EVALUATION CRITERIA .......................................................................................................................... 8

4. PURPOSE AND SCOPE ........................................................................................................................... 9

5. CURRENT NETWORK INFRASTRUCTURE .............................................................................................. 9

6. TECHNICAL REQUIREMENTS ............................................................................................................... 10

7. FUNCTIONAL REQUIREMENTS .............................................................................................................. 14

8. CABLING SPECIFICATIONS .................................................................................................................. 23

9. PRODUCTS ................................................................................................................................................ 27

10. STRUCTURED CABLING SYSTEM - EXECUTION ............................................................................. 31

11. CUSTOMER SERVICE AND WARRANTY ............................................................................................. 41

12. ADDITIONAL CAPABILITIES / FEATURE DESCRIPTIONS .................................................................. 42

13. VENDOR RESPONSIBILITIES AND REQUIREMENTS ......................................................................... 43

14. REFERENCE AND EXPERIENCE ......................................................................................................... 50

15. PROPOSAL RESPONSE PRICING ....................................................................................................... 51
16. ACKNOWLEDGMENTS ........................................................................................................ 51
17. COMPLETION TIME: ............................................................................................................. 52
18. BONDING ............................................................................................................................. 56
19. PROPOSAL RESPONSE PRICING (BASE BID CAT-6A 10-GIG): .............................. 57
20. STRUCTURED CABLING SYSTEM - ALTERNATE PRICING .................................. 57
21. STRUCTURED CABLING SYSTEM - UNIT PRICING .................................................. 60
22. WARRANTY ACKNOWLEDGEMENT – STRUCTURED CONNECTIVITY SYSTEM..... 61
23. ACKNOWLEDGMENT OF RECEIPT OF ANY ISSUED ADDENDA ............................. 62
24. GENERAL INSTRUCTIONS TO BIDDERS .................................................................... 62
1. **Background**

1.1. Consolidated High School District 230 ("District") is located approximately 25 miles southwest of Chicago. It serves portions of eleven suburban municipalities in its nearly 73 square miles. It has over 8,700 students in three high schools.

1.2. Currently the District WAN provides a minimum of 1Gbps of bandwidth to every location.

1.2.1. Internet bandwidth totals 400Mbps and may be expanded over the summer of 2014.

1.3. **Response Requirements**

1.3.1. Proposals must be submitted to the District by 2:00 pm CST, Friday, February 28, 2014. The building will be open and the receptionist will receive proposals.

1.3.2. Proposals must be submitted to:

   **John Connolly**  
   **Director of Technology**  
   **15100 S. 94th Ave.**  
   **Orland Park, IL 60462**

1.3.3. Responders must supply one (1) original, five (5) printed copies, and one (1) electronic copy of the response on CD.

1.3.4. All prices shall be F.O.B., Orland Park, Illinois.

1.3.5. All envelopes MUST be sealed and marked: “LAN-BASED WIRELESS RFP”.

1.3.6. Pricing MUST be separated out by each school and building.

1.3.7. RFPS MAY NOT BE FAXED.

1.3.8. Proposals are to be formatted such that any requested information is provided directly beneath each numbered section in which the information is requested, or in the specific forms provided within the this document.

1.4. Questions on this procurement shall be directed, in writing, via e-mail to:

   **Mr. John Connolly**  
   **jconnolly@d230.org**

1.5. Building floor plans may be requested by contacting Mr. Connolly as noted below.

   **Mr. John Connolly**  
   **jconnolly@d230.org**

1.6. A **mandatory** vendor walk through is scheduled for Tuesday, February 11, 2014, at 1:15 PM CST. Vendors are to meet at:

   **Consolidated High School District 230**  
   **15100 S. 94th Avenue**  
   **Orland Park, IL 60462**
(NOTE: Picture identification will be required of all attendees)
1.7. The schedule for this procurement is described in the following Table 1:

<table>
<thead>
<tr>
<th>Selection Process Step</th>
<th>Estimated Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFP Issued</td>
<td>Friday, January 31, 2014</td>
</tr>
<tr>
<td>Mandatory Vendor Walk Through</td>
<td>February 11, 2014</td>
</tr>
<tr>
<td>Final Date for Questions</td>
<td>February 12, 2014</td>
</tr>
<tr>
<td>Publish Addendum</td>
<td>February 17, 2014</td>
</tr>
<tr>
<td>Proposals Due</td>
<td>February 28, 2014</td>
</tr>
<tr>
<td>Decision on Vendor Finalists (short-list)</td>
<td>March 2014</td>
</tr>
<tr>
<td>Vendor Finalist Presentations</td>
<td>Week of March 17, 2014</td>
</tr>
<tr>
<td>Finalists Visit Schools and Conduct Bake-off</td>
<td>Week of March 31, 2014</td>
</tr>
<tr>
<td>Final Vendor Selection</td>
<td>Week of April 7, 2014</td>
</tr>
<tr>
<td>Contract Negotiations Complete</td>
<td>April 18, 2014</td>
</tr>
<tr>
<td>Presentation of Recommendation to Board</td>
<td>April 24, 2014</td>
</tr>
<tr>
<td>Work to Begin</td>
<td>June 2, 2014</td>
</tr>
<tr>
<td>Installation Complete</td>
<td>August 8, 2014</td>
</tr>
</tbody>
</table>
2. **Procurement Information**

2.1. This document will deal with the specification and procurement of a wireless system for all facilities within the District, including administrative offices.

2.2. **General Requirements**

2.2.1. The Contractor shall furnish and install all necessary labor, material and/or equipment required to complete the work as described within the RFP documents and as specified herein for the Owner.

2.2.2. The District will provide expected wireless access point locations and coverage needs.

2.2.2.1. The District will work with the selected vendor to finalize access point locations based on the selected wireless access point characteristics.

2.2.3. The Contractor shall carefully investigate the site and conditions, verify dimensions by actual measurement if necessary, and coordinate the work accordingly. The Contractor shall be responsible for the accuracy of all such measurements and the precise fitting and assembly of the finished installation.

2.2.4. The RFP response of the wireless installation is explained in the "Proposal Form" section of the RFP Documents. The pricing response is to include the furnishing and installation of all wireless system materials as listed in the Products Section and all associated materials not listed, yet required, for a complete installation.

2.2.5. No substitutions, deletions, changes, or additions of wireless access point locations shall be permitted without written approval from the Owner's PM.

2.2.6. The Contractor shall be responsible for the protection of its work until such time that the Owner issues written acceptance of the Wireless System.

2.3. **Qualifications of Responder**

2.3.1. This RFP is open to all accredited resellers of state-of-the-art wireless LAN solutions. Vendors must be certified by the manufacturer in all hardware and software required by this RFP.

2.3.2. The Contractor shall be licensed to do business in the State of Illinois.

2.3.3. The Contractor shall have worked satisfactorily for a minimum of three (3) years on systems of this type and size.

2.3.4. If the use of subcontractors is approved, they shall assume all rights and obligations toward the Contractor that the Contractor assumes toward the Owner and Engineer.

2.4. **Coordination**

2.4.1. The Contractor is to coordinate its activities with the Owner's PM on the project and attend project management meetings as directed.
2.4.2. Prior to the project kick-off meeting, the successful Contractor is to prepare and furnish to the Owner’s PM a detailed installation schedule of events for the wireless work.

2.4.2.1. The schedule is to indicate daily work of the project.

2.4.2.2. This schedule will be utilized to track the progress and status of the installation and to coordinate work efforts with individual school administration.

2.4.2.3. Once agreed to and submitted, any deviation to this schedule must be approved by the Owner’s PM. The schedule must comply fully with the completion dates included in the Contract Documents, unless modified by issuance of an Addendum.

2.4.3. The preparation and agreement to an installation schedule is to be coordinated between the Contractor and the Owner’s PM.

2.4.3.1. It should be noted that this project is subject to Board of Education approval and may be a phased or multi-year project, regardless of the selected vendor.

3. Evaluation Criteria

3.1. All proposals will be evaluated using the general evaluation criteria described in the following Table 2:

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Meet Technical and Functional Requirements</td>
</tr>
<tr>
<td>● Price</td>
</tr>
<tr>
<td>● Completeness and Accuracy of Proposal</td>
</tr>
<tr>
<td>● References and Experience</td>
</tr>
<tr>
<td>● Service and Support</td>
</tr>
</tbody>
</table>

3.1.1. The evaluation process will consist of review and evaluation of proposals received by a team consisting of District personnel and consultants.
4. **Purpose and Scope**

The purpose of the RFP is to solicit proposals from vendors to replace or update the wireless infrastructure for the District. General information about the District can be found on the District’s website at [http://www.d230.org](http://www.d230.org). The District is seeking to implement extended, secure coverage to all points within the District. Wireless coverage must be adequate for an immediate implementation of bring-your-own-device (“BYOD”) an expected maximum of 90 personal devices per classroom. The implementation shall be designed to accommodate all wireless devices such as Mac and PC laptops, all tablets – including Android, Kindle, iPods, cell phones, PDAs, etc.

The acquisition will include wireless equipment, wireless mounting brackets, wireless access points and physical or virtual controllers depending on whether the solution is controller based or controller-less, copper patch cables and any necessary management software with associated hardware. This must be a turnkey solution. No other third-party equipment purchases shall be required for complete implementation of the wireless system. Cabling from telecommunications closets to each access point location will be the responsibility of the Owner.

Currently, the District owns Cisco 3602i, 1142 wireless access points which provide reasonable coverage for staff and teacher devices. Each school is supported by two (2) locally installed Cisco 5508 controllers and one (1) locally installed Cisco 5508 Guest anchor controller.

5. **Current Network Infrastructure**

The District currently maintains a Layer 2 WAN utilizing Comcast-based services. The school LAN is Layer 3 with routing Cisco switches. The minimum inter-building connection speed is 1Gbps. See Exhibit 1 below. There are no network bottlenecks at this time.

Eight (8) wireless SSIDs have been installed throughout the network:

- The District will restructure existing SSIDs, based on the recommendation of the contractor.

Voice-over-IP (VoIP) is enabled with the appropriate prioritization and VLANs throughout the District.

**Exhibit 1**

Directory services are provided by Microsoft Active Directory, which currently exists in a 2003/2008 mixed mode. The existing wireless system authenticates users through Microsoft Network Policy Server to Active Directory. Contractors responding to this RFP shall assume that integration to Active Directory will be required for student, faculty and staff authentication.

The District’s current schools, square footage, and number of classrooms are included in Exhibit 2. Note these are informational and not intended as wireless survey replacements.
Site Descriptions

Below is a list of schools under scope which will list the following items: suggested AP count per location and square footage

Table 2

<table>
<thead>
<tr>
<th>School</th>
<th>AP Count</th>
<th>Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrews HS</td>
<td>151</td>
<td>598,279</td>
</tr>
<tr>
<td>Stagg HS</td>
<td>223</td>
<td>423,193</td>
</tr>
<tr>
<td>Carl Sandburg HS</td>
<td>192</td>
<td>690,883</td>
</tr>
</tbody>
</table>

Note: Reference attached building AP placement maps included with this RFP.

Vendor Solution Responses:

The District is seeking responses from the following wireless vendors: Aerohive, Aruba, Cisco, Meraki and Meru.

Vendors are requirement to meet the technical requirements based on the technical specification listed on this request for proposal.

6. Technical Requirements

Please provide a narrative description of your product’s ability to comply with each item in this section as appropriate. Each description shall refer to the section and item number being addressed.

6.1. Base Requirements – Requirements in this section may be answered by an acknowledgement of the question (such as “Read – Comply”), a description of the method of compliance or a statement explaining non-compliance. Statements of non-compliance shall include a description of any alternatives available to reach the same result. The following is a list of requirements that the wireless LAN system must comply with:

6.1.1. The Wireless System must comply with the IEEE 802.11 ac, 802.11n, 802.11g, 802.11b and 802.11a standards for wireless Ethernet networks and the WAPs must obtain their power using the 802.3af Power over (PoE) Ethernet standard.

6.1.1.1. The District will not be upgrading switching infrastructure to PoE+ as a part of this installation.

6.1.2. Security

6.1.2.1. 802.11i/WPA2, WPA, TKIP, WEP

6.1.2.2. 802.1X Authentication: EAP-TLS, EAP-SIM, EAP-TTLS, PEAP, EAP-MD5, EAP-FAST

6.1.2.3. WEP, TKIP, DES, AES-CCMP, 3DES
6.1.2.4. Active Directory/LDAP Integration
6.1.2.5. RSA Token based authentication support
6.1.2.6. Describe Firewalling capabilities between VLANS if available

6.1.3. Controller (Controller-less solutions are also being considered)
6.1.3.1. Management for minimum of 1,500 Access Points
6.1.3.2. Remote Access Point Management
6.1.3.3. Dynamic RF Management (Channel and Power)
6.1.3.4. Support for 10,000 plus users
6.1.3.5. Captive Portal \ Authenticated & Unauthenticated (URL Redirection)
6.1.3.6. Embedded Guest Access (Guest Portal / Guest Splash)
6.1.3.7. Support for bandwidth shaping & metering
6.1.3.8. Must support packet prioritization
6.1.3.9. Describe, if available, 802.11 a/b/g/n air monitoring (Intrusion Prevention) built into access point

6.1.4. Controller licensing
6.1.4.1. Provide controller licensing for each new wireless access point, including any required licenses that would otherwise limit the future expansion of newer access points.

6.1.5. Wireless Access Points
6.1.5.1. Multiservice legacy support for 802.11a, b, g, n, ac
6.1.5.2. Coverage for both the 2.4Ghz and 5Ghz spectrum
6.1.5.3. Support of 20 dBm (100 mW) Transmit Power
6.1.5.4. 3x integrated or external single or dual band, 2.4-2.5 GHz with Omni-directional antennas – 2.0 dBi gain
6.1.5.5. 3x integrated or external single band, 5.1-5.8 GHz with Omni-directional antennas – 2.0 dBi gain
6.1.5.6. Ceiling and Wall Mounting
6.1.5.7. 1 Gbps network interface minimum
6.1.5.7.1. Please describe number of network interfaces included in the proposed solution
6.1.5.8. Separate Ethernet interface for configuration and support

6.1.6. Location Services
6.1.6.1. Active RFID
6.1.6.2. Real Time Location services

6.1.7. Management
6.1.7.1. Access Point Monitoring and Reporting
6.1.7.2. Bandwidth Monitoring and Reporting
6.1.7.3. SNMPv2, SNMPv3
6.1.7.4. List and describe what components are required for management including, but not limited to, physical and virtual controllers and management software and servers, which will be centrally located in the District’s administrative center and what components will be required at each remote school/building site.

6.2. Key Questions: Please respond to the inquiries below in detail. Reference to data sheets or fact sheets provided separately is discouraged.

6.2.1. Please describe in detail any management features that would allow:
   6.2.1.1. Inventory
   6.2.1.2. Frequency management
   6.2.1.3. Failure or distress alerts and alarms
   6.2.1.4. On/off capability
   6.2.1.5. Other capabilities

6.2.2. Remote access points
   6.2.2.1. Please describe WAP capabilities in the event that a WAP is no longer connected to the controller.
      6.2.2.1.1. Can the WAP route between VLANs locally?
      6.2.2.1.2. Will selective configured SSIDs continue to function?

