

Ross School

Telecommunications Request for Proposal (RFP)

April 29, 2005

Proposals are Due:

Wednesday, June 17 2005 at 12PM

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1 Executive Summary

Ross School is an independent day school serving approximately 300 students, grades 4 through 12. The education of these students is supported through the efforts of approximately 120 faculty and staff.

In December 2005, the lease for the School's Avaya Definity G3r switch expires. Arrangements have been made to continue the School's internet service (terminating July 17, 2005) and long-distance agreements (terminating June 2005) on a month-to-month basis so that they may be considered to co-terminate with the Definity's lease.

With the expiration of the lease and service contracts, the School is now seeking to accomplish the following goals:

- Ensure a cost effective telecommunications solution, reducing current costs
- Consolidate all voice and data services for simplified billing and management, and to leverage the purchasing power of the School
- Provide a unified platform for on-campus communications

The current telecommunications system uses digital telephone sets for voice communications and is equipped with several analog lines for fax services and some data lines for alarm reporting and building HVAC control. The switch also supports a limited number of wireless handsets for Café staff and a limited number of IP telephones which were deployed to provide telephone service to class and seminar rooms that were not originally wired for telephone service. Finally, the current system also supports an integrated loudspeaker paging system which is accessed and controlled through the telephone switch.

The current switch is operating at approximately 40% capacity. It is anticipated the School may experience growth over the next three to five years that will be supported through the current buildings and infrastructure with remodeling or by restructuring spaces. The increase in student population may result in an employee growth of up to 10% and an increase of 12 classroom spaces.

The following is the anticipated procurement timetable for this RFP:

Milestone	Date
Release RFP to Vendors	April 29, 2005
Letter of Intent Due	May 13, 2005, by 5:00PM
Site Visit	May 18, 2005, 1:00PM – 3:30PM
Vendor Questions (if any) Due	May 25, 2005, 5:00PM
Answers to RFP Questions Released	June 1, 2005
Proposal Responses Due	June 17, 2005, 12:00PM
Apparently Successful Vendor(s) Announced	July 15, 2005
Contract Negotiations Complete	TBD
Contract Signed	TBD
Work Begins	TBD
Project Complete	December 2005

The requirements of this RFP cover general areas, interconnectivity services, and support. In summary, these requirements are:

- General
 - o Non-obsolescence and equipment upgrade planning
 - o Service level agreements
 - o Business continuity
 - o Management reporting tools
- Interconnectivity
 - o Provide integrated voice/data/video capabilities
 - o Maintain existing infrastructures
 - o Provide interface between telephone system and trunked campus radio system
 - o Provide integrated PBX voice switching system
 - o Support integrated campus-wide paging system
 - o IP telephones
 - o Emergency preparedness
 - o E-911 compliance
 - o Support Class of Service (COS) and Class of Restriction (COR) designations
 - o Provide internet connectivity
 - o Provide bandwidth management tools
 - o Provide call accounting system
 - o Ensure least cost routing
 - o Provide choices of compatible telephone sets
 - o Provide integrated voice mail system with multiple auto-attendant capabilities
 - o Provide voice and data security solutions
- Support
 - o Provide system management training
 - o Provide system management tools
 - o End user training classes and materials
 - o Provide on-site, second level maintenance

The School recognizes that Voice over IP (VoIP) is shaping the future of the telecommunications landscape. VoIP should be proposed beyond the requirements of the RFP if and where it strategically makes sense: where it can both enhance the proposed solution's ability to meet the School's technical and financial requirements.

2 Background and Project Goals

Ross School is an independent day school serving approximately 300 students, grades 4 through 12. The students' education is supported through the efforts of approximately 120 faculty and staff. The campus consists of six buildings all located at 18 Goodfriend Drive, East Hampton, New York (approximately 100 miles east of New York City, on Long Island). There is an office annex located at the end of Goodfriend Drive for our Facilities department which is tied into the School's telecommunications and network infrastructure. Associated with Ross School is Ross Institute, a not for profit organization located at 560 Broadway in New York City. There are 16 persons employed at the institute offices. While the Institute has its own infrastructure, it relies on School resources for email messaging, and financial and development applications through an encrypted broadband internet connection.

In December 2005, the lease for the School's Avaya Definity G3r switch expires. Arrangements have been made to continue the School's internet service (terminating July 17, 2005) and long-distance agreements (terminating June 2005) on a month-to-month basis so that they may be considered to co-terminate with the Definity's lease.

With the expiration of the lease and service contracts, the School is now seeking to accomplish the following goals:

- Ensure a cost effective telecommunications solution, reducing current costs
- Consolidate all voice and data services for simplified billing and management, and to leverage the purchasing power of the School
- Provide a unified platform for on-campus communications

3 Current Environment

3.1 Telecommunications

The current telecommunications system uses digital telephone sets (DS) for normal voice communications on campus. The system, (an Avaya Definity G3r Enterprise switch with three expansion chassis), is also equipped with several analog line equivalent cards (Avaya TN793) to provide fax services to campus offices and some data communications for central station alarm reporting and building HVAC control. Deployed digital telephone sets normally include Avaya model 64XX series and Avaya model 8410 telephones whose distribution is determined by location, job function and responsibilities. **Appendix C** indicates the current switch configuration.