6.2.3. The system must support traffic forwarding to the attached LAN switch. Please describe this capability and any dependence on specific Cisco switch features.

6.2.4. The system must support QoS and the ability to enforce QoS tags and policies. Please describe support or provisions for QoS methods, such as DiffServ, GQoS, IP TOS, etc., related specifically to VoWLAN. Does the system support 802.1 p/q or more specifically the handheld or other devices that may utilize it?

6.2.5. The system must be able to simultaneously carry video and/or broadband streaming. Please address manufacturer support and/or challenges for this technology.

6.2.6. Describe the maximum number of simultaneous devices supported by each access point.

6.2.7. If the maximum number of devices is simultaneously utilizing an access point, what would be the expected bandwidth per device?

6.2.8. Please describe the automatic RF tuning provided by the system.

6.2.9. Can an RF tuning be performed on an individual access AP?

6.2.10. In what circumstances would AP RF tuning be required?
6.2.11. Support for Rogue and Security tracking and provisioning: At a minimum, the system shall be capable of detecting and protecting against DoS, detect intrusion or rogue systems, and notify the administrator of detected rogue devices. In addition, the items below shall be considered optional:

6.2.11.1. Please describe or explain any overhead associated with Rogue detection and tracking, effect on the control plane traffic for VoWLAN, and please provide specific details, such as requirements for a separate, dedicated AP required for rogue, detection, removal, or shutdown.

6.2.11.2. Please describe options related to rogue devices and intrusion protection including, but not limited to, options for isolating or shutting down rogue devices.

6.2.11.3. Please describe any methods for the system to detect ad hoc networks, including hidden SSIDs, and for the inclusion of providing for interference from rogue or hidden ad hoc networks.

6.2.11.4. Describe methods and options for rogue detection, i.e. specific features and capabilities of the detection/prevention software, detail of additional software or hardware licensing required.

6.2.12. Monitoring software that provides methods for monitoring RF interference and real time monitoring and analysis: What tools provide capability for root cause analysis in the event of interference, failure, etc.?

6.2.13. The system shall provide report capabilities for use over time. Please describe the report generation capabilities of the system including, but not limited to performance statistics, link quality, throughput, network delays, latency, number of users on the network, number of devices per AP, percentage of uptime and downtime, and number of client failures.

6.2.14. Does the system provide for performance statistics and event logs to be exported? Describe the formats supported (Excel, Database, syslog server, etc.).

6.2.15. What capabilities exist for automatic distribution (e.g. via e-mail) of reports to network and building administrators?

6.2.16. Wireless connections shall be secure connections.

6.2.16.1. Authentication: The system shall provide for Certificate, Web Based, AAA, support for 802.1x, Radius, etc. Certificate Authentication, including AAA and Web Based is desirable. Please describe any similar capabilities if these are not offered or supported.

6.2.16.2. Encryption: Support for standard and advanced encryption.
6.2.16.3. Support for Time of Day or duration based access, packet rate limiting bandwidth for guest access and support for secure tunneling via IPSEC/GRE.

6.2.16.4. It is assumed the system is in compliance with 802.11e and 802.11. Please note or explain any discrepancies.

6.2.16.5. Can device-to-device traffic be blocked?

6.2.16.6. Please describe any firewall capabilities in each access point.

6.2.17. Do the proposed APs have an integrated packet capture capability?

6.2.18. Please describe packet capture capabilities.

6.2.19. Common Areas

6.2.19.1. Gyms & Stadiums: coverage for over 100 users per AP

6.2.19.2. Auditoriums & Theaters: coverage for over 125 users per AP

6.2.19.3. Locker Room & Bathrooms: coverage for over 100 users per AP

6.2.19.4. Boiler Room & Basement: coverage for over 25 users per AP

6.2.19.5. Other areas: coverage for over 100 users per AP

7. Functional Requirements

7.1. Controller and Controller-less AP specific requirements

7.1.1. Identify the cost of controllers necessary for the proposed District wide solution on the Cost Summary Document.

7.1.2. The District will consider on premise controllers or cloud-based controllers.

7.1.2.1. If on premise controllers are required, the structure must include Controllers at the District main data center and controllers in a backup data center provide by the District for redundancy.

7.1.2.2. The District is required an N+1 controller solution.

7.1.2.3. Failover of a controller to a secondary controller shall occur without any loss of service to end users.

7.1.2.4. Please include licensing requirements for an N+1 controller configuration.

7.1.2.5. Include any licenses with cost that are required for this described functionality in Price Summary Document.

7.1.2.6. The wireless solution proposed must be an enterprise class system and be resilient and highly available as a whole. Detail how your proposed solution will achieve this, including schematics as needed to provide full description.
Provide typical failure scenarios and highlight any single points of failure, including any loss of feature(s) or functionality(ies) when running in “fail-over” mode. Also include description of notification process for broken primary link(s).

7.1.2.7. The system must be designed to ensure there is no local loss of service of wireless to end users at any sites if either the Central Site or Redundant Site fails.

7.2. Application Specific Requirements

7.2.1. How is latency measured within the wireless network? Please explain any differentiation that may apply to latency sensitive applications such as voice.

7.2.2. There shall be no more than 100 milliseconds between a client move from one AP to the next to eliminate loss of service.

7.2.3. How are roaming clients handled?

7.2.4. Does the Client or does the AP/Controller decide when to change AP?

7.2.5. Describe controller failover scenarios, what is the end user impact?

7.3. Network Management

7.3.1. Provide an example of network management topology?

7.3.2. Can a common tool such as SolarWinds be used for wired and wireless network management? Please specify.

7.3.3. Does the network management application integrate into a system management framework?

7.3.4. Are client Identification reports possible, based on operating system or browser type to identify types of clients? i.e. PC Laptop vs. iPad. If the system does allow for this functionality, detail how it functions. (via MAC address or Layer 7 Inspection?) Identify all client fields which are captured.

7.3.5. Network management application shall allow for configuration management of all wireless infrastructure components.

7.3.6. Application shall allow for preset parameters to be downloaded to APs.

7.3.7. Application shall allow APs to be placed in groups e.g. schools or multiple schools to facilitate standard configuration while allowing different configurations based on usage scenarios within the school.

7.3.8. Please explain your procedure for provisioning a new AP. It is preferable that provisioning be self-provisioned without any manual intervention from the system administrator.

7.3.9. Describe the capabilities of your central management platform, e.g. Firmware Updates, Configuration Changes, Monitoring, Diagnostics, etc for all proposed network components.
7.3.9.1. Will the proposed system allow for firmware based upgrades to 802.11ad? Please describe how the system is expected to be upgraded to 802.11ad?

7.3.9.2. If a cloud based controller system is proposed, describe the change management process and customer notification process for updates to cloud based controllers. There cannot be automated updates that occur without coordination and approval from the District.

7.3.10. Can your system provide captive web portal functionality? If so, describe the features and function of your captive web portal.

7.3.11. Does the system provide for context aware functionality e.g. the ability to limit guest access based on time and date?

7.3.12. Describe the systems interference mitigation capability.

7.3.13. Access points shall be capable of being managed, configured, and monitored by an independent wireless network management solution.

7.3.14. The network management solution shall perform the following tasks:

7.3.14.1. Support more than 1,500 managed devices.

7.3.14.2. Collect and displays client device data.

7.3.14.3. Provide client device report filters for inventory reporting by device classification.

7.3.14.4. Automatically track every user and device, wireless and remote, on the network.

7.3.14.5. Provide visibility into the wired infrastructure.

7.3.14.6. Provide visibility into clients associated to network including location, SNR, and connection speed.

7.3.14.7. Log and display radio and RADIUS errors, including noise floor and channel utilization information.

7.3.14.8. Offer rapid drill-down from network-wide to device-level monitoring views.


7.3.14.10. Map upstream relationships between access points, controllers, and switches to identify the root cause of downtime and performance problems.

7.3.14.11. Correlate performance and downtime issues and send only a single alert in the event of an upstream device failure.

7.3.14.12. Define configuration policies through a Web user interface or by importing a known-good configuration from an existing device.

7.3.14.13. Use hierarchical policy definition to provide general configuration updates across the entire network without overwriting settings that vary from location to location.

7.3.14.15. Intelligently schedule automated configurations and firmware updates.

7.3.14.16. Archive device configurations for auditing and version control.

7.3.14.17. Maintain detailed audit logs of changes made by all operators.

7.3.14.18. Provide an integrated RF planning tool that generates and incorporates heat maps. Please include sample screen shots and reports.


7.3.14.20. Provide an Extensible Markup Language (XML) Application Programming Interface (API) for integration of valuable location data with other applications.

7.3.14.21. Run on standard PC hardware using a standard Windows operating system.

7.3.14.22. Implement device communication through Secure Shell (SSH), Telnet, Simple Network Management Protocol (SNMP) v1/v2c/v3, and other standard protocols.

7.3.14.23. Simulate failures to enable analysis of what-if scenarios for proactive RF coverage planning.

7.3.14.24. Establish flexible rules-based determination of the impact of a rogue access point to the existing environment.

7.3.14.25. Provide a central management console for monitoring wired and wireless intrusion detection and prevention activity while simultaneously identifying and neutralizing rogue access points.

7.3.14.26. Display the location of each rogue device and client on a building floor plan.

7.3.14.27. Aggregate, correlate, alert, and log wireless attacks that are detected and reported on the network to provide a comprehensive picture of infrastructure security.

7.3.14.28. Display the locations of rogue access points for faster investigation and threat removal.

7.3.14.29. Classify potential threats based on customized rules that define the characteristics of rogue devices and reduce false-positives.

7.4. Support Integration of future NAC Policy Management
7.4.1. Access points shall interface with an independent policy management solution with role-based policies, detailed endpoint profiling, enterprise-grade Remote Authentication Dial In User Service (RADIUS) / Terminal Access Controller Access-Control System Plus (TACACS+), Bring Your Own Device (BYOD), and Apple Bonjour-enabled device registration, mobile device management (MDM), and administrative Web access.

7.4.2. Support the following in the future NAC policy management:

7.4.2.1. Multivendor wireless and wired interoperability.
7.4.2.2. Built-in guest, profiling, and network access control.
7.4.2.3. Simple policy creation and troubleshooting interface.
7.4.2.4. Proactive policy simulation and testing utilities.
7.4.2.5. Real-time user and device access logs that track each authentication;
7.4.2.6. Dashboards for user and device authentication analysis.
7.4.2.7. MDM interoperability via API connector services.
7.4.2.8. Fully-replicated active clustering for high availability, redundancy, and load balancing.
7.4.2.9. Advanced reporting, analytics, alerts, and archiving for compliance and auditing.
7.4.2.10. Intuitive Web interface for administration and user-driven service portals.
7.4.2.11. Role-based access, enterprise-grade Authentication Authorization and Accounting (AAA), BYOD provisioning, device profiling, advanced reporting, and MDM capabilities across wireless, wired, and Virtual Private Networks (VPNs).
7.4.2.12. Customize guest access features that can onboard thousands of mobile devices and certificates.
7.4.2.13. Enforce context-aware policies including dynamic role-based access, VLAN and ACL assignments, and application-aware QoS.
7.4.2.15. Enable management and enforcement of network access at multiple levels and across domains when merging organizations or departments.
7.4.2.16. Allow identity stores to be used for authentication and ongoing authorization of users and devices.
7.4.2.17. Use built-in profiling to discover, categorize, and maintain a real-time database of endpoints, regardless of device type and IP address, using Media Access Control (MAC) Organizationally Unique Identifiers (OUIs), DHCP fingerprinting, Cisco Discovery Protocol (CDP)/Link Layer Discovery Protocol (LLDP), and onboarding inventory to enforce context-aware access policies.

7.4.2.18. Profile to determine mobile device adoption and ownership, and modify authorization privileges when device profile changes are detected.

7.4.2.19. Integrate a captive portal to support wired and wireless user authentication from a single Web page to enhance the BYOD user experience and reduce administrative overhead.

7.4.2.20. Allow users to register and share Bonjour-enabled iPads, Apple TVs and printers across VLANs.

7.4.2.21. Support Chromebooks, other tablets and media players.

7.4.2.22. Optionally support device registration to enforce policies based on the MAC address of gaming devices, printers, and wireless IP cameras.

7.4.2.23. Identify unmanaged non-802.1X devices as known or unknown when they connect to the network and their MAC addresses are verified through profiling or against an external or internal database. Following this process, policies shall be created that enforce differentiated access for these devices whenever they connect to the network and regardless of their location.

7.4.2.24. Automatically provision employee-owned Windows, Mac OS X, iOS and Android devices for 802.1X authentication and issues a unique device credential that can be revoked if a device is lost or stolen.

7.4.2.25. Apply device serial number, operating system version, and model number collected during on-boarding to wireless and wired network access policies.

7.4.2.26. Use a customizable guest portal to simplify the creation of branded login screens, posting of code-of-conduct messaging, and placement of advertisements and relevant organizational updates based on user role, location, department and venue.

7.4.2.27. Run operating system, anti-virus, antispyware, and firewall health checks to ensure compliance and network integrity before guest and employee-owned devices connect.

7.4.2.28. Automatic remediation services for non-compliant devices.

7.5. System Requirements
7.5.1. The wireless solution must support 802.11ac. Describe the 802.11ac access points that are part of your response. The 802.11ac access points must support 3x3 or 4x4 MIMO or variant.

7.5.2. System must support multimedia capabilities such as VoIP, Video. Specifics include: H.264/RTMP HD Video Unicast Streams and HTTP Segmented/HLS Streaming for modern devices. Describe your solution’s handling of these data streams.

7.5.3. System must support roaming devices without loss of service when changing to another AP for all mobile devices including but not limited to Android, Windows Tablets and Laptops, Apple iPads and Laptops.

7.5.4. Manage Apple Bonjour messaging by forwarding Bonjour across subnets and VLANs, limiting Bonjour by service and VLAN, limiting Bonjour by user role as defined by policy, limiting multicast messages over Wi-Fi, and, in conjunction with management policy, limiting Bonjour by device owner and/or device location.

7.5.5. System must support local switching – APs egress/ingress user traffic at local switch.

7.5.6. Support mesh capability – (APs shall support mesh without data cabling between nodes. A new AP shall have the capability of coming online without a physical LAN connection directly to the AP, yet have the ability to participate on the same network)

7.5.7. A minimum of 6 SSIDs shall be supported with the ability to separate Wi-Fi traffic based on user role and traffic type. An SSID shall be assignable to a user group, traffic type, or Virtual LAN (VLAN). Specifying VLANs on the Wi-Fi network shall automatically enable the required trunking and tagging for the wired network.

7.5.8. Voice and video traffic shall have the ability to be assignable to a specific SSID that provides high-priority handling. The system will provide the ability to set voice SSID which shall automatically establish the proper SIP Application-Layer Gateways (ALG) and set the highest Quality of Service (QoS) parameter.

7.5.9. An integrated wireless intrusion detection system shall safeguard the network from unauthorized or rogue access points, clients, and other devices that could potentially harm network operations. Please detail how your solution implements this feature.