The switch also supports a limited number of wireless handsets for certain members of the Café staff who require communications accessibility while away from their offices; Avaya 9031 DCP TransTalks provide this short-range wireless capabilities. A limited number of IP telephones (Avaya 4612) have been deployed in certain campus locations to provide telephone service to class and seminar rooms that were not originally wired for telephone service.

Console functions are accomplished using two Avaya 302C attendant consoles. One console is located at the receptionist/switchboard operator located in the Center for Well-Being and the other console is used only as back-up.

An integrated loudspeaker paging system is accessed and controlled through the telephone switch. Individual buildings are addressed using dialed feature codes. The

loudspeaker paging system is also used by the campus bell system for pre-recorded announcements and to signal the class schedule. The bell system is based on a network audio device server/remote system.

Trunking is accomplished with three PRI circuits and several smaller analog trunks. A block of DID numbers (631.907.5000 through 631.907.5999) is reserved for the School's use. See **Appendix E** for trunking information and usage.

3.2 Network

3.2.1 Physical layer

Ross School's physical network consists of 7 buildings connected via underground fiber runs. All fiber terminates in the High School building at a core Cisco 4006 switch.

Within the buildings, the access layer for workstations consists of 100 Mb CAT5 cabling patched into 10/100 or 100Mb Intel switching hubs.

The network closets at the access layer are connected to the distribution layer via fiber as well.

3.2.2 Logical Design

The School's network, in general, follows the classic Cisco three-layered hierarchical approach to network design, consisting of a central core, a distribution layer and an access layer. The main difference between Cisco's view and the existing network at the School is that the majority of devices in the distribution layer are unmanageable devices, rather than intelligent Layer 3 devices. This dramatically affects the functionality that is available at the distribution layer.

3.2.3 Layers

With a broad brushstroke, the network could be described as follows:

- **Core Layer:**
 - o The High School building houses a core Cisco 4006 switch which manages connectivity to all other buildings and the DMZ via fiber connections.
- **Distribution Layer:**
 - o The distribution layer of the network is a bit more difficult to define. Each building currently has a managed Cisco 3550 switch that is connected via fiber back to the core 4006 switch. From this 3550 switch, dozens of access layer switches tier off each other and are distributed to different network closets in each building.
 - o Additionally, in certain buildings, the 3550 switch serves as an access layer for the servers in that building.
 - o The 3550 switches were deployed in summer 2004 as part of a VLAN implementation, segmenting off each building as a separate VLAN within the School network.

- o At the distribution layer, the School also has a Cisco VPN 3000 concentrator and a Cisco 3640 router that serves as the network gateway. Beyond that, a DMZ is created off a PIX 515 firewall, and a Cisco 3640 serves as the edge router and the main entry/exit point for the School network.
- **Access Layer:**
 - o All 100 Mb access layer connections are managed by Intel switches. “Switches” in this context refer to a somewhat more advanced hub, rather than a true layer 3 switch with routing, VLAN segmentation, and QoS functionality. They serve simply to limit broadcast domains and to provide access ports.

See **Appendix F** for a detailed network equipment list.

4 Anticipated Growth

As the information in the Appendixes shows, our current PBX is operating at approximately 40% capacity. Although the School has plans to grow its student population over the next three to five years, it is anticipated this growth will be supported through the current buildings and infrastructure with remodeling or by restructuring spaces. The increased student population may result in an employee growth of up to 10% and in increase of 12 classroom spaces.

5 Proposal Submission Requirements

5.1 Contracting Office

Upon release of this RFP, all Vendor communications concerning the overall RFP should be directed to the following coordinators:

ADMINISTRATIVE	TECHNICAL
Ms. Amber Diehl <i>Director Information Technology/CTO</i> Ross School Ross Institute 18 Goodfriend Drive East Hampton, NY 11937 adiehl@ross.org , adiehl@rossinstitute.org office: 631-907-5174 fax: 631-329-4806 mobile: 631-745-3655	Mr. Sy Abramowitz <i>A/V and Telecommunications Manager</i> Ross School 18 Goodfriend Drive East Hampton, NY 11937 sabramowitz@ross.org office: 631-907-5305 fax: 631-329-4810 mobile: 516-901-8778

5.2 Procurement Timetable

The procurement schedule for this project is as follows:

Milestone	Date
Release RFP to Vendors	April 29, 2005
Letter of Intent Due	May 13, 2005, by 5:00PM
Site Visit	May 18, 2005, 1:00PM – 3:30PM
Vendor Questions (if any) Due	May 25, 2005, 5:00PM
Answers to RFP Questions Released	June 1, 2005
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Apparently Successful Vendor(s) Announced	July 15, 2005
Contract Negotiations Complete	TBD
Contract Signed	TBD
Work Begins	TBD
Project Complete	December 2005

NOTE: Ross School reserves the right to adjust this schedule as necessary.

5.3 Letter of Intent

Vendors wishing to submit proposals are required to provide a written letter of intent to propose. **The RFP Administrative Contact must receive this letter no later than the date and time specified above.** Letters sent via facsimile will be accepted. The letter must be submitted on the Vendor's letterhead and identify the name, address, phone, fax number, and e-mail address of the single person who will serve as the key contact for all correspondence regarding this RFP. Most correspondence for this RFP will be sent via e-mail.

Submission of the letter of intent to propose constitutes the Vendor's acceptance of the procedures, evaluation criteria, and all administrative functions of the RFP. Letters may be withdrawn at any time before the deadline for submission.

A listing of all Vendors submitting a letter of intent will be available upon request.

5.4 Site Visit

Vendors may visit Ross School on the scheduled site visit date. Vendors will be guided around the campus, enabling them to review, in person, the infrastructure and equipment described within the RFP.

Vendors who decide to participate in the tour must indicate their intent to attend via e-mail. The e-mail should be sent to the RFP Administrative contact 48 hours in advance of the scheduled visit date. The e-mail should clearly state the Vendor's company name and the names of the individuals attending. No more than two persons per Vendor may attend.

5.5 Submission of Questions

Vendors who request clarification of the RFP requirements may submit written questions to the Administrative RFP Coordinator by the date and time as indicated in the Procurement Timetable. Written copies of all questions and answers will be provided to all Vendors who have submitted letters of intent.

5.6 Submission of Proposals

IT IS IMPORTANT THAT ALL BIDDERS READ THIS SECTION CAREFULLY. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN YOUR PROPOSAL BEING REMOVED FROM CONSIDERATION BY THE SCHOOL.

Format: Vendors must prepare proposals using a word processor and electronic versions of the forms provided in the requirements section of this RFP.

Due Date: Proposals must arrive at Ross School no later than June 17, 2005, 12:00PM. Late proposals will not be accepted nor will additional time be granted to any Vendor. All proposals and accompanying documentation will become the property of Ross School and will not be returned.

Copies: A total of 8 paper copies (6 bound and 2 unbound) and an electronic copy of the Vendor's proposal, in its entirety, must be received as specified above. The School will not accept facsimile.

Address for Submission: Ross School, Attn: Telecommunications RFP, 18 Goodfriend Drive, East Hampton, NY 11937

5.7 Submission Format of Vendor Proposals

All proposals **MUST** be submitted in two sections as specified below:

The **first section** must include a summary of the firm's qualifications to fulfill the solution proposed in response to the RFP. To provide the summary, Vendors should complete the forms provided in **Appendix A** and include the completed forms as part of their proposal. The following forms are included:

- Cover Letter
- Proposal Summary
- Acceptance of Terms and Conditions
- General Vendor Information
- Project Staff List
- Key Project Staff Background Information
- Customer References
- Project Schedule and Workplan
- Payment Terms and Conditions
- Estimated/Actually Monthly Recurring Charges
- Work Samples

The **second section** must have the following three parts:

- *Part 1* – The Vendor should provide a narrative technical summary of the proposed solution.
- *Part 2* – The Vendor should complete the summary table (as provided in **Appendix B**) showing whether or not each requirement stipulated in the RFP has as been met.
- *Part 3* – The Vendor should provide a detailed technical response to each requirement set forth in this RFP.

Optionally, the second section may also include a fourth part to attach any additional documentation, background, specifications, schematics, etc. which support the proposed solution.

5.8 Proposal Review Process

The Administrative and Technical RFP Coordinators and other staff will evaluate the submitted proposals.

Evaluators will consider how well the Vendor's proposed solution meets the needs of the School based on the Vendor's response to each requirement. It is important that the responses be clear and complete so that the evaluators can adequately understand all aspects of the proposal. The evaluation process is not designed to award the contract to the lowest cost Vendor. Rather, it is intended to award the contract to the Vendor with the best combination of attributes, including price, based on the evaluation factors.

5.9 Award/Rejection of Proposals

The School reserves the right to make an award without further discussion of the proposal submitted. **Therefore, the proposal should be initially submitted on the most favorable terms the Vendors can offer.** It is understood that the proposal will become part of the official file on this matter without obligation by the School.

The general conditions and specifications of the RFP and the successful Vendor's response, as amended by agreements between the School and the Vendor, will become part of the contract documents. Additionally, the School will verify Vendor representations that appear in the proposal. Failure of the Vendor's products to meet the mandatory specifications may result in elimination of the Vendor from competition or in contract cancellation or termination.

The Vendor selected as the apparently successful Vendor will be expected to enter into contract with the School.

If the Vendor fails to sign the contract within five (5) business days of delivery of the final contract, the School may elect to cancel the award and award the contract to the next-highest-ranked Vendor.

No cost chargeable to the proposed contract may be incurred before receipt of a fully executed contract.

5.10 RFP Governance

5.10.1 RFP Amendments

The School reserves the right to change the schedule or issue amendments to the RFP at any time. The School also reserves the right to cancel or reissue the RFP.