7.5.10. The wireless intrusion service shall log unauthorized access points and clients, and generate reports about unauthorized activity.

7.5.11. The wireless intrusion service shall use active rogue access point prevention and disable auto-join to prevent malicious access points from associating with the network, thereby ensuring that only authorized access points are permitted to connect.

7.5.12. Operating System (OS) fingerprinting shall gather information about each client connecting to the network to help identify rogue clients, including clients running an OS with known vulnerability that by policy shall not be allowed on the network.
7.6. **Support of High Density User Groups**

7.6.1. **Average Classroom** (Grades 9-12) \(\sim\)900 square feet per classroom – support for 30 student with 3 devices each to include but not limited to: Laptops, Tablets, Other mobile devices, e.g. Smart Phones

7.6.2. **Specialty Room** (Art rooms, Food Labs and Science Labs) \(\sim\)1000 square feet per room – support for 30 student with 3 devices each to include but not limited to: Laptops, Tablets, Other mobile devices, e.g. Smart Phones

7.6.3. Due to the District’s significant investment in Apple iPads. Special consideration shall be made to provide full coverage for lower powered radios in iPads, and other tablet and mobile device hardware platforms.

7.6.4. Lower powered devices are defined as 10mW, single stream 802.11n, single antenna mobile clients.

7.6.5. Bandwidth requirement per device – 9 Mbps per user throughout the coverage area.

7.6.6. Please describe the methodology for providing complete coverage for high density areas including:

7.6.6.1. Auditoriums with 2,500 students

7.6.6.2. Gymnasiums with 2,500 students and parents

7.6.7. Coverage shall be provided to all areas covered by a roof including but not limited to classrooms, portables, cafeterias, gymnasiums, auditoriums, media centers, offices, hallways, labs/shops, and concession stands, in addition to courtyards, atriums and breezeways. Note that these spaces vary in size and density from site to site, see attached building prints for examples.

7.7. **AP Requirements**

7.7.1. Spectrum Analysis Capabilities- solutions that provide analysis of the wireless LAN for quick and effective troubleshooting, compliance auditing and remediation of guest devices, if necessary.

7.7.2. Provide intelligent insight into RF and network level information to enable District technicians to pinpoint the source of potential risks or disruptive performance.

7.7.3. Solutions ensure WLAN applications, such as voice-over-wireless LAN maintains integrity throughout deployment.

7.7.4. Describe the features and functions. Include dedicated radios and/or time slicing in channel, across the spectrum etc.

7.7.5. Automatic registration / provisioning i.e. pull configuration from centralized controllers.

7.7.6. Support survivability mode i.e. in the event they cannot communicate with a controller, without disruption.
7.7.7. For use in areas such as courtyards and atriums the enclosures shall be ruggedized for installation outdoors with a temperature range, -10 or -20F to 110 F, and/or support the use of external antennas.

7.7.8. Describe systems support, if available, for mobile APs i.e. placed on mobile laptop/tablet carts to supplement installed WLAN infrastructure coverage/density.

7.7.9. The proposed access points must be able to provide simultaneous wireless access for various 802.11 based clients including 802.11 a, b, g. Additionally, the higher speed 802.11n and when appropriate 802.11ac technology must maintain air-time priority.

7.7.10. The proposed access points must support WPA-Personal, WPA-enterprise, WPA2-personal & WPA2-enterprise.

7.7.11. The proposed access points must provide a dual 2.4 GHz and 5 GHz radio and support indoor mesh networking along with a best path forwarding algorithm to seamlessly route around failures.

7.7.12. The proposed access points shall offer 802.3 Ethernet bridging on mesh nodes and allow that bridge port to support an 802.1q trunk.

7.7.13. The access points proposed in the solution must be able to power both the 2.4Ghz and 5Ghz radio by standard 802.3af compliant power sources. Discuss how the access points can be powered through standard Category 6 cable and any limitations imposed on your solution by the 802.3af standard.

7.7.14. The proposed access points must include a Stateful Firewall which operates from Layer 2 through Layer 4 and also offer application layer gateway functionality for specific protocols such as SIP, FTP and TFTP.

7.7.15. The access point must provide Denial of Service (DoS) protection at both the MAC layer and at the IP layer.

7.7.16. The solution must allow for access point moves and adds without requiring extensive RF surveys, channel planning, or other administration. Access points shall be technician installable in response to coverage needs. Discuss how your solution facilitates this requirement.

7.7.17. The access point must support a customizable captive web portal to either challenge users to authenticate or force users to self-register to a wireless network.

7.7.18. The solution must efficiently and effectively scale to thousands of access points when fully implemented across all campuses, and all be part of a common coordination effort for mobility, RF management and security policy management. All components of a successful implementation (such as access points, controllers, software licenses, etc.) must be identified and explained. (No cost information is to be included in this description.)
7.7.19. The access points must provide a mechanism for user authentication to the wireless medium, and/or to production networks including both internal and external RADIUS server authentication.

7.7.20. The access point must support user or devices roles and policies that can be dynamically assigned via RADIUS or Directory server. Desired to also have location and time based policies per user or group.

7.7.21. The access point must support data rate limiting of specific applications, users or networks. Please describe how the solution meets this requirement.

7.7.22. The access points must support Quality of Service (QoS) including WMM and be able to classify traffic by network, by service or by MAC OUI and map the QoS packets to the wired network and respective VLAN. Please describe the QoS capabilities at the access point.

7.7.23. While all access points must be capable of being centrally managed and offer plug & play functionality, the operation of the access point must be independent and distributed and not require the management system for ongoing functionality within the network.

7.8. Additional Information

7.8.1. Discuss any additional technical features that you feel will be of benefit to the District.

7.8.2. Provide an overall system schematic beginning with the connection to the District’s network and extending to the access points. Include all intermediate devices necessary to complete this connection and make the system fully operational.

7.8.3. With proposal, Proposer shall provide a radio coverage map for each building to indicate optimal access point locations and antenna locations.

8. Cabling Specifications

8.1. SCOPE OF WORK

8.1.1. Consolidated High School District 230 (CHSD230) is requesting proposals for the installation of a Wireless Structured Cabling System at each of the school facilities within the District for enhanced wireless connectivity. The main scope of work for this project is as follows:

8.1.1.1. Wireless Structured Connectivity System Project Scope (BASE BID):

8.1.1.1.1. The contractor shall be responsible for providing and installing the new wireless data cabling as indicated on the “wireless” drawings for a complete installation.

8.1.1.1.2. The contractor is to furnish and completely install the specified faceplates, jacks, cable, raceway components, and machine printed labeling required for a complete installation.
8.1.1.3. Typical wireless access point drop locations will be comprised of a Plenum Rated Cat-6A 10-Gig UTP cable terminated within a single port surface mount box on a Cat-6A 10-Gig RJ45 jack/module. The contractor is to coil 15’ (feet) of additional cable at each wireless access point drop location for future relocation.

8.1.1.4. Within each wiring room, the Cat-6A 10-Gig, 4-pair UTP cables will be terminated on new 48-port Cat-6A 10-Gig patch panels mounted in existing 19” equipment racks/cabinets.

8.1.1.5. Category-6A 10-Gig Patch Cords shall be provided by the contractor and installed by the others.

8.1.1.6. The contractor is to furnish the labor and materials to install the specified data cable from the wireless access point drop location to the respective wiring room. Cabling will be routed from the wireless access point drop location to the respective wiring room through plenum ceiling spaces. Overhead routing of cable is to be supported within existing Cat-5 J-hooks secured to the structure above. Where existing J-hook pathways do not exist, this contractor shall be responsible for providing and installing new J-hook pathways. New J-hooks shall be installed 4’ on center along the cable path up to the wireless drop location.

8.1.1.7. The contractor shall be responsible to provide and install metal conduit sleeves and firestopping at all penetrations through floor and fire-rated walls where existing data cable pathways do not exist.

8.1.1.8. The contractor is to perform Test and Certification of the newly installed cabling system and is to provide test result documentation certifying that the cabling system meets industry standards. All cables are to be tested with a hand held cable tester having ISO Level IV and TIA Level IIIe accuracy (minimum) for Category 6 / Class E certification. Test reports are to be printed and assembled in binders as well as submitted in native electronic format. Contractor will provide all appropriate software and licensing to allow the Owner to view the electronic form of the test results.

8.1.1.9. The contractor shall furnish to the owner legible record documents which will reflect any changes made to the design during the installation.
8.1.1.10. The contractor shall furnish record documents including computer generated AutoCAD 2011 as-built drawings showing the new wireless drop locations and drop ID labeling.

8.1.1.2. Wireless Structured Connectivity System Project Scope (ALTERNATE #5):

8.1.1.2.1. The Alternate #5 scope of work is requiring that the contractor provide and install an additional Category-6A 10-Gig drop location to each drop location provided for within the base bid scope of work. Refer to the Proposal Form for additional information.

8.1.1.3. Wireless Structured Connectivity System Project Scope (ALTERNATE #6):

8.1.1.3.1. The Alternate #6 scope of work is requiring that the contractor provide and install a Category-6E 1-Gig cabling system in lieu of the base bid Category-6A 10-Gig Solution. Refer to the Proposal Form and the Products Section within this specification for additional information.

8.1.1.4. Wireless Structured Connectivity System Project Scope (ALTERNATE #7):

8.1.1.4.1. The Alternate #7 scope of work is requiring that the contractor provide and install an additional Category-6E 1-Gig drop location to each drop location provided for within the Alternate #6 scope of work. Refer to the Proposal Form for additional information.

8.1.1.5. Intra-Building Fiber Optic Upgrade Project Scope (ALTERNATE #8):

8.1.1.5.1. The Alternate #8 scope of work requires the contractor to provide and install a new Plenum Rated 12-Strand 50-Micron OM3 Multimode fiber optic backbone cabling system between the MDF and IDF wiring rooms for each of the (3) High School locations.

8.1.1.5.2. The contractor is to furnish and completely install the specified fiber optic enclosures, fiber adapter panels, couplers, cable, and machine printed labeling required for a complete installation.

8.1.1.5.3. The contractor is to re-use the existing fiber optic innerduct pathways within the buildings to install the new 50-Micron OM3 Multimode fiber cabling between the MDF and IDF wiring rooms.
8.1.1.5.4. At the completion of the project, the contractor is to remove complete the existing 62.5/125 Multimode fiber optic cabling between each of the MDF and IDF wiring rooms. The existing Single-mode fiber optic cabling system is to remain and is NOT to be removed.

8.1.1.5.5. Within the MDF wiring rooms the contractor is to reuse the existing multimode fiber optic enclosures and replace the existing duplex “SC” fiber adapter panels with new duplex “LC” adapter panels.

8.1.1.5.6. Within the IDF wiring rooms the contractor is to provide and install new 1-RMU fiber enclosures equipped with duplex “LC” adapter panels.

8.2. CONTRACTOR QUALIFICATIONS

8.2.1. The cabling contractor shall be licensed to do business in the State of Illinois.

8.2.2. The contractor is required to be a Hubbell Premise Wiring and Mohawk Cable Certified Installer and have on staff technicians assigned to this project certified by Hubbell/Mohawk for the products being installed.

8.2.3. The contractor shall have worked satisfactorily for a minimum of five (5) years on systems of this type and size.

8.3. STRUCTURED CABLING SYSTEM WARRANTY

8.3.1. This project has been designed based on a Hubbell-Mohawk Structured Connectivity System (SCS) installed by a Hubbell-Mohawk Certified Installer. The completed installation shall receive a numbered Registration Certificate for a Hubbell-Mohawk SCS. Provide any and all registrations from the manufacturers for the installed cabling system.

8.3.2. All additional warranties that may be placed on the installation by the Cabling Contractor due to affiliation with the material vendor are to be noted.

8.3.3. Materials and workmanship hereinafter specified and furnished shall be fully guaranteed by the contractor for a minimum of One (1) year (the Term) from transfer of title against any defects. The contractor at no additional cost to the customer shall correct defects, which may occur as the result of faulty materials or workmanship within the Term after installation and acceptance by the customer. The contractor shall promptly, at no cost to the customer, correct or re-perform (including modifications or additions as necessary) any nonconforming or defective work within the Term after completion of the project of which the work is a part. The contractor’s warranties shall commence with acceptance of/or payment for the work in full.
8.3.4. The contractor shall be a registered business partner of the cabling system being proposed (Hubbell-Mohawk). Additionally, the contractor shall provide through the cabling manufacturer(s) an extended product and application assurance warranty for a minimum of Twenty (25) years that covers the passive components of the system (i.e., cable, and connectivity components that make up the passive data and telecommunications signal transmission infrastructure).

8.4. EMPLOYMENT AND PREVAILING WAGE RATES

8.4.1. The rates of per diem wages including legal holidays and overtime work for all classes of labor required on the project shall be the prevailing union rates in CHSD230, which is located in Cook and Will County, Illinois.

8.4.2. The contractor and/or his subcontractors shall provide certified payroll information regarding any and all employees working on the project.

8.4.3. The contractor’s personnel, associated with the project, shall at all times be above reproach and the district reserves the right to discuss the conduct or performance with the contractor. The contractor agrees to remove any employee as requested by the district if such performance is said not to be in the best interest of the district.

8.4.4. The contractor shall comply with Executive Order 11246 entitled “Equal Employment Opportunity” as amended by Executive Order 11375, and as supplemented in Department of Labor regulations.

8.4.5. Wherever a provision of the specifications conflicts with any agreements or regulations of any kind in force among members of a trade association, unions or councils, which regulate or distinguish what work shall or shall not be included in the work of any particular trade, the contractor shall make all necessary arrangements to reconcile any such conflict without delay, damage or cost to the Owner and without recourse to the Owner.

9. PRODUCTS

9.1. MATERIAL LIST OF MAJOR COMPONENTS

(Additional items may be required as indicated in the design documents and required to provide a complete system)

**STRUCTURED CABLING SYSTEM**

**CABLES:**

9.1.1. WIRELESS ACCESS POINT DROP LOCATION CABLING: Unshielded Twisted Pair (UTP), Category-6A, 10-Gig, 4-Pair, Plenum Rated, 23 AWG. Solid copper. Cable jacket color to be “GREEN” and remain the same throughout the installation.

9.1.1.1. Acceptable Manufacturers: Hubbell

9.1.1.2. Part Number:
9.1.1.2.1. Base Bid: NextSpeed Cat-6A 10-Gig – C6ASPGN (Green in Color)

9.1.1.2.2. Alternate #2: NextSpeed Cat-6E 1-Gig – C6ESPGN (Green in Color)

9.1.1.3. Quantity: As required for a complete installation

9.1.2. FIBER OPTIC BACKBONE CABLE: 12-Strand, 50 Micron OM3 Multimode, Tight Buffered Plenum Rated Fiber Optic Cable Capable of Supporting 10Gb/s applications.

9.1.2.1. Acceptable Manufacturers: Hubbell

9.1.2.2. Part Number: HFC1012P3 (Alternate #4)

9.1.2.3. Quantity: As required for a complete installation

9.1.3. PATCH CORD CABLES: Unshielded Twisted Pair (UTP), Category-6A, 10-Gig, 4-Pair, 23 AWG. Stranded copper. Cable jacket color to be “GREEN” and remain the same throughout the installation.

9.1.3.1. Acceptable Manufacturers: Hubbell

9.1.3.2. Part Number:

9.1.3.2.1. Base Bid:

9.1.3.2.1.1. #HC6AGN03 - Cat-6A 10-Gig 3-Foot Work Area (Green in Color)

9.1.3.2.1.2. #HC6AGN07 - Cat-6A 10-Gig 7-Foot Wiring Room (Green in Color)

9.1.3.2.2. Alternate #2:

9.1.3.2.2.1. #HC6GN03 - Cat-6E 1-Gig 3-Foot Work Area (Green in Color)

9.1.3.2.2.2. #HC6GN07 - Cat-6E 1-Gig 7-Foot Wiring Room (Green in Color)

9.1.3.3. Quantity: As required for a complete installation

FIBER CONNECTORS:

9.1.4. FIBER OPTIC END CONNECTOR ALTERNATE #4: "LC" type 50-Micron OM3 multimode fiber optic end connectors.

9.1.4.1. Acceptable Manufacturers: Hubbell

9.1.4.1.1. Part Number: FCLC900K50GM12

9.1.4.2. Quantity: As required for a complete installation

TERMINATION PANELS:

9.1.5. 48 PORT PATCH PANEL: 19" rack mount, 48-Port unloaded patch panel for terminating wireless data cabling.

9.1.5.1. Acceptable Manufactures: Hubbell

9.1.5.2. Part Number: UDX48U

9.1.5.3. Quantity: As required for a complete installation
9.1.6. **CATEGORY-6A 10-GIG DATA JACK:** Cat-6A data jack for terminating wireless data cabling within 48-Port patch panel.

9.1.6.1. Acceptable Manufacturers: Hubbell

9.1.6.2. Part Number:

9.1.6.2.1. Base Bid: Cat-6A 10-Gig - HJ6AGN (Green in Color)

9.1.6.2.2. Alternate #2: Cat-6E 1-Gig - HXJ6GN (Green in Color)

9.1.6.3. Quantity: As required for a complete installation

9.1.7. **FIBER OPTIC ADAPTER PANEL (MDF WIRING ROOM) ALTERNATE #4:** Duplex "LC" style adapter panel to be mounted within existing MDF wiring room fiber optic termination enclosure for terminating fiber optic backbone cabling.

9.1.7.1. Acceptable Manufacturers: Hubbell

9.1.7.2. Part Number: FSPLCDM6AQ  Duplex LC Adapter Panel (Aqua in Color)

9.1.7.3. Quantity: As required for a complete installation

9.1.8. **FIBER OPTIC TERMINATION SHELF (IDF WIRING ROOM) ALTERNATE #4:** 1-RMU Fiber Optic Termination Enclosure for terminating fiber optic backbone cabling. Mounts to 19” rack with sliding shelf.

9.1.8.1. Acceptable Manufacturers: Hubbell

9.1.8.2. Part Number:

9.1.8.2.1. FPR3SP 1-RMU Enclosure

9.1.8.2.2. FSPLCDM6A Duplex LC Adapter Panel (Aqua in Color)

9.1.8.2.3. FSPB Blank Adapter Panel

9.1.8.3. Quantity: As required for a complete installation

**DROP LOCATION CONFIGURATIONS:**

9.1.9. **WIRELESS ACCESS POINT DROP LOCATION (IN SUSPENDED CEILING)**

9.1.9.1. Acceptable Manufacturers: Hubbell

9.1.9.2. Part Number:

9.1.9.2.1. Base Bid: Cat-6A 10-Gig data jack - HJ6AGN (Green in Color)

9.1.9.2.2. Alternate #2: Cat-6E 1-Gig data jack - HXJ6GN (Green in Color)

9.1.9.2.3. ISB1GY 1-Port Surface Mount Box (Gray in Color)

9.1.9.3. Quantity: As required for a complete installation

9.1.10. **WIRELESS ACCESS POINT DROP LOCATION (SURFACE RACEWAY)**

Refer to Horizontal Pathway Item B below for additional components.
9.1.10.1. Acceptable Manufactures: Hubbell

9.1.10.2. Part Number:
9.1.10.2.1. Base Bid: Cat-6A 10-Gig data jack - HJ6AGN (Green in Color)
9.1.10.2.2. Alternate #2: Cat-6E 1-Gig data jack - HXJ6GN (Green in Color)
9.1.10.2.3. SSFL12 Single Gang 2-Port Faceplate (Stainless Steel)

9.1.10.3. Quantity: As required for a complete installation

**HORIZONTAL/BACKBONE PATHWAY:**

9.1.11. "J" HOOK CABLE MANAGEMENT (Ceiling Area): High performance UTP cable support system.
9.1.11.1. Acceptable Manufacturers: ERICO/CADDY, B-Line
9.1.11.2. Part Number: Erico -CAT3, CAT21; B-Line BCH21, BCH32, BCH64
9.1.11.3. Quantity: As required for a complete installation

9.1.12. SURFACE RACEWAY & ASSOCIATED HARDWARE: Non-Metallic single channel surface raceway. Surface raceway is not to have an adhesive backing. (All items to be office white in color)

Acceptable Manufacturers: Hubbell

9.1.12.1. SINGLE CHANNEL NON-METALLIC SURFACE RACEWAY
9.1.12.1.1. Part Number: PL1BC5
9.1.12.1.2. Quantity: As required for a complete installation

9.1.12.2. SPLICE COVER
9.1.12.2.1. Part Number: PL1SC
9.1.12.2.2. Quantity: As required for a complete installation

9.1.12.3. INTERNAL ELBOW
9.1.12.3.1. Part Number: PL1IEBC
9.1.12.3.2. Quantity: As required for a complete installation

9.1.12.4. EXTERNAL ELBOW
9.1.12.4.1. Part Number: PL1EEBC
9.1.12.4.2. Quantity: As required for a complete installation

9.1.12.5. FLAT ELBOW
9.1.12.5.1. Part Number: PL1FEBC
9.1.12.5.2. Quantity: As required for a complete installation

9.1.12.6. TEE CONNECTION
9.1.12.6.1. Part Number: PL1TCBC
9.1.12.6.2. Quantity: As required for a complete installation

9.1.12.7. CONDUIT ADAPTER/CEILING FITTING
9.1.12.7.1. Part Number: PLP1CACF
9.1.12.7.2. Quantity: As required for a complete installation

9.1.12.8. SINGLE GANG DEEP SURFACE BOX
9.1.12.8.1. Part Number: PDB12D
9.1.12.8.2. Quantity: As required for a complete installation

ADMINISTRATION:

9.1.13. LABELS: Cabling Contractor to furnish and install printed labels, hand written are not acceptable. Lettering to be 3/16" high, bold type. Labels are to be positioned at each end of all the cable jackets, on the workstation drop location faceplates and the patch panel faceplates. Labels are to be made from self-adhesive backed labels, be smear resistant and not easily removed.

9.1.13.1. Acceptable Manufacturers: Panduit or Approved Equivalent
9.1.13.2. Part Number: **
9.1.13.3. Quantity: As required for a complete installation.

9.1.14. MISCELLANEOUS MATERIALS: All miscellaneous materials, supports and associated hardware required for a complete installation of the items listed above are the responsibility of the Cabling Contractor to furnish and install.

9.1.14.1. Acceptable Manufacturers: Materials are to be of the same manufacturer unless not available from the manufacture.
9.1.14.2. Quantity: As required for a complete installation.

10. Structured Cabling System Execution

10.1. MATERIALS AND WORKMANSHIP

10.1.1. The Cabling Contractor shall perform all work required for the completion of the installation in a skillful and craftsman like manner.
10.1.2. All installations are to be made secure, plumb, true, and square.
10.1.3. Materials used for the completion of the installation shall be new, the best of their respective kind, and manufactured for the purpose that they are being used.
10.1.4. There shall be no substitution of the materials listed for installation and/or the expected method of installation without the prior written approval of the OWNER PM.
10.1.5. The installation of all materials and devices shall be in accordance with the latest manufacture's published procedures, specifications, and recommended procedures.
10.1.6. All materials shall be delivered in their original unopened packaging and stored in an enclosed secured area providing adequate protection from damage and/or loss. Damaged or deteriorated materials shall be removed from the building property immediately and replaced at no cost to the OWNER.

10.2. FIRESTOPPING

10.2.1. All interior full height walls (extending from floor slab to underside of floor or roof slab above), exterior walls, floor slabs, roof slabs, stairway enclosures, duct risers and elevator shafts are considered fire barriers. All penetrations through fire barriers must be fire stopped in accordance with the Contract Documents. Through floor penetrations and all penetrations installed within fire barriers shall be fire stopped to the rating of the associated floor and/or wall after the cables and/or sleeves have been installed.

10.2.2. The fire rated material utilized to plug the penetrations that do not require a sleeve and/or the interior of a conduit sleeve shall be an approved fire stopping material. Conduit sleeves shall be caulk/sealed between conduit and cored penetration with an approved firestopping material. Expandable foam shall not be utilized and will not be accepted by the OWNER.

10.2.3. Firestop materials and assemblies shall be independently tested by nationally accepted test agencies and verified to conform to ASTM E 814, Fire Tests of Through-Penetration Firestops and be rated per UL 1479. Firestopping materials shall conform to Flame (F) and Temperature (T) ratings as required by local building code. The F rating must be a minimum of one (1) hour but not less that the fire resistance rating of the assembly or surface being penetrated. When required by code authority, the materials shall carry a “T (hours)” Fire Rating Classification based on the above mentioned standards and shall be based on measurement of the temperature rise on the penetrating item(s). The fire test shall be conducted with a minimum positive pressure differential of 0.01 inches of water column.

10.2.4. Manufacturers of firestopping materials that are considered acceptable, provided they comply with these RFP documents, are among the following:

10.2.4.1. 3M
10.2.4.2. Dow Corning Corporation
10.2.4.3. Hilti, Inc.
10.2.4.4. STI-SpecSeal

10.2.5. Submit Material Safety Data Sheets (MSDS) to the building owner for each firestop product intended to be used.

10.2.6. Submit product data to the building owner for all proposed fire stopping assemblies for review and approval prior to performing any coring.
10.2.7. New and existing raceways, cable trays, and cables for power, data, and communications systems penetrating non-rated and fire-rated floors, walls, and other partitions of building construction shall be firestopped where they penetrate new or existing building construction.

10.2.8. Firestopping shall be accomplished by using a combination of materials and devices, including penetrating raceway, cable tray, or cables, required to make up complete firestop.

10.2.9. Verify that cabling and other penetrating elements and supporting devices have been completely installed and temporary lines and cables have been removed.

10.2.10. Select appropriate type or types of through penetration firestop devices or systems appropriate for each type of communications penetration and base each selection on criteria specified herein.

10.2.11. Selected systems shall not be less than the hourly time delay ratings indicated in the Contract Documents for each respective fire-rated floor, wall, or other partition of building construction. Firestop for each type of communications penetration shall conform to requirements of an independent testing laboratory design drawing or manufacturer's approved modification when used in conjunction with details shown on the Drawings.

10.2.12. Perform all necessary coordination with trades constructing floors, walls, or other partitions of building construction with respect to size and shape of each opening to be constructed and device or system approved for use in each instance.

10.2.13. Coordinate each firestop selection with adjacent Work for dimensional or other interference and for feasibility. In areas accessible to public and other "finished" areas, firestop systems Work shall be selected, installed, and finished to the quality of adjacent surfaces of building construction being penetrated.

10.2.14. Use materials that have no irritating or objectionable odors when firestopping is required in existing buildings and areas that are occupied.

10.2.15. Provide damming materials, plates, wires, restricting collars, and devices necessary for proper installation of firestopping. Remove combustible installation aids after firestopping material has cured.

10.2.16. All firestops shall be installed in accordance with the manufacturer's instructions in order to maintain the specific rating assigned by the independent testing laboratory.

10.2.17. Additional requirements for existing penetrations are as follows:

10.2.17.1. Existing raceways, cable trays, and cabling that penetrate existing building construction shall be firestopped to the extent necessary to fill cavities that may exist between existing building construction and existing communications penetrations or existing conduit sleeve, and between existing conduits and existing conduit sleeve.
10.2.17.2. Assemblies consisting of individual steel hat type restricting collars filled with intumescent type materials that completely surround communications penetration shall be used for nonmetallic raceways and cabling.

10.2.18. If required by inspecting authorities:

10.2.18.1. Expose and remove firestopping to the extent directed by inspecting authority to permit his or her inspection.

10.2.18.2. Reinstall new firestopping and restore Work where removed for inspection.

10.3. LABELS

10.3.1. All cables are to be individually labeled at each end. Labels shall be wrap around, non-smear type so that the print is covered by a clear tape. Labels are to be secured to the cable jacket within 6” and again at 12” from the cable jacket ends for each copper cable.

10.3.2. Labels at the drop location faceplate shall be machine made and placed appropriately. Lettering shall be 3/16" high, bold type. Hand written labels are not acceptable.

10.3.3. Labels at the patch panel shall be self-adhesive type made to secure to a metal surface. Label print to be machine made, 3/16" high, bold type. Hand written labels are not acceptable.

10.3.4. All drop locations shall be labeled.

10.4. PROHIBITED PRODUCTS

10.4.1. Any materials that are considered to be unsafe to life or the environment, such as asbestos, lead paint, etc., are not to be used or installed.

10.5. HOUSE KEEPING

10.5.1. The Cabling Contractor shall take all necessary precautions and provide all necessary protection and enclosures to insure that dust and debris created as a result of the installation does not get out of the work area and into other parts of the building(s). If the cleanup is not acceptable to the OWNER PM, the OWNER will have the option to hire a janitorial firm to properly clean the area and back charge the Cabling Contractor.

10.5.2. The Cabling Contractor shall have on site a portable shop vacuum cleaner capable of cleaning up all debris and dust caused by the installation. All finished surfaces are to be kept clean of any installation debris and dust.

10.5.3. The Cabling Contractor shall, at all times, keep the premises free from the accumulation of waste material and/or rubbish caused by their installation work. All waste material and/or rubbish shall be suitably and legally disposed of by the Cabling Contractor, at their expense, off the building site.
10.5.4. The areas of work are to be cleaned of any and all installation dust and debris at the end of each day's work. Drop cloths are to be used to protect all furniture from damage, and surfaces are to be cleaned to their existing conditions.

10.5.5. The OWNER PM must approve the use of a dumpster on site prior to placement by the Cabling Contractor. The OWNER'S and/or the General Contractor's disposal containers are not to be utilized without authorization from the OWNER PM.

10.5.6. The Cabling Contractor shall provide and maintain suitable barriers to regulate access, to assure public safety and to protect the work in progress.

10.5.7. At the completion of the project, the Cabling Contractor shall: a) Remove all their waste materials and rubbish from and about the installation site; b) Remove all their tools, installation equipment and surplus materials; and c) Leave finished areas free of installation dust and non-finished areas broom clean.