5.10.2 Vendor's Cost to Develop Proposal

Costs for developing proposals in response to the RFP are entirely the obligation of the Vendor and shall not be chargeable in any manner to the School.

5.10.3 Withdrawal of Proposals

Proposals may be withdrawn at any time prior to the submission time specified in this RFP, provided notification is received in writing. Proposals cannot be changed or withdrawn after the time designated for receipt.

5.10.4 Rejection of Proposals – Waiver of Informalities or Irregularities

The School reserves the right to reject any or all proposals, to waive any minor informalities or irregularities contained in any proposal, and to accept any proposal deemed to be in the best interests of the School.

5.10.5 Proposal Validity Period

Submission of the proposal will signify the Vendor's agreement that its proposal and the content thereof are valid for 180 days following the submission deadline and will become part of the contract that is negotiated between the School and the successful Vendor.

5.11 Sales Tax

The School is a not-for-profit, non taxable institution. A certificate of tax exemption will be furnished upon request.

5.12 Insurance

The School will require the selected Vendor to comply with the insurance requirements as outlined below:

The Vendor shall procure and maintain for the duration of this Agreement insurance against claims for injuries or damages to property which may arise from or in connection with the performance of the work hereunder by the Vendor, his agents, representatives, employees, or subcontractor(s). The cost of such insurance shall be paid by the Vendor. Insurance shall meet or exceed the following unless otherwise approved by the School.

A. Minimum Scope of Insurance

1. Broad Form Comprehensive General Liability
2. Automobile Liability, for activities involving other than incidental personal auto usage.
3. Workers' Compensation coverage as required by the Industrial Insurance Laws of the State of New York.
4. Consultants' Errors and Omissions or Professional Liability applying to all professional activities performed under the contract.

B. Minimum Levels of Insurance

1. Comprehensive or Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage.
2. Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage.
3. Workers' Compensation coverage as required by the Industrial Insurance laws of the State of New York.
4. Consultant's Errors and Omissions or Professional Liability: \$1,000,000 per occurrence and as an annual aggregate.

C. Deductibles and Self-Insurance Retentions

Any deductibles or self-insurance retentions must be declared to and approved by the School. In the event the deductibles or self-insured retentions are not acceptable to the School, the School reserves the right to negotiate with the Vendor for changes in coverage deductibles or self-insurance retentions; or alternatively, require the Vendor to provide evidence of other security guaranteeing payment of losses and related investigations, claim administration and defense expenses.

D. Other Provisions

Wherever possible, the policies are to contain, or be endorsed to contain, the following provisions:

1. General or Commercial Liability and Automobile Liability Coverages
 - i. The School, its officials, employees and volunteers are to be covered as additional insureds as respects: liability arising out of activities performed by or on behalf of the Vendor; products and completed operations of the Vendor; premises owned, leased or used by the Vendor; or automobiles owned, leased hired or borrowed by the Vendor. The coverage shall contain no special limitations on the scope of protection afforded to the School, its officials, employees, or volunteers.
 - ii. The Vendor's insurance shall be primary insurance as respects the School, its officials, employees and volunteers. Any insurance or self-

- insurance maintained by the School, its employees or volunteers shall be excess of the Vendor's insurance and shall not contribute with it.
- iii. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the School, its officials, employees or volunteers.
 - iv. Coverage shall state that the Vendor's insurance shall apply separately to each insured against whom claim is made or suite is brought, except with respect to the limits of the insurer's liability.

2. All Coverages

Each insurance policy required by this clause shall state that coverage shall not be canceled by either party except after thirty (30) days prior written notice has been given to the School.

E. Acceptability of Insurance

Insurance is to be placed with insurers with a current Bests' rating of A:XII, or with an insurer acceptable to the School.

F. Verification of Coverage

Vendor shall furnish the School with certificates of insurance affecting coverage required by this clause. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf and shall name the School as an "additional insured" except for coverages identified in A.4. above. The certificates are to be received and approved by the School before work commences. The School reserves the right to require complete, certified copies of all required insurance policies at any time.

G. Subcontractor(s)

Vendor shall include all subcontractor(s) as insureds under its policies or shall require subcontractor(s) to provide their own coverage. All coverages for subcontractor(s) shall be subject to all the requirements stated herein.

5.13 Equal Opportunity Compliance

The School is an equal opportunity employer and requires all Vendor to comply with policies and regulations concerning equal opportunity.

The Vendor, in the performance of this Agreement, agrees not to discriminate in its employment because of the employee's or applicant's race, religion, national origin, ancestry, sex, age, or physical handicap.

5.14 Other Compliance Requirements

In addition to nondiscrimination and affirmative action compliance requirements previously listed, the Vendor awarded a contract shall comply with federal, state and local laws, statutes, and ordinances relative to the execution of the work. This requirement includes, but is not limited to, protection of public and employee safety and health; environmental protection; waste reduction and recycling; the protection of natural resources; permits; fees; taxes; and similar subjects.

5.15 Ownership of Documents

Any reports, studies, conclusions, and summaries prepared by the Vendor shall become the property of the School.

5.16 Confidentiality of Information

All information and data furnished to the Vendor by the School, and all other documents to which the Vendor's employees or subcontractor(s) have access during the term of the contract, shall be treated as confidential to the School. Any oral or written disclosure to unauthorized individuals is prohibited.

5.17 Hold Harmless

The Vendor shall hold harmless, defend, and indemnify the School and the School's officers, agents, and employees against any liability that may be imposed upon them by reason of the Vendor's failure to provide workers' compensation coverage or liability coverage.

5.18 Assignment

Any contract assignment must be approved in advance by the School. Once approved, the executed contract assignment agreement must be transmitted to the RFP Administrative Contact for approval.

Contract assignment agreements must include the following elements:

- The original vendor must assign all rights and responsibilities to the new vendor and the new vendor must accept.
- Both vendors must sign and their signatures must be acknowledged.
- The contract assignment agreement must indicate an effective date of the transaction.
- If the contract payments are to be allocated among vendors, the payment terms should be explicitly stated in the contract assignment agreement.
- The contract assignment agreement must state that all other terms and conditions in the original agreement remain unchanged.
- The contract assignment agreement must state that the new vendor accepts all conditions and provisions of the RFP.
- The contract assignment must be signed by a School-authorized signatory.

The contract assignment agreement should be sent to the RFP Administrative Contact. It should include the new vendor's name and Federal ID number and supporting documentation explaining the change and that there are no known liens against this contract or vendor and no reason to believe there may be any in the future unless the new vendor has agreed to be responsible for them.

A contract assignment template may be furnished upon request.

6 Requirements

The purpose of this RFP is twofold: 1) collapse the School's local, long distance, and internet services into a single managed solution, preferably through one service provider, and 2) evaluate a new PBX system versus maintaining the current Avaya PBX and implement the solution deemed most advantageous to the school.

6.1 General

6.1.1 Non-obsolescence and equipment upgrade planning

The Vendor shall keep hardware and software at levels supported by manufacturers and will replace or upgrade equipment as required to meet agreed Service Level Agreements (SLAs) and other requirements of this Agreement.

Additionally, as hardware and software upgrades and maintenance are available from their respective Vendors, the Vendor is to notify the School and coordinate implementation of the upgrades and maintenance. The Vendor is responsible for identifying the maintenance requirements of hardware and software to keep them at the manufacturers' current levels and releases and report to the School the status.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** how you will implement upgrades to ensure the School that its telecommunications infrastructure, systems, and service will be kept to levels require to meet SLA agreements and other requirements of the Contract while ensuring the most cost effective approach.

6.1.2 Service Level Agreement (SLA)

The proposed solution shall ensure 99.999% up-time for interconnectivity services if the integrated voice, data, and video services are provided through a single provider or multiple providers.

All hardware and software support agreements must ensure no more than a 4 hour response time for recovery from a service outage.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** in detail how your solution will ensure the stipulated up-time. Please indicate all single points of failure and proposed mitigation strategies. Please include a copy of or describe in detail parts or software replacement agreements.

6.1.3 Business Continuity

The proposed solution shall provide for business continuity services should a catastrophic event occur whereby the telecommunications switch and/or its associated equipment housed in the telecommunications server room be damaged/destroyed for any reason.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** in detail how you can ensure business continuity for the School. Please be sure to state specifically any services that would not be covered in the plan, additional costs (such as cabling, specialized equipment, etc.) that would be required, along with anticipated time to deploy the solution and limitation of term.

6.1.4 Management Reporting Tools

The proposed solution shall provide on-demand reporting tools which enable IT Management access to management/decision statistics such as, but not limited to: peak usage statistics tracking by month, day, hour; switch utilization; top ten users/stations; top ten users/stations toll tracking.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** in detail the exact reports, specifying their exact elements, the manner in which they are obtained. It is strongly recommended that Vendors provide example reports.

6.2 Interconnectivity Services

6.2.1 Provide integrated voice/data/video capabilities

The proposal shall include suggestions, plans and methods to integrate the present voice/data requirements and future video use into a comprehensive communications network. The proposal will outline a plan for integration if the immediate integration is not possible or economically feasible at the time of installation.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** in detail the plans and proposals you will deliver to provide the School with a comprehensive communications network. Information is to include the proposed system manufacturer(s) and model number(s), configuration of the proposed system, all proposed options for the system and relevant sales brochures and manufacturer's web site addresses. The description will include diagrams, maps and other data to indicate the proposed integration of the communication system and any diagrams, maps or other data for an outline plan of future implementation.

6.2.2 Maintain existing infrastructures

The Ross School has made a substantial investment in telephone and data infrastructure (see Appendix C) and wants to continue their use in the new integration plan. Both infrastructures, (voice and data being separate) use copper and fiber interconnects with copper telephone interconnects being primarily CAT-3 cable and CAT-5 used for the data network.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** how your proposed system will use the existing fiber optic and copper infrastructures. Include in your description, details and diagrams outlining the interconnections between the existing infrastructures and your proposed system and any additional hardware required for the proposed system. Identify hardware manufacturers and any software publishers proposed and include model numbers and sales brochures.