10.6. CABLING STANDARDS AND CODES

10.6.1. All cabling is to be installed according to the latest EIA/TIA-568 and 569 standards and the latest BICSI proposed installation procedures as outlined in Telecommunications Distribution Methods Manual and Telecommunications Cabling Installation Manual.

10.6.2. All work and materials shall be in accordance with the National Electric Code (Latest Edition), Federal, State and local codes and all other bodies having jurisdiction with the installation practice.

10.6.3. The placement and wall mounting of all items requiring servicing, maintenance, and/or observation shall be placed with direct access from the floor without the use of a step, ladder, or the like.

10.7. CABLING SYSTEM INSTALLATION

10.7.1. Receive, check, unload, handle, store, and adequately protect equipment and materials to be installed as part of the contract. Store in areas as directed by the owner's representative. Include delivery, unloading, setting in place, fastening to walls, floors, ceilings, or other structures where required, interconnecting wiring of system components, equipment alignment and adjustment, and other related work whether or not expressly defined herein.

10.7.2. Install materials and equipment in accordance with applicable standards, codes, requirements, and recommendations of national, state, and local authorities having jurisdiction, and National Electrical Code® (NEC) and with manufacturer's printed instructions.

10.7.3. Adhere to manufacturer's published specifications for pulling tension, minimum bend radii, and sidewall pressure when installing cables.
10.7.3.1. Where manufacturer does not provide bending radii information, minimum bending radius shall be 10 times cable diameter. Arrange and mount equipment and materials in a manner acceptable to the engineer and the owner.

10.7.3.2. Contractor is responsible for insuring that the maximum tensile load and or pulling tensions due not exceed that specified by the manufacturer of the cable to be installed and shall include all additional pull boxes, junction boxes, equipment and lubrication for a proper installation.

10.7.3.3. Tie wraps are to be hand tightened on cables or cable bundles and are not to deform the cable jacket or crimp the sheath. Where additional pressure is required to support the cable, kellums or cable grips are to be used.

10.7.4. Penetrations through floor and fire-rated walls shall utilize an approved sleeving method, such as intermediate metallic conduit (IMC) or galvanized rigid conduit (GRC) sleeves. All penetrations shall be firestopped after cable installation and testing, utilizing a firestopping assembly approved for that application.

10.7.5. Install station cabling to the nearest communications closet, unless otherwise noted.

10.7.6. Installation shall conform to the following basic guidelines:

10.7.6.1. Use of approved wire, cable, and wiring devices.

10.7.6.2. Neat and uncluttered wire termination.

10.7.7. Provide overvoltage protection on both ends of cabling exposed to lightning or accidental contact with power conductors as indicated in the specifications or on the drawings.

10.7.8. Contractor shall take care to protect installed cabling and termination hardware from other trade work being performed at the site before and after installation of the outlet face plates.

10.8. CABLE ROUTING AND MANAGEMENT

10.8.1. Primary cable routes are to be coordinated with the OWNER PM for approval prior to installation.

10.8.2. Any portion of the cabling system considered to be exposed to potential damage by the OWNER PM shall be protected utilizing innerduct or some other type of raceway as part of the original contract.

10.8.3. Velcro straps are to be utilized to manage cable within wiring closets and cabinets. Plenum rated plastic cable ties may be utilized to secure cable in plenum areas. Over tightened tie wraps causing cable jacket deformation will not be accepted by the OWNER PM.

10.8.4. All cabling is to be routed parallel to structural walls. Where UTP Category-6 through Category-3 cable is being installed, the UTP data cable lengths are to be kept at two hundred ninety-five (295) feet
(ninety (90) meters) or less. The Cabling Contractor shall notify the OWNER PM, prior to the cable installation, if a UTP data cable could exceed the two hundred ninety-five (295) foot (ninety (90 meters) length. Rerouting the cable will be reviewed. The rerouting of any cable installed that is over the two hundred ninety-five (295) foot (ninety (90 meter) limit and the OWNER PM was not notified will be at the Cabling Contractor’s expense.

10.8.5. The routing of all copper data/voice cable above any accessible ceiling shall be properly managed and independently supported above the ceiling support system. Management rings and/or "J" hooks are to be mounted to the building walls and permanent building structure with suitable attachments and the cables are to be routed within these management devices. The management rings and/or "J" hooks are to be spaced within four (4) feet of each other to prevent cable bundle droop in excess of 8” from parallel between supports. If the cables cannot be kept within the specified droop, additional supports are to be added.

10.8.6. Cabling installed in the wiring room(s) shall be routed on cable runway as indicated on the drawings. In areas of the closet where no cable runway is called for the cabling shall be routed through and secured to D-Rings spaced at no more than 12” apart.

10.8.7. Exposed cabling within the wiring room(s) shall be neatly managed utilizing cable management wall brackets and Velcro straps. The Cabling Contractor shall coordinate the exact location of the brackets with the OWNER PM.

10.8.8. Cable routing shall be such that the cable is not closer than six (6) inches from light fixture ballasts; twelve (12) inches from conduit and cables used for electrical power distribution; and four (4) feet from motors, transformers and/or any other device capable of emitting RF noise and electromagnetic interference.

10.9. CABLE TERMINATION

10.9.1. Unshielded Twisted Pair (UTP) Cable:

10.9.1.1. Minimal cable jacket shall be removed for termination per the manufacturer’s specifications.

10.9.1.2. The twist of each pair shall remain natural to final termination. Person terminating is not to add twist to the pairs after the jacket has been removed. No more than 0.5” of untwist is acceptable for Category 6A or 6 cable.

10.9.1.3. Cabling Contractor shall refer to the manufacture’s recommended procedure for terminating to the connector.

10.9.1.4. Each cable will be supported up to the point of termination through the use of the termination component’s strain relief bars, wire tie eyelets or other mechanisms as recommended by the manufacturer.
10.9.1.5. Dust caps and stuffe caps are to be installed when provided in the standard packaging by the specified manufacturer to aid in protecting and insulating the terminations and contacts

10.9.2. Fiber Optic Cable:

10.9.2.1. “LC” type end connectors are to be used for installation. All connectors are to be of the same type and manufacturer. Refer to the products section of this specification for additional information

10.9.2.2. Cabling Contractor shall refer to the manufacturer’s recommended procedure for terminating the connector.

10.10. CABLE SYSTEM FIELD TESTING

10.10.1. Cables are to be tested after the installation is complete. If for any reason, a drop location raceway and/or faceplate are removed for additional work of any nature, the drop location is to be re-tested if previously tested. All cables associated with the drop location are to be re-tested. The cost of re-testing is the responsibility of the Cabling Contractor.

10.11. CATEGORY-6A & CATEGORY-6 UTP CABLING SYSTEMS FIELD TESTING

10.11.1. General Requirements

10.11.1.1. Every cabling link in the installation shall be tested in accordance with the field test specifications defined in the most recent TIA/EIA 568-B Standard for the type of cabling system being installed (Category-6A / Category-6).

10.11.1.2. The installed twisted-pair horizontal links shall be tested from the termination in the telecommunications room to the telecommunication wall outlet in the work area against the “Permanent Link” performance limits specification as defined in the TIA Cat 6 Standard.

10.11.1.3. 100% of the installed cabling links must be tested and must pass the requirements of the standards mentioned above and as further detailed in this section. Any failing link must be diagnosed and corrected. The corrective action shall be followed with a new test to prove that the corrected link meets the performance requirements. The final and passing result of the tests for all links shall be provided in the test results documentation in accordance with this Section.

10.11.1.4. Trained technicians who have successfully attended an appropriate training program and have obtained a certificate, as proof thereof shall execute the tests. Appropriate training programs include but are not limited to installation certification programs provided by BICSI or the ACP (Association of Cabling Professionals).
10.11.1.5. The test equipment (tester) shall comply with the accuracy requirements for the proposed level III field testers as defined in the TIA Cat 6 Document. The tester including the appropriate interface adapter must meet the specified accuracy requirements. The accuracy requirements for the permanent link test configuration (baseline accuracy plus adapter contribution) are specified in Table B.2 of Annex B of the TIA Cat 6 Standard. (Table B.3 in this TIA document specifies the accuracy requirements for the Channel configuration.)

10.11.1.6. The tester shall be within the calibration period recommended by the vendor in order to achieve the vendor-specified measurement accuracy.

10.11.1.7. The tester interface adapters must be of high quality and the cable shall not show any twisting or kinking resulting from coiling and storing of the tester interface adapters. In order to deliver optimum accuracy, preference is given to a permanent link interface adapter for the tester that can be calibrated to extend the reference plane of the Return Loss measurement to the permanent link interface. The contractor shall provide proof that the interface has been calibrated within the period recommended by the vendor. To ensure that normal handling on the job does not cause measurable Return Loss change, the adapter cord cable shall not be of twisted-pair construction.

10.11.1.8. The Pass or Fail condition for the link-under-test is determined by the results of the required individual tests detailed in this Section. Any Fail or Fail* result yields a Fail for the link-under-test. In order to achieve an overall Pass condition, the results for each individual test parameter must Pass or Pass*.

10.11.1.9. A Pass or Fail result for each parameter is determined by comparing the measured values with the specified test limits for that parameter. The test result of a parameter shall be marked with an asterisk (*) when the result is closer to the test limit than the accuracy of the field tester. The field tester manufacturer must provide documentation as an aid to interpret results marked with asterisks.

10.11.1.10. A representative of the end-user shall be invited to witness field testing. The representative shall be notified of the start date of the testing phase 5 business days before testing commences.
10.11.1.11. A representative of the end-user will select a random sample of 5% of the installed links. The representative (or his authorized delegate) shall test these randomly selected links and the results are to be stored in accordance with the prescriptions in this Section. The results obtained shall be compared to the data provided by the installation contractor. If more than 2% of the sample results differ in terms of the pass/fail determination, the installation contractor under supervision of the end-user representative shall repeat 100% testing and the cost shall be borne by the installation contractor.

10.11.2. Category-6(A) Unshielded Twisted Pair (UTP) Cable Test Parameters:

10.11.2.1. Each UTP Category-6 cable installed shall be tested and a test result printout sheet shall be furnished at the completion of the project.

10.11.2.2. The test shall be performed after the final cable and device termination has been completed and the faceplate installed. The test shall be of the "Basic Link" from completed end to completed end.

10.11.2.3. The test shall be conducted utilizing a scanner that will generate a swept frequency 1-250 megahertz signal on all pairs of the cable. The scanner used shall have TIA Level III accuracy (minimum) for Category 6 / Class E certification and test each pair of the cable for:

10.11.2.3.1. Pair mapping
10.11.2.3.2. Cable length
10.11.2.3.3. Attenuation
10.11.2.3.4. Near-End-Cross Talk (NEXT) in both directions
10.11.2.3.5. Attenuation to Near-End-Cross Talk Ratio (ACR)
10.11.2.3.6. Return Loss (RL)
10.11.2.3.7. Far End Cross Talk (FEXT)
10.11.2.3.8. Power Sum Near-End-Cross Talk (PSNEXT)
10.11.2.3.9. Equal Level Far-End-Cross Talk (ELFEXT)
10.11.2.3.10. Power Sum Equal Level Far-End-Cross Talk (PSELFEXT)
10.11.2.3.11. Propagation Delay
10.11.2.3.12. Delay Skew
10.11.2.3.13. Impedance
10.11.2.3.14. Capacitance
10.11.2.3.15. Loop Resistance
10.11.2.4. Each data cable shall be tested to the latest draft of EIA/TIA-568x, and/or accompanying Technical Service Bulletin for the highest applicable Category compliance for acceptance by the OWNER PM.

10.11.3. Fiber Optic Cable:

Field-test instruments shall have the most current software and firmware installed.

10.11.3.1. Each fiber optic strand shall be tested and a test result printout sheet shall be furnished at the completion of the project.

10.11.3.2. The test shall be performed after the final cable termination has been completed and each strand has been installed in the fiber termination panel coupler. The test shall be of the "Basic Link" from termination panel to termination panel. Patch cables utilized for test equipment connections are not to be figured as part of the "dB" loss.

10.11.3.3. End-to-End attenuation testing using an Optical Loss Test Set, light source and optical power meter, in both directions at the specified wavelengths for each fiber in the backbone system. Multimode fibers shall be tested at 850 nm and 1300 nm in accordance with ANSI/EIA/TIA-526-14A. The test results of each fiber shall be printed out and assembled in a binder for owner review. The test shall indicate at a minimum:

10.11.3.3.1. "dB" loss

10.11.3.4. Acceptable connector loss < 1.5 dB per mated pair, acceptable splice loss < 0.3 dB, acceptable cable loss per manufacturer's calculated maximum dB loss per km.

10.11.3.5. Overall link loss shall not exceed the value required by the OWNER anticipated network electronics requirements. Coordinate this number with the OWNER PM prior to installation and final termination.

11. Customer Service and Warranty

11.1. Please describe the Customer Support Structure, including specific process and procedures. Please include or describe the following, including both product details and cost method (per hour, per day, included with contract, etc.). Also, please indicate the roles of the manufacturer and reseller in each item.

11.1.1. Post-Implementation Support: Provide a minimum of twenty-four (24) hours of onsite support and sixteen hours (16) of remote support following installation and testing for turn-up and post installation issue resolution. Post-implementation support to be scheduled by the Owner PM.
11.1.2. Customer Assistance: support availability, hours, phone or web based, SLA response time, etc


11.1.4. On-site support: Options available, SLA for appearance or resolution, location of nearest support technicians, turnaround on replacement parts.

11.1.5. System Failures: Please describe the process for dealing with failures related to faulty units and system maintenance. What would be expected of District personnel as far as specialized skill required or training for component replacement, etc?

11.1.6. Warranty – The proposal must include a 36-month warranty period for all proposed components – hardware and software. The warranty must include parts and labor for 8x5 business-day on-site replacement and/or repair services for access points and 24x7x4 onsite replacement and/or repair services for controllers and remote trouble-shooting and analysis on all system components. The warranty period will commence at final system Acceptance and extend for 36 consecutive months.

11.1.7. Training: Please describe the model for training of the District staff. Include any restrictions on number of personnel that may receive training. A minimum of eight (8) hours training is required during installation. What additional training is recommended for District staff, either during or following the initial implementation?

11.1.8. Maintenance & Support: Please specify options and requirements for hardware maintenance, software upgrades, and technical support in 3 year and 5 year increments, including any guaranteed pricing models.

11.1.8.1. Assuming acceptance of the system on August 15, 2014, maintenance contracts will terminate on June 30th of the expiration year.

12. Additional Capabilities / Feature Descriptions

Please describe any features or capabilities not delineated above that would be useful for understanding and evaluation. Note any components that have extra costs associated with them. Examples of such features would include add-on monitoring or security software, remote VPN capabilities, etc. All such descriptions shall be based on products that are shipping as of the bid due date.

Is the network management solution capable of working with the District’s current Cisco deployment and management?

Is the system capable of automatically configuring access points, controllers, and switches? Describe the level of control for Cisco switches.
13. **Vendor Responsibilities and Requirements**

The Vendor will be responsible for the installation and configuration of the wireless network, including multiple SSID’s as agreed upon with the District.

The Vendor shall be responsible for on-site configuration and training of the District IT staff for the daily operation aspects, monitoring, management, and maintenance aspects of the system.