6.2.3 Provide interface between telephone system and trunked campus radio system

The Ross School campus is equipped with a Motorola trunked radio system equipped with Trident TNT100 controllers (software revision 1.8). Handset radios used are Motorola HT1250. The proposal will include methods to integrate radio handhelds and Trident controllers with the telephone communications system.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** the proposed interface between the campus phone system and trunked radio system. Your description should include details of any required hardware, software and controller software upgrades. A detail is to be provided describing what telephone functionalities will be included in the radio interface. Information concerning equipment/software manufacturer and model numbers will be provided along with available brochures and manufacturer's URLs.

6.2.4 Provide integrated PBX voice switching system

The proposed system shall have the capabilities of a Private Branch Exchange. This includes the ability to route many extensions over a defined number of external phone trunks, be able to route, transfer, hold and conference incoming calls and have console functions at specific work stations.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** the proposed telephone PBX system. Your description will include proposed hardware and software solutions necessary to implement the PBX system, any programming required for implementation and choices of console sets. Provide manufacturer and model number details plus sales brochures and manufacturer URLs.

6.2.5 Support integrated campus-wide paging system

To maintain the functionality of the campus wide loudspeaker paging system, the proposed system will interface with the installed paging amplifiers (primarily Lucent Page-Pak and Bogen PA). The paging system will be addressable through dialed access (feature) codes using individual telephone stations

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** how the proposed system will interface with the integrated campus-wide paging system. Your description should include any hardware interfaces and/or software and programming necessary to address the public address system and selectively access each or all buildings. Include any hardware manufacturer and model number information, sales brochures and web site URLs. Paging that uses built-in telephone set speakers is not acceptable.

6.2.6 IP telephones

As mentioned in section 3.1, the current environment includes support for several (up to twelve) Avaya 4612 IP telephones. The telephones are installed in class/seminar rooms not originally configured with hard wire telephone connections. Our campus buildings have comprehensive CAT-5 cabling and having the ability to place a limited number of telephones in areas using the campus network infrastructure has shown to be a desirable feature. Without converting to a completely VoIP system, the School would like to maintain the current ability to use the campus network to support a limited number of IP phones.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** in detail the hardware necessary to continue the limited IP telephone capability in the proposed system. Include in your description all circuit boards/upgrades, IP telephone sets required and any additional software/licenses.

6.2.7 Emergency preparedness

To ensure proper parent notification in case of a local or regional emergency, the proposed system will be able to operate using battery back-up to provide an up-time of at least one hour.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** in detail the hardware and/or software proposed to meet the emergency up-time requirement. Include in your description any special handling, housing or monitoring requirements for the proposed back-up system. Include hardware manufacturers name and model numbers, the publishers of any proposed software together with relevant brochures and URLs.

6.2.8 E-911 Compliance

The proposed system will be in compliance with all present regulations concerning 911 notifications and be easily upgradeable to comply with foreseen future requirements. Enhanced 911 capabilities include the ability to provide Public Service Answer Points (PSAP) with building/room locations and provide multiple notifications of the 911 call.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** in detail how your proposed system will comply (or more than comply) with current E-911 requirements. The description will include examples of telephone set location data, local, multiple 911 notifications and upgrade paths for foreseen future enhancements. Include any proposed hardware manufacturers/software publishers names, model numbers, brochures and URLs.

6.2.9 Support Class of Service (COS) and Class of Restriction (COR) designations

The proposed system shall have the ability to establish and manage Class of Service (COS) capabilities per station. These capabilities will include the ability to enable or disable certain functions such as "Forwarding Off Network", Trunk to Trunk Transfers, etc.

The proposed system shall also have the ability to establish and manage Class of Restriction (COR) capabilities on stations and individual authorized users. Class of Restrictions can be used to deter certain dialing capabilities for individual stations and users (including international/long distance dialing, etc).

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** the proposed systems capabilities for supporting the Class of Service and Class of Restriction services. Include in your description details of the COS and COR system capabilities and examples of system management programming to implement and monitor these capabilities. Include any hardware manufacturer's name and model numbers, software publisher and titles of any programs necessary to implement COR/COS. Include brochures and URLs.

6.2.10 Provide internet connectivity

The Ross School's current internet data connectivity is based on a T1 connection. The proposed integrated system shall provide no less than an equivalent T1 connection in bandwidth with an increase in connection speed being desirable. The proposal should also address the possibility of the connection being burstable with higher levels of bandwidth available on demand.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** in detail the proposed data connection including the bandwidth proposed and whether the connection is burstable on demand.

Include in your description all hardware required and its location/interfacing requirements.

6.2.11 Provide bandwidth management tools

For the purposes of monitoring and controlling the efficient use of bandwidth resources, the proposal shall outline hardware and software tools for generating bandwidth usage reports and methods for prioritizing integrated bandwidth usage for the highest efficiency.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** the proposed tools for bandwidth management. Include interfacing requirements, examples of reports generated and programming examples. Include manufacturers names and model numbers, relevant sales brochures and URLs.

6.2.12 Provide Call Accounting System

The proposed system shall provide reports for determining the efficient usage of the system and to point out problems/abuse that may be occurring. A method of authorization (access codes/PINs) will be required. Reports generated shall include at least details of extension and account use, trunk utilization, call volume, number of calls by extension and account.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** in detail the proposed system for call accounting and access authorization. Include examples of reports available detailing usage by trunk/station and authorization code. Include descriptions of programming examples for system set-up and day-to-day management. Include manufacturer and software publisher names and model numbers and provide brochures and URLs.

6.2.13 Ensure least cost routing

The proposed system shall include options for insuring least-cost-routing using internal or external means

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** the proposed methods for selecting least-cost routing. The description should include methods for programmed route selection utilizing defined criteria and implemented either as a hardware or software solution. Include names and models of hardware/software manufacturers, relevant sales brochures and URLs.

6.2.14 Provide choices of compatible telephone sets

The proposed system shall include choices of compatible telephone sets that can be selected according to individual Ross users' requirements and job functions. The

proposed telephone sets will be digital display type telephones with a selection of display size and number of function programmable buttons, including wireless handsets.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) In Section 2, Part 3, **DESCRIBE** in detail the description, colors available and features for the telephone sets proposed. The proposal shall provide a choice of telephone sets. Include details for consoles, digital telephone sets (DS) and wireless digital sets that interface to the proposed system. Provide manufacturer name and models, all relevant sales brochures and appropriate URLs.

6.2.15 Provide integrated voice mail system with multiple auto-attendant capabilities

Included with the proposed telephone system will be an integrated voice mail capability. This system will allow multiple, nested auto-attendants that will be able to be programmed locally using a management system. The proposal should also offer Compatible Unified Messaging systems as choices/options (Note: current email messaging system is Microsoft Exchange 2003).

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) Section 2, Part 3, **DESCRIBE** in detail the proposed voice mail system. Include in your description specific hardware and software requirements to set-up and manage a voice mail system. Define memory, disk requirements and procurement for any outboard servers required. Your proposal for the voice mail solution should include options/choice/alternatives for implementing a unified messaging system. Include programming examples and/or descriptions of auto-attendant set-up, usage and capabilities. Provide manufacturer names and model numbers, sales brochures and relevant URLs.

6.2.16 Provide voice and data security solutions

The proposed system will include methods to ensure, recognize and report telephone abuses such as toll-fraud and out of pattern dialing habits. The proposed data system will be able to recognize system abuses such as hijacked servers, denial of service attacks, etc.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) Section 2, Part 3, **DESCRIBE** in detail what methods are being proposed that will ensure, recognize and report security problems in the communications system upon their implementation. Please state and/or provide examples of reports, alarms and other notifications that will be provided by the proposed communications security system. Provide manufacturer names and model numbers, software publishers name and product name, relevant sales brochures and URLs.

6.3 Support

6.3.1 Provide system management training

The proposed system will include onsite, hands-on training for managing the system. Managing the system will be understood to include the programming of telephone stations, individual and station authorization procedures, managing call accounting systems, voice mail account and system set-up and defining auto attendants and other tasks as needed.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) Section 2, Part 3, **DESCRIBE** in detail the system management training. Include the number of training hours proposed and the depth of training in the description. Identify if the system management training will be given by Vendor personnel or manufacturer's representatives.

6.3.2 Provide system management tools

The proposed system will include software tools and whatever hardware required to manage the system both at the telephone switch and remotely through dial-up and/or LAN connections.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) Section 2, Part 3, **DESCRIBE** in detail the management tools for the proposed system. Include software titles and provisions for updating software management tools in the description. Indicate any training on the system management tools to be given.

6.3.3 End user training classes and materials

The proposed system will include onsite training and training materials for system users.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) Section 2, Part 3, **DESCRIBE** in detail the proposed user training and provide examples of any user training materials to be distributed. Indicate if the training will be provided by Vendor or manufacturer personnel.

6.3.4 Provide on-site, second level maintenance

The proposed system shall include remote, dial-in maintenance where feasible and onsite repair services. Onsite emergency repair response time shall be within four working hours.

- a) Will you meet this requirement? If so, state **YES** in the summary table in Section 2, Part 2.
- b) Section 2, Part 3. **DESCRIBE** how the proposed maintenance support will be implemented and what response time is anticipated. Since parts replacement is an important part of maintaining system up-time, indicate the availability of replacement parts for the proposed system including the expected time for delivery of ordered parts.

7 Emerging Technologies – VoIP

Clearly Voice over IP (VoIP) is shaping the future of the telecommunications landscape. The School is interested in more fully exploring VoIP but, unfortunately we believe there may be significant infrastructure upgrades required to ensure the QOS needed to support its implementation. VoIP should be proposed beyond the requirements of the RFP if and where it strategically makes sense: where it can both enhance the proposed solution's ability to meet the School's technical and financial requirements.