The Vendor shall name a project coordinator who shall work with the District’s Project Manager to provide and approve a project schedule. The schedule shall take into account all aspects of the project, including site survey, design, installation, access point installation, location and configuration, and proof of performance testing. When installing the System in a facility with other construction occurring simultaneously, the Vendor shall coordinate with the Construction Project Manager for the District.

The Vendor shall be responsible for preparing a proposal for each building, based on the site survey results. This proposal shall include the following:

13.1. Documentation of the proposed location of access points, and shall include areas that have been identified as locations where high concentrations of wireless devices may be used based on input from the building and district staff.

13.1.1. Wireless site surveys shall include documentation of heat maps for 5 GHz wireless deployment.

13.2. Review any interference or other issues within the building that would affect wireless network performance.

13.3. Review any issues or conditions that may affect the installation, or installation schedule.

13.4. Vendor to review buildings maps and occupancy numbers for common areas such as cafeteria, stadiums, gyms, auditorium, and other high capacity rooms.

13.5. All products, hardware and software, shall be shipping and current as of the bid due date.

**WIRELESS ACCESS POINT INSTALLATION**

13.6. The Vendor shall be responsible for installation of all mounting brackets and wireless access points as specified by owner. Wireless Access Points shall be mounted accordingly and coincide with the designated locations included in this RFP.

13.7. *See cabling specification attached document.*

13.8. The vendor shall:

13.8.1. Properly mount each wireless access point according to conditions specific the school including but not limited to cages and locking cabinets where appropriate.

13.8.2. In classrooms or hallways, ceiling mount is preferred. Alternate mounting to be approved by Owner’s project manager.
13.8.3. In gymnasiums, auditoriums or other high ceiling areas, mounting and antennas specification to be approved by the Owner’s project manager.

13.8.4. Access point located in areas that damage is likely will be protected by protective cages.

13.8.5. Install patch cable in telecommunications closets for wireless access point. Dress patch cable in a neat manner.

13.8.6. Verify connectivity from network switch to wireless access point in conjunction with District’s engineer.

13.8.7. Document data drop and patch panel numbering on as-built drawings for District. Contractor is required to submit "As-Built" computer generated (AutoCAD, Visio or Adobe Acrobat) record drawings, which will reflect the exact location of each wireless access point. The successful Responder will be given an AutoCAD or Adobe Acrobat version of the floor plan with work area outlet locations for its use in developing the record drawings. The Contractor shall submit (1) hardcopy set of the drawings, and an electronic version on CD-ROM at the completion of the project and prior to final acceptance by the Owner.

13.8.8. In addition to as-built drawings, contractor shall submit a spreadsheet in Microsoft Excel-compatible format for all major hardware (controllers, WAPs). The spreadsheet shall contain the following information:

13.8.9. CHSD 230 Asset ID no. (for controllers only if applicable)
13.8.10. Manufacturer
13.8.11. Model No.
13.8.13. MAC Address
13.8.14. Room Location (or room location nearby, if the WAP is located in a corridor)
13.8.15. Data Jack No.
13.8.18. Switch Port No.
13.8.19. Installation Photo
13.8.20. Comment

WIRELESS CONFIGURATIONS

13.9. The wireless deployment will utilize a centralized model with controllers housed at the District Office and Sandburg HS if the District selects a controller based system and network bandwidth and traffic to remote APs do not exceed suggested thresholds.
13.10. Vendor is responsible for the configuration of all required VLANS in conjunction with the District staff to implement the described wireless networks.

13.11. Configuration of multiple SSID’s each with separate VLAN assignment and support, each capable of differing permissions and access controls. District currently deploys 802.1Q for VLAN configuration.

13.11.1. Specify maximum number of SSIDs supported.

13.11.2. All agreed upon and configured SSIDs required shall follow these examples as guidelines:

13.11.2.1. SSID “Staff” – District-owned Windows XP, Vista, Windows 7 computers and various other devices.

13.11.2.1.1. 802.1x with PEAP\EAP-MSCHAPv2 - Protected Extensible Authentication Protocol as the authentication protocol.

13.11.2.1.2. Encryption - (AES) protocols with a minimum key length of 128 bits.

13.11.2.1.3. Enable the broadcast of the SSID

13.11.2.2. SSID “Student” – To provide student access across the District

13.11.2.2.1. 802.1x with PEAP\EAP-MSCHAPv2 - Protected Extensible Authentication Protocol as the authentication protocol.

13.11.2.2.2. Encryption - (AES) protocols with a minimum key length of 128 bits.

13.11.2.2.3. Broadcast the SSID

13.11.2.2.4. Enforce District filtering policies on student access

13.11.2.3. SSID "Guest“ – To provide guest access across the District

13.11.2.3.1. Configure “Guest” as an open wireless connection to the public

13.11.2.3.2. Broadcast the SSID

13.11.2.3.3. Permit outbound traffic destined to the internet via protocols HTTP and HTTPS only

13.11.2.3.4. Deny all other outbound traffic

13.11.2.3.5. Enforce District filtering policies on guest access

13.12. Passwords – Each access point will be configured with a local strong password for local access.

13.13. Authentication – Each access point will be configured to utilize the Microsoft Network Policy Server (NPS) to authenticate users.
13.14. Vendor, in conjunction with the District staff, is responsible for the configuration of the District-provided NPS server housed on an existing internal server. The Microsoft NPS server will provide the authentication for the wireless network and equipment authentication.

13.15. All access points will utilize SSH or HTTPS for configuration access.

13.16. Security Banner - Each access point shall be configured with a security banner that displays when users login to each device.

13.17. Vendor shall work with the District to develop a splash page to inform users that they are using District-provided public Wi-Fi access.

13.18. Vendor shall configure Contractor and guest wireless networks with a network rate limit of 5 Mbps.

SUPPLIED PRODUCTS

13.19. All supplied products for this installation shall be new from vendor or distributor stock. Special order products are to be new and shall be scheduled for delivery and installation to meet the final completion dates stated in this RFP.

13.20. All software and firmware is to be normal, production versions, shipping at time of bid submission. No beta software, custom programming, or promised future enhancements will be accepted.

13.21. Used or damaged products will not be accepted. Removal and replacement of such products will be the Contractor’s responsibility and will be done at no additional cost to the District.

13.22. Equipment and materials of the type, for which there are independent standard testing requirements, listings, and labels, shall be listed and labeled by the independent testing laboratory.

13.23. Where equipment and materials have industry certification, labels, or standards (i.e., NEMA - National Electrical Manufacturers Association), this equipment shall be labeled as certified or complying with standards.

13.24. Material and equipment shall be new, and conform to grade, quality, and standards specified. Equipment and materials of the same type shall be a product of the same manufacturer throughout.

MATERIALS AND WORKMANSHIP

13.25. The Vendor shall perform all work required for the completion of the installation in a skillful and craftsman-like manner.

13.26. All installations are to be made secure, plumb, true, and square. Align all installations with adjacent existing conditions, unless shown otherwise on the drawings, bid documentation, and/or specifications.

13.27. Materials used for the completion of the installation shall be new, the best of their respective kind, and manufactured for the purpose that they are being used.
13.28. There shall be no substitution of the materials listed for installation and/or the expected method of installation without the prior written approval of the District’s project manager. Any changes in materials and/or installation from that shown on the drawings, bid documentation, and general specifications without written approval shall be the responsibility of the Vendor to correct, to the satisfaction and approval of the Project Manager, at no cost to the District.

13.29. The installation of all materials and devices shall be in accordance with the latest manufacturer’s published procedures, specifications, and recommended procedures.

13.30. All materials shall be delivered in their original, unopened packaging and stored in an enclosed, secured area providing adequate protection from damage and/or loss. Damaged or deteriorated materials shall be removed from the building property immediately and replaced at no cost to the District.

**VENDOR COMPLETION CRITERIA**

13.31. Vendor’s work at each location shall be considered complete after the following has been accomplished:

13.31.1. All items listed in the Vendor’s approved proposal have been completed.

13.31.2. All ceiling panels are in place in same or better condition than as originally found.

13.31.3. All Labels are in place.

13.31.4. All construction debris and Materials have been removed.

13.31.5. The District’s Project Manager has inspected all installations and reviewed proof of performance tests and accepted the installation.

13.31.6. The Vendor has provided the District with a formal knowledge exchange, consisting at a minimum of:

13.31.6.1. Complete documentation of all device configurations (may be in electronic form).

13.31.6.2. As-built and spreadsheet documentation of the location of all equipment and access points.

13.31.6.3. A formal presentation providing detailed review items, including installation, configuration, centralized intelligence devices and wireless management system, and address any final questions or concerns by The District’s or building staff.

13.31.6.4. Complete configuration of centralized intelligence device features and documentation; including at a minimum, heat maps, rogue detection, all SSIDs requested, guest provisioning, auto-notification for alarms.
13.32. Milestones that are to be scheduled, as a minimum, are:

13.32.1. Install wireless access points in each school.
13.32.2. Install controllers
13.32.3. Turn up and final testing
13.32.4. Post-implementation documentation
13.32.5. Post-implementation support
13.32.6. Training
13.32.7. Additional coordination with the Owner’s PM is to be performed to insure that work scheduled around the other trade activities does not delay the project.

13.33. Responder / Owner Responsibility - It will be assumed that any task required for a complete and operational wireless connectivity system not specifically stated to be an Owner’s responsibility will be that of the Responder.

13.34. Changes and Discrepancies - Any minor change in the location of a wireless access point location, equipment, etc., from that initially indicated, if directed by the Owner’s PM, prior to the installation of the location, shall be made without charge. A "Minor Change" is defined as "Not adding any degree of difficulty to the original installation requirement".

13.35. Close-out and Final Acceptance

13.35.1. The completed installation shall consist of a wireless connectivity system constructed in strict accordance with the RFP documents and specifications. Any labor, materials and/or equipment which is not indicated in the RFP documentation or specifications herein, but is necessary and/or incidental to completing the entire installation, as shown and intended, must be furnished and installed at no additional cost to the Owner.

13.35.2. At time of completion of the installation, the Contractor shall request, in writing, to the Owner’s PM for a walk through of the installation for the purpose of preparing a final punch list towards acceptance of the installation. Once the items on the final punch list have been corrected by the Contractor, they are to submit another request to review the punch list items and acceptance of the installation.

13.35.3. The Contractor is required to submit "As-Built" computer generated electronic record drawings and spreadsheet.

13.35.4. Prior to final acceptance and payment, the Contractor shall provide the Owner with a warranty certificate and registration for this installation.

13.36. Cleaning - The Contractor shall, daily, at the completion of the work, remove and dispose of all rubbish, surplus materials, equipment, etc., and shall leave the site absolutely clean and in good order to the satisfaction of the Owner.

13.37. Safety - The Contractor is responsible for the safe passage of pedestrian traffic for the duration of the job. Any precautionary measures, necessary warning signs, etc., required to assist the Contractor in the performance of the work shall be at the Contractor's expense and provided for his/her quoted price.
13.38. Material / Equipment Staging

13.38.1. The Responder will be responsible for coordinating the delivery, acceptance, unloading and storage of their materials to the premises with the Owner's PM. The Responder must comply with all building regulations regarding hours, method and location of material delivery.

13.38.2. The Owner will provide, within reason and at its discretion, adequate space for the Responder to store a limited quantity of material and tools, but does not agree to provide space for the entire inventory of material and tools for the project.

13.38.3. Protect equipment during transit, storage, and handling to prevent damage, theft, soiling, and misalignment. Coordinate with the owner for secure storage of equipment and materials. Do not store equipment where conditions fall outside manufacturer's recommendations for environmental conditions. Do not install damaged equipment; remove from site and replace damaged equipment with new equipment.

13.39. Use of Site

13.39.1. Use of the site shall be at the owner's direction in matters in which the owner deems it necessary to place restriction.

13.39.2. Access to building wherein the work is performed shall be as directed by the owner.

13.39.3. Schedule necessary shutdowns of plant services with the owner, and obtain written permission from the owner.

13.39.4. Proceed with the work without interfering with ordinary use of streets, aisles, passages, exits, and operations of the owner.

13.40. Continuity of Services

13.40.1. Take no action that will interfere with or interrupt, existing building services unless previous arrangements have been made with the owner's representative. Arrange the work to minimize shutdown time.

13.40.2. Shall services be inadvertently interrupted, immediately furnish labor, including overtime, material, and equipment necessary for prompt restoration of interrupted service.

13.41. Definitions:

13.41.1. High Gain antennas refer to antennas necessary to project the wireless signal in a horizontal mounting scenario.

13.41.2. Locking enclosures refer to additional external enclosures specifically designed to withstand physical abuse in a school environment.
14. Reference and Experience

14.1. The District seeks Responders who have been shipping and currently have an installed base of customers with wireless connectivity systems addressing similar requirements and of similar size as stated herein.

14.1.1. The District requires that the winning proposer has two engineers certified by the manufacturer to the highest level possible in the proposed products. Please include resumes in your response.

14.2. Provide at least three (5) references of similar installed systems in the using the table provided below – expanding them as necessary to include all relevant information. The references must be for similar size K-12 or higher education customers with similar environments and end users.

14.3. The District would like to see references of at least (1) implementation that was not either unsuccessful or presented difficulties as a comparative reference of possible difficulties in this RFP implementation.

14.4. The District may wish to conduct site visits with one or more of the references provided below. Be advised, references are a major element of the customer’s selection criteria.

14.4.1.

<table>
<thead>
<tr>
<th>Reference (use same format for all references)</th>
<th>Customer Name</th>
<th>Contact Name</th>
<th>Contact Address</th>
<th>Contact Telephone Number</th>
<th>Contact E-mail</th>
<th>Installation Date of Comparative System</th>
<th>Description of Comparative System – please be specific and detailed</th>
</tr>
</thead>
</table>

14.4.2.

<table>
<thead>
<tr>
<th>Reference (use same format for all references)</th>
<th>Customer Name</th>
<th>Contact Name</th>
<th>Contact Address</th>
<th>Contact Telephone Number</th>
<th>Contact E-mail</th>
<th>Installation Date of Comparative System</th>
<th>Description of Comparative System – please be specific and detailed</th>
</tr>
</thead>
</table>
14.4.3.

<table>
<thead>
<tr>
<th>Reference (use same format for all references)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Name</td>
</tr>
<tr>
<td>Contact Name</td>
</tr>
<tr>
<td>Contact Address</td>
</tr>
<tr>
<td>Contact Telephone Number</td>
</tr>
<tr>
<td>Contact E-mail</td>
</tr>
<tr>
<td>Installation Date of Comparative System</td>
</tr>
<tr>
<td>Description of Comparative System – please be specific and detailed</td>
</tr>
</tbody>
</table>

15. PROPOSAL RESPONSE PRICING

15.1. For providing the Scope of Work as stated in the Technical Specifications, and for providing all work as described in the Specifications (inclusive of the drawings) for the installation of the complete Wireless Connectivity System and all associated subsystems as described in the Specifications. Complete pricing tables below.

15.1.1. Attach a detailed Bill of Material for all equipment proposed including make, model, SKU, list price and proposed price for each Alternate.

15.1.2. Please include optional controller based software and pricing as a separate section in the detailed bill of material.

15.2. Vendor is expected to fix all prices at the proposed amounts for the duration of the contract.

15.2.1. The District reserves the right to increase or decrease the quantity of equipment to be purchased under this RFP. Any additional equipment purchased shall be priced at the proposed in the detailed bill of material provided by the Vendor as a part of their proposal.

16. ACKNOWLEDGMENTS

16.1. By submission of this Proposal, the Proposer certifies that:

16.1.1. The supplier has verified prices and the conditions of this Proposal. That this Proposal has been reviewed and accepted by all appropriate parties constituting this offer.

16.1.2. The individual signing this Proposal certifies that he/she is a legal agent of the Proposer and is further authorized to represent the offering and is legally responsible for the decision as to the prices and supporting documentation provided.

16.1.3. The Proposer will pay, and require each subcontractor to pay, not less than the general prevailing rate of hourly wages for work of a similar character in the locality in which the work is performed, and not less than general prevailing rate of hourly wages for legal holidays and overtime work.
17. COMPLETION TIME:

17.1. The Owner will not be responsible to the Contractor for additional costs incurred by the Contractor in meeting guaranteed completion dates for performing the work of the Specifications including work performed on evenings, weekends, or holidays.

17.2. The Contractor is expected to start immediately after receipt of letter of intent from the Owner and will be required to enter into an Agreement with The Owner and/or its agents.

17.3. The Contractor may request, by written notice to the Owner PM, access to the project areas before the normal work day begins and on weekends. The Owner will make a reasonable attempt to grant such access.

17.4. FINAL COMPLETION DATE -

17.4.1. The undersigned agrees to complete all work and resolve any defective or incorrect items identified by the Owner's PM Punch List, on or before **August 8, 2014**.

**Table 17.4.1**

**Base Proposed Pricing – 802.11n**

<table>
<thead>
<tr>
<th>Location</th>
<th>Material</th>
<th>Labor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>District Office</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carl Sandburg High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amos Alonzo Stagg High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victor J. Andrew High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal – WAPs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controllers, Software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warranty – 3 Years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total – All Locations</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 17.4.2
**Alternate#1 Proposed Pricing – 802.11ac**

<table>
<thead>
<tr>
<th>Location</th>
<th>Material</th>
<th>Labor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>District Office</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carl Sandburg High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amos Alonzo Stagg High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victor J. Andrew High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal – WAPs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controllers, Software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warranty – 3 Years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total – All Locations</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 17.4.3
**Alternate #2 Proposed Pricing – 802.11n 5 Year Warranty**

<table>
<thead>
<tr>
<th>Location</th>
<th>Material</th>
<th>Labor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>District Office</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carl Sandburg High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amos Alonzo Stagg High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victor J. Andrew High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal – WAPs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controllers, Software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warranty – 5 Years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total – All Locations</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 17.4.4
**Alternate#3 Proposed Pricing – 802.11ac 5 Year Warranty**

<table>
<thead>
<tr>
<th>Location</th>
<th>Material</th>
<th>Labor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>District Office</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carl Sandburg High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amos Alonzo Stagg High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victor J. Andrew High School</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subtotal – WAPs

<table>
<thead>
<tr>
<th>Controllers, Software</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Warranty – 5 Years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total – All Locations</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 17.4.5
**Alternate#4 – Trade-in Credit**

<table>
<thead>
<tr>
<th>Location</th>
<th>Quantity</th>
<th>Credit Amount</th>
<th>Total Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAPs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cisco 1142</td>
<td></td>
<td>135</td>
<td></td>
</tr>
<tr>
<td>Cisco 3602</td>
<td></td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Controllers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total Credit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17.5. Unit Pricing – N Only

17.5.1. UNIT PRICE "U1" wireless access point – 802.11n: For the sum noted below, the Proposer will furnish and install complete a wireless access point of the same specifications as proposed herein.

17.5.1.1. "U1": $__________________
17.5.2. UNIT PRICE "U2" antenna: For the sum noted below, the Proposer will furnish and install complete an external ceiling mount antenna for wireless access point specified herein.

17.5.2.1. "U2": $______________

17.5.3. UNIT PRICE "U3" antenna: For the sum noted below, the Proposer will furnish and install complete an external high gain antenna for wall mount applications for the wireless access point specified herein.

17.5.3.1. "U3": $______________

17.5.4. UNIT PRICE "U4" antenna: For the sum noted below, the Proposer will furnish and install complete an external enclosed antenna for wireless access point specified herein.

17.5.4.1. "U4": $______________

17.5.5. UNIT PRICE "U5" locking cabinet: For the sum noted below, the Proposer will furnish and install complete a cage or locking cabinet suitable for gymnasium or cafeteria applications.

17.5.5.1. "U5": $______________

17.6. Unit Pricing – AC Only

17.6.1. UNIT PRICE "U6" wireless access point – 802.11ac: For the sum noted below, the Proposer will furnish and install complete a wireless access point of the same specifications as proposed herein.

17.6.1.1. "U6": $______________

17.6.2. UNIT PRICE "U7" antenna: For the sum noted below, the Proposer will furnish and install complete an external ceiling mount antenna for wireless access point specified herein.

17.6.2.1. "U7": $______________

17.6.3. UNIT PRICE "U8" antenna: For the sum noted below, the Proposer will furnish and install complete an external high gain antenna for wall mount applications for the wireless access point specified herein.

17.6.3.1. "U8": $______________

17.6.4. UNIT PRICE "U9" antenna: For the sum noted below, the Proposer will furnish and install complete an external enclosed antenna for wireless access point specified herein.

17.6.4.1. "U9": $______________
17.6.5. UNIT PRICE "U10" locking cabinet: For the sum noted below, the Proposer will furnish and install complete a cage or locking cabinet suitable for gymnasium or cafeteria applications.

17.6.5.1. "U10": $____________________

17.7. Additional Items

17.7.1. Following are item(s) that the Proposer:

17.7.1.1. Considers missing from the design documents and shall be furnished and installed for a complete installation; and/or,

17.7.1.2. Would like to propose as an alternate to the design. The associated cost or credit is shown. An explanation of the addition and/or alternate is required for consideration of either.

17.7.2. Missing items. Attach an explanation for evaluation.

17.7.2.1. "ADD" $____________________
17.7.2.2. "CREDIT" $____________________

17.7.3. Contractor Suggested Alternate to the Design. Attach an explanation for evaluation.

17.7.3.1. "ADD" $____________________
17.7.3.2. "CREDIT" $____________________

17.8. Warranty Acknowledgement

17.8.1. Contractor Warranty

17.8.1.1. Parts - ___________ years
17.8.1.2. Labor - ___________ years

17.8.2. Wireless Connectivity System Manufacturer Warranty

17.8.2.1. Enclose sample copy of warranty certificate
17.8.2.2. Enclose copy of WIRELESS System Manufacturer Value Added Reseller Authorization or Certified Installer Certification

18. BONDING

18.1. The undersigned agrees to furnish herewith, as required in the Terms and Conditions, a 100% labor and Materials Performance Bond.

18.1.1. Proposer to indicate the name of the surety company to furnish the bond:
18.1.1.1. Surety Company ____________________________
18.1.1.2. Performance Bond Amount ____________________
            Dollars ($__________________)

19. **PROPOSAL RESPONSE PRICING (BASE BID CAT-6A 10-Gig):**

19.1. For the installation of the complete **Wireless Structured Connectivity System**.

(Carl Sandburg, Stagg and Andrew High Schools. One Cat-6A 10-Gig cable to each wireless drop location):

19.1.1.1. Material ________________________________
            Dollars ($__________________)

19.1.1.2. Labor ________________________________
            Dollars ($__________________)

19.1.1.3. Bonds ________________________________
            Dollars ($__________________)

19.1.1.4. Tax         NOT APPLICABLE
            Dollars ($ N/A)

19.1.1.5. Total ________________________________
            Dollars ($__________________)

19.1.2. **Attach a detailed price breakdown and material list to support the above price.**

19.1.3. To assist the owner in evaluating quotes, tracking progress of the job, and determining validity of pay requests please fill in the summary values for each subsystem in the following table:

20. **STRUCTURED CABBING SYSTEM ALTERNATE PRICING**

20.1. ALTERNATE #5

20.1.1. The Owner is requesting alternate pricing for adding an additional Category-6A 1-Gig drop location (horizontal cable, work area jack, work area surface mount box, patch panel and jack, associated patch cords) to each area where a base bid drop location is being installed.

20.1.1.1. Adjustment to Base Sum Price (Add):

20.1.1.1.1. Carl Sandburg Total ____________________
            Dollars ($__________________)

20.1.1.1.2. Stagg Total ______________________________
            Dollars ($__________________)

20.1.1.1.3. Andrew Total ____________________________
            Dollars ($__________________)
20.2. ALTERNATE #6

20.2.1. The Owner is requesting alternate pricing for substituting the base-bid wireless data cabling system installation from a Plenum Category-6A 10-Gig Solution to that of a Plenum Category-6E 1-Gig solution.

20.2.1.1. Adjustment to Base Sum Price (Credit):

20.2.1.1.1. Total ____________________
Dollars ($ ____________________)

20.3. ALTERNATE #7

20.3.1. The Owner is requesting alternate pricing for adding an additional Category-6E 1-Gig drop location (horizontal cable, work area jack, work area surface mount box, patch panel and jack, associated patch cords) to each area where an Alternate #2 drop location is being installed.

20.3.1.1. Adjustment to Alternate #2 Price (Add):

20.3.1.1.1. Carl Sandburg Total ______________
Dollars ($ ________________)

20.3.1.1.2. Stagg Total ________________
Dollars ($ ________________)

20.3.1.1.3. Andrew Total ______________
Dollars ($ ________________)

20.4. ALTERNATE #8

20.4.1. The Owner is requesting alternate pricing for installing a 12-Strand 50-Micron OM3 Multimode fiber optic cabling system between the MDF and IDF wiring rooms at each of the (3) high school locations. The new fiber optic cabling is to be installed within existing innerduct pathways. At the completion of the project, the contractor is to remove complete the existing 62.5/125 Multimode fiber optic cabling between each of the MDF and IDF wiring rooms.

20.4.1.1. Adjustment to Base Sum Price (Add):

20.4.1.1.1. Carl Sandburg Total ______________
Dollars ($ ________________)

20.4.1.1.2. Stagg Total ________________
Dollars ($ ________________)

20.4.1.1.3. Andrew Total ______________
Dollars ($ ________________)
## Carl Sandburg - Wireless Structured Connectivity System

<table>
<thead>
<tr>
<th>Carl Sandburg High School</th>
<th>Detailed Pricing Ref.</th>
<th>Material Costs ($)</th>
<th>Labor Costs ($)</th>
<th>Subtotal ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat-6A 10-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Cable Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Bid Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cat-6A 10-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Cables Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #1a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cat-6E 1-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Cable Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cat-6E 1-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Cable Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #3a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-Micron Multimode Fiber</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #4a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Stagg - Wireless Structured Connectivity System

<table>
<thead>
<tr>
<th>Stagg High School</th>
<th>Detailed Pricing Ref.</th>
<th>Material Costs ($)</th>
<th>Labor Costs ($)</th>
<th>Subtotal ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat-6A 10-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Cable Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Bid Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cat-6A 10-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Cables Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #1b</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cat-6E 1-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Cable Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cat-6E 1-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Cable Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #3b</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-Micron Multimode Fiber</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #4b</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## STRUCTURED CABLE SYSTEM - UNIT PRICING

21.1. UNIT PRICE "U1" (Typical Wireless Access Point Drop Location): For the sum noted below, the contractor will furnish and install complete a drop location with the following assumptions:

21.1.1. One specified Category-6A 10-Gig, 4-pair UTP data cable terminated on an RJ45 Category-6A 10-Gig Jack;
21.1.2. Cable waste and misc. materials;
21.1.3. The data cable fully terminated on the specified panel and tested;
21.1.4. There is space available within the required patch panel for the termination of the cables in the wiring closet;
21.1.5. The project is not complete and the cabling contractor is on site.
21.1.6. Assume an average length of 225’

21.1.6.1. **"U1" Category-6A 10-Gig:** $ ________________

21.1.6.2. **"U1A" Category-6E 1-Gig:** $ ________________

<table>
<thead>
<tr>
<th>Andrew High School</th>
<th>Detailed Pricing Ref.</th>
<th>Material Costs ($)</th>
<th>Labor Costs ($)</th>
<th>Subtotal ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat-6A 10-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Cable Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Bid Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cat-6A 10-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Cables Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #1c</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cat-6E 1-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Cable Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cat-6E 1-Gig System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Cable Per Drop Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #3c</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-Micron Multimode Fiber</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate #4c</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
22. WARRANTY ACKNOWLEDGEMENT – STRUCTURED CONNECTIVITY SYSTEM

22.1. CONTRACTOR WARRANTY:
   
   22.1.1. Parts - _______ years
   22.1.2. Labor - _______ years

22.2. STRUCTURED CONNECTIVITY SYSTEM MANUFACTURER WARRANTY (Hubbell-Mohawk):
   
   22.2.1. Parts - _______ years
   22.2.2. Labor - _______ years
   22.2.3. Applications - _______ years
   22.2.4. Enclose sample copy of warranty certificate
   22.2.5. Enclose copy of Cabling System Manufacturer Value Added Reseller Authorization or Certified Installer Certification

22.3. Subcontractors
   
   22.3.1. List all Subcontractors required to complete this project along with the portion of the project they will be responsible for:
   
   22.3.1.1. Subcontractor #1
      
   22.3.1.1.1. Company Name: ________________________
   22.3.1.1.2. Company Address: ________________________
   22.3.1.1.3. Portion of work to be performed by this Subcontractor: __________

   22.3.1.2. Subcontractor #2
      
   22.3.1.2.1. Company Name: ________________________
   22.3.1.2.2. Company Address: ________________________
   22.3.1.2.3. Portion of work to be performed by this Subcontractor: __________

   22.3.1.3. Subcontractor #3
      
   22.3.1.3.1. Company Name: ________________________
   22.3.1.3.2. Company Address: ________________________
   22.3.1.3.3. Portion of work to be performed by this Subcontractor: __________
23. **ACKNOWLEDGMENT OF RECEIPT OF ANY ISSUED ADDENDA**

23.1. The following Addenda to the Specifications have been received and have been considered in response to this Request for Proposal.

23.1.1. Date: __________

23.1.2. Date: __________

23.1.3. Date: __________

23.2. The successful Proposer will bear the burden of any and all undisclosed costs.

23.3. Authorization

23.3.1. Signature of Authorized Company Representative:

23.3.1.1. Name of Authorized Rep. - (Typed): __________________

23.3.1.2. Signature: __________________

23.3.1.3. Date: __________

23.3.1.4. Employer Identification Number: __________________

23.3.1.5. Company Name: __________________

23.3.1.6. Street Address: __________________

23.3.1.7. City, State, Zip: __________________

23.3.2. Notarization:

23.3.2.1. My being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

23.3.2.2. Subscribed and sworn before me this ____ day of , 20__

23.3.2.3. Notary Public:

23.3.2.3.1. (Signature) __________________

23.3.2.3.2. (Printed Name) __________________

23.3.2.3.3. My Commission expires: __________________

(Notary Seal)

24. **General Instructions to Bidders**

24.1. General

24.1.1. Bid shall be submitted in a sealed envelope properly marked with the title of the bid, date and time of opening.

24.1.2. Bids must be delivered on or before the time scheduled for the bid opening.

24.1.3. All bids shall be made on proper form.

24.1.4. Unsigned or late bids will not be considered.
24.1.5. Consolidated High School District 230 is not subject to Federal Excise Tax or Illinois Retailers Occupational Tax.

24.1.6. Prices quoted shall include all charges for packing, transportation and delivery to the locations designated on the bid.

24.1.7. Correspondence shall be addressed to the Purchasing Agent.

24.1.8. Bids are available for inspection in the business office by appointment after the award of orders.

24.1.9. Oral, telephone, electronic or facsimile transmitted bids will not be accepted.

24.1.10. All items bid shall be new unless otherwise specified.

24.2. Errors and Omissions - All proposals shall be submitted with each space properly completed. The special attention of bidders is directed to the policy that no claim for relief because of errors or omissions in the bidding will be considered, and bidders will be held strictly to the proposals as submitted. Should bidders find any discrepancies in, or omissions from, any of the documents, or be in doubt as to their meanings, they shall advise the purchasing agent who will issue the necessary clarifications to all prospective bidders by means of addenda.

24.3. Firm Bid – All bids will be considered to be firm for a period of ninety (90) days from the date established for the opening of bids.

24.4. Withdrawal of Bids – Bids may be withdrawn by letter, facsimile or in person within 48 hours prior to the time and date established for the opening of the bids.

24.5. Investigation of Bidders

24.5.1. The bidder shall furnish such information as may be requested to determine the ability of the bidder to fulfill bid requirements and shall be prepared to show completed installations of equipment, types of service or supplies similar to those included in the bid.

24.5.2. The Board of Education reserves the right to reject any bid if it is determined that the bidder is not properly qualified to carry out the obligations of the contract.

24.6. Reservation of Rights By the Institution - The Board of Education reserves the right to reject any or all bids, to waive irregularities and to accept that bid which is considered to be in the best interest of the institution. Any such decision shall be considered final.

24.7. Compliance with Legislation - It shall be mandatory upon the contractor(s) to whom the contract is awarded and upon any subcontractor thereof to pay to all laborers, workmen and mechanics employed by them not less than the general prevailing rate of wages in the locality for each craft or type of workman or mechanic needed to perform such work and the general prevailing rate for legal holiday and overtime work as ascertained by the Illinois Department of Labor. Bidders are required to increase wages as necessary during the term of this contract so as to keep current with prevailing wage rates. No changes will be allowed in the amount of this contract as additional compensation for such changes.
24.8. Signature Constitutes Acceptance – The signing of these bid forms shall be construed as acceptance of all provisions contained herein.

24.9. Contracts – The successful bidder will be required to enter into a contract incorporating the terms and conditions of this bid.

24.10. Equal Employment Opportunity

24.10.1. The contractor will not discriminate against any employee or applicant for employment for any unlawful reason, including age, race, creed, color, sex, national origin or unfavorable discharge from military and will take affirmative action to ensure that employees are treated equally during employment. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

24.10.2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contract of, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, sex, nation of origin, unfavorable discharge from the military or any other unlawful reason.

24.10.3. The contractor will furnish all information and reports required Executive Order No. 11246 of September 24, 1965, and by the rules, regulations and orders of the Secretary of Labor, or pursuant thereto and will permit access to his/her books, records and account by the contracting agency and the Secretary of Labor for purposes of investigation, to ascertain compliance with such rules, regulations and orders.

24.10.4. In the event of the contractor’s noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further government contracts or federally assisted construction contract, in accordance with the procedures authorized in Executive Order of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, by rule, regulation or order of the Secretary of Labor, or as otherwise provided by Law.

24.10.5. The contractor shall include the provisions of paragraphs a through b in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Sec. 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor shall take such action with respect to any subcontractor or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for non compliance, provided, however, that in the event the contractor
becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interest of the United States.

24.11. Evaluations - The Board of Education reserves the right to reject any and all bids, to waive any technicalities in the bidding and to award each item to different bidders or all items to a single bidder unless otherwise noted on bid request, and to determine whether in the opinion of the Board of Education: (1) an equal or alternate is a satisfactory substitute, (2) an early delivery date is entitled to more consideration than price, (3) an earlier delivery date is to be disregarded because of the reputation of the bidder for not meeting delivery dates, (4) a bidder is not a responsible bidder and shall be disregarded and (5) what exceptions or deviations from written specifications will be accepted. The Board of Education will authorize the release of purchase orders upon acceptance of bids. In the event of pricing errors, the unit count(s) listed will prevail and be considered accurate.

24.12. Examination of Documents And Site - Before submitting a proposal for work on any project, each bidder shall carefully examine the project site and the contract documents, fully inform themselves of existing conditions and limitations of the project sites, rely entirely upon their own judgment in making the proposal, and include in their proposal all sums sufficient to provide all work required by the contract documents. After opening of bid, no additional allowance will be made for changes in project scope and/or price due to work that would have been apparent by examination of the documents and sites. By submitting a proposal, each bidder shall be held to represent that they have made the examination in complete detail and has determined beyond doubt that the documents and existing conditions are sufficient, adequate and satisfactory for completion of the work.

24.13. Performance Labor and Material Payment Bonds

24.13.1. Within ten days of the date of the Notice of Award, the successful contractor shall sign a formal contract with the Board of Education and shall provide a Performance Bond and a Labor and Material Payment bond, each in the full amount of the contract. The bonds shall be in accordance with A.I.A. Document A311. The contractor shall pay the cost of premiums for said bonds. The bonds shall be signed and sealed by an authorized representative of the bonding company and authorized officer or representative of the contractor, and a certificate of the authority of those signing the bonds, if not officers, shall be attached thereto.

24.13.2. The Performance Bond and the Labor and Material Payment Bond shall guarantee the performance of the duties placed on the contractor by the Prevailing Wage Act, as well as all other duties undertaken pursuant to the contract with the Board of Education, and shall indemnify the Board of Education from any liability or loss resulting to the Board of Education from any failure of the contractor fully to perform each or all of said duties. The Contractor and Subcontractors will not commence work under the Contract until all required insurance bonds have been obtained and approved by the Owner.

24.14.1. A Bid Bond or certified check made payable to the institution in the amount of ten percent (10%) of the proposal shall accompany each bid as a guarantee that the bidder, if awarded the contract, will furnish the required Performance and Labor and Material Payment bonds, execute the contract and proceed with the work. Upon failure to do so, the contractor shall forfeit the check or amount of bid bonds as liquidated damages. No mistakes or errors on the part of the bidder shall excuse the bidder or entitle them to a return of the check or bid bond. No bidder may withdraw a bid for a period of 60 days after the date of opening thereof.

24.14.2. The bid bonds or checks will, with the exception of those of the three lowest bidders, be returned seven days after the opening of bids and the remaining checks or bid bonds will be returned when the contract is executed and bonds provided.

24.15. DELIVERY POINTS - Deliveries shall be made to the following addresses ONLY when “specific” locations are indicated in the bid SPECIFICATIONS.

High Schools

Carl Sandburg Central High School  
13300 S. La Grange Road  
Orland Park, IL 60462

Amos Alonzo Stagg High School  
8015 W. 111th Street  
Palos Hills, IL 60465

Victor J. Andrew High School  
9001 W. 171st Street  
Tinley Park, IL 60487

Other Locations

Administrative Center  
15100 S. 94th Avenue  
Orland Park, IL 60462

24.16. INSURANCE - The contractor shall provide and maintain insurance in the amounts outlined below with companies acceptable to the institution.

24.16.1. Worker's Compensation Insurance


24.16.1.2. Coverage B - Employer's Liability $500,000 Limit

24.16.2. Automobile Liability Insurance: $1,000,000 combined single limit per occurrence for bodily injury and property damage and include coverage for all owned, non-owned and hired automobiles.

24.16.3. Comprehensive General Liability Insurance Provide the following limits:

24.16.3.1. Bodily Injury/Property Damage
24.16.3.1.1. $1,000,000 each occurrence
24.16.3.1.2. $1,000,000 in the aggregate
24.16.3.1.3. The policy shall include the following coverage
   24.16.3.1.3.1. Premises/Operations
   24.16.3.1.3.2. Independent Contractors
   24.16.3.1.3.3. Products/Completed Operations
   24.16.3.1.3.4. Contractual Liability Blanket
   24.16.3.1.3.5. Broad Form Property Damage
   24.16.3.1.3.6. Personal Injury-Offenses A,B,C, exclusion C deleted
24.16.3.1.4. Contractual Liability coverage, including the "indemnification of Institution and Architect" (hold harmless agreement), must by fully insured under this policy for the liability limits set forth above. In addition, care, custody, and control and XCU exclusions shall be removed from all policies under this contract and suitable coverage provided subject to the approval of the school institution's insurance counselor.
24.16.3.1.5. The contractor is responsible for all claims arising out of sales of products on the premises and injury and/or death caused by the vendor's delivery vehicles on and immediately adjacent to the premises.

24.16.4. Umbrella Liability Insurance
24.16.4.1. It is required that an umbrella policy by written for minimum of $2,000,000 for bodily injury and property damage. This umbrella policy would be in excess of the limits of the primary policy outlined above.
24.16.4.2. All such insurance shall not be cancelable without thirty (30) days prior written notice being given to the institution.
24.16.4.3. With respect to the insurance required herein, the contractor shall provide such insurance naming the institution, the Board of Education and its members individually, and its employees and agents as "additional named insured." The contractor shall also purchase and maintain such insurance as will protect the institution from and against all claims, damages, loss, and expenses, including attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense, (1) is attributable to bodily injury to or destruction of tangible property (other than the work itself), including the loss of use resulting therefrom, and (2) is caused in whole or in part by a negligent act or omission of the contractor, subcontractor, anyone directly or indirectly employed by any of them or
anyone for whose acts they may be liable, regardless of whether or not it is caused in part by a party to whom insurance is afforded pursuant to this paragraph.

24.16.4.4. It is MANDATORY within ten (10) days after the bid award that the Certificate(s) of Insurance shall be submitted to the insurance agent for the institution.

24.17. Total Price For All Items Bid - A total bid dollar amount, regardless of whether or not the bidder is bidding all items, must be entered in the appropriate section of the bid form before signing and submitting the bid.

24.18. Hold Harmless and Indemnification

24.18.1. The contractor shall assume all liability for, and shall protect, defend, indemnify and hold harmless, the Board of Education and its members individually, their officers, employees, servants and agents, from and against all claims, actions suits, judgments, costs, losses, expenses and liabilities of whatsoever kind or nature including reasonable legal fees incurred by owner arising out of:

24.18.1.1. Any infringement (actual or claimed) of any patents, copyrights or trade names by reason of any work performed or to be performed by the contractor under this contract or by reason of anything to be supplied by the contractor pursuant to this contract.

24.18.1.2. Bodily injury, including death, to any person or persons (including contractor's officers, employees, agents and servants) or damage to or destruction of any property, including the loss of use thereof:

24.18.1.2.1. Caused in whole or in part by an act, error or omissions by the contractor or any subcontractor or anyone directly or indirectly employed by any of them regardless of whether or not it is caused in part by a party to be indemnified hereunder.

24.18.1.2.2. Arising directly or indirectly out of the presence of any person in or about any part of the project site or the streets, sidewalks and property adjacent thereto.

24.18.1.2.3. Arising directly or indirectly out of the use, misuse or failure of any machinery or equipment used directly or indirectly in the performance of this contract.

24.19. Late Bids - Bids received after the time specified in the Invitation to Bid will not be considered. The method of transmittal of the bid proposal is at the bidder’s risk of untimely receipt by the institution. The use of institution equipment for transmission of bids is prohibited.

24.20. Child Sex Offender and Murderer Community Notification Act

24.20.1. Any vendor or contractor is prohibited from bringing to any school building or school property any employee or agent who is a child sex offender or murderer as defined in the child sex offender and murderer community notification law. At least quarterly, the
The contractor shall contact the local law enforcement authority where each employee or agent resides to determine if the employee is on the list of registered felons who have committed child sex offenses or murder. The contractor shall also provide the district with the name and address of each employee who will perform work on school property and require that the employee submit to a criminal history background investigation.

24.20.2. Any person hired by the district, as well as any person who is an employee of a person or firm holding a contract with the district and who works in a school building or on school property, shall submit to a criminal history background investigation according to state law and district Policy 5:30, hiring process and criteria.
NON-COLLUSION AFFIDAVIT
(must be signed, notarized and submitted with bid)

STATE OF ILLINOIS

SS:

_________________________COUNTY

(Name of county)

The undersigned bidder or agent, being duly sworn, on oath says that he/she has not, nor has any other member, representative, nor agent of the firm, company, corporation or partnership represented by him/her, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting, nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

_________________________

Bidder or Agent

FOR __________________________

Firm or Corporation

Subscribed and sworn to before me this _______day of ________________, 201__

My commission expires:_________________________

Notary Public
CERTIFICATION  
(must be signed and submitted with bid)  
The bidder hereby certifies that the bidder is not barred from bidding on this contract as a result of a violation of either the bid-rigging or bid-rotating provisions of Article 33E of the Criminal Code of 1961, as amended.

______________________________
Signature

SEXUAL HARASSMENT CLAUSE  
(must be signed and submitted with bid)  
Each bidder must certify that it has complied with the requirement of section 2-105 of the Illinois Human Rights Act (Public Act 87-1257) effective July 1, 1993, with respect to sexual harassment policies. The terms of that law, as applicable, are hereby incorporated into this contract. The Board of Education states that it is in compliance with said law.

______________________________
Signature

CERTIFICATE OF COMPLIANCE WITH ILLINOIS DRUG-FREE WORKPLACE ACT  
(must be signed and submitted with bid)  
The undersigned bidder or agent, having 25 or more employees, does hereby certify pursuant to section 3 of the Illinois Drug-Free Workplace Act (Ill. Rev. Stat., ch. 127, par. 132.313) that (he, she, it) shall provide a drug-free workplace for all employees engaged in the performance of work under the contract by complying with the requirements of the Illinois Drug-Free Workplace Act and, further certifies that, (he, she, it) is not ineligible for award of this contract by reason of debarment for a violation of the Illinois Drug-Free Workplace Act.

______________________________
VENDOR DESIGNATION
(must be signed and submitted with bid)

In order to comply with subsection C of Section 10-20.40 of the Illinois School code [105 ILCS 5/10-20.40] added by P.A. 95-707, school districts are required to disclose vendors with whom we have entered a contract or purchased goods in the amount of equal to or greater than $25,000.00. In addition, school districts are required to specify which of the vendors are owned by a person with disabilities, female, minority and/or locally owned.

Please indicate any of the following that apply to your business.

___ Owned by a Person with Disabilities
___ Female Owned
___ Minority Owned
___ Locally Owned (within School District 203 boundaries)
___ None of the Above

__________________________________________
Signature