8 Develop Roadmap Implementation Plan

8.1 Installation pre-wiring planning

The Vendor will develop a detailed plan to pre-wire interconnect wiring so as to cause the minimum disruption of current operations and provide the easiest method for cutting over to the new system. This plan will include the installation of the switch equipment and punch blocks and the wiring of this equipment just short of the cut-over.

8.2 System cut-over planning

The Vendor will develop a plan to cut-over to the new system so as to be as transparent as possible to the School's users. Scheduling for the cut-over will take the School's calendar into account.

9 Transition Period

The transition period will be determined to be a mutually agreed interval during which time the Vendor will provide "Help Desk" support for user questions. This support will be an adjunct to the user training described in section 6.3.3.

Appendix A – Vendor Forms for Section I of Response

NOTE: For each of the forms below, instructions are enclosed in brackets “[]”. Please remove the bracketed instructions as the forms are completed. Start each form on a new page. PLEASE DO NOT REMOVE EACH FORM’S HEADING/NAME.

Form 1: Cover Letter

[All proposals must include a cover letter signed by a duly constituted official legally authorized to bind the applicant to its proposal. NOTE: The cover letter is not intended to be a summary of the proposal itself; this is accomplished in Form 2.

The Cover Letter must contain the following statements and information:

1. “Proposal may be released in total as public information in accordance with the requirements of laws cover the same.” (Any proprietary information must be clearly marked.
2. “Proposal shall be valid and binding for one hundred eighty (180) days following proposal due date and will become part of the contract that is negotiated with the School.”
3. Company name, address, and telephone number of the firm submitting the proposal.
4. Name, title, address, e-mail address, and telephone number of the person or persons to contact who are authorized to represent the firm and to whom correspondence should be directed.
5. Proposals must state the Vendor’s federal and state taxpayer identification numbers.

Form 2: Proposal Summary

[Use this form to summarize your proposal and your firm’s qualifications. Additionally, you may use this form at your discretion to articulate why your firm is pursuing this work and how it is uniquely qualified to perform it.

Your proposal summary is not to exceed two pages.]

Form 3: Acceptance of Terms and Conditions

[Use this form to indicate exceptions that your firm takes to any terms and conditions listed in this RFP, including the Appendices and Attachments. Proposals which take exception to the specifications, terms or conditions of this RFP or offer substitutions shall explicitly state the exception(s), reason(s) therefore, and language substitute(s) (if any) in this section of the proposal response. Failure to take exception(s) shall mean that the Vendor accepts the conditions, terms, and specifications of the RFP.

If your firm takes no exception to the specifications, terms, and conditions of this RFP, please indicate so.]

Signed,

By: _____

Date: _____

(Signature)

(Printed Name)

Title: _____

Company: _____

Form 4: General Vendor Information

[Use this form to provide information about your firm. Please complete the following table and questions.]

1. General Demographics

Information	Response
Name of Parent Company	
Length of Time in Business	
Length of Time in Business Providing Proposed Services	
Gross Revenue for the Prior Fiscal Year (US dollars)	
Percentage of Gross Revenue Generated by Proposed Services	
Total Number of Clients/Customers	
Total Number of Clients/Customers in Proposed Service Area	
Number of K-12 Educational Clients/Customers	
Number of Full-Time Personnel in:	
Consulting	
Telecommunications	
Sales, Marketing, and Administrative Functions	
Other (please note relevant staff)	

2. Where is your headquarters located? Field Offices?

3. Which office would service this account?

4. Viability

[In the following table, please list credit references that can verify the financial standing of your company. Additionally, attach the most recent audited financial statement or annual report for your company.]

Institution	Address	Phone Number

5. Defaults

[If the Vendor has had a contract terminated for default during the past five years, all such incidents must be described. Termination for default is defined as notice to stop performance due to the Vendor's nonperformance or poor performance; and the issue was either (a) not litigated, or (b) litigated, and such litigation determined the Vendor to be at fault.

In this space, submit full details of all terminations for default experienced by the Vendor during the past five years, including the other party's name, address, and telephone number. Present the Vendor's position on the matter. The School will evaluate the fact and may, at its sole discretion, reject the Vendor's proposal if the facts discovered indicate that the completion of a contract resulting from this RFP may be jeopardized by selection of the Vendor.

If no such terminations for default have been experienced by the Vendor in the past five years, declare so in the this space.

If the Vendor has had a contract terminated for convenience, nonperformance, non-allocation of funds, or any other reasons which termination occurred before completion of the contract during that past five years, describe fully all such terminations, including the name, address, and telephone number of the other contracting party.

A Vendor response that indicates the above requested information will only be provided if and when the Vendor is selected as the apparently successful Vendor is not acceptable. Restricting the Vendor response to include only legal action resulting from terminations for default is not acceptable.]

Form 5: Project Staff List

[Please complete the following table to identify the proposed project staff (including subcontractor(s)). Indicate the time each staff member will be dedicated to the project and each member's years of experience in telecommunications. Add additional lines as necessary.]

Name	Title	Percent Dedicated to Project	Years Experience in Telecom

Form 6: Key Project Staff Background Information

[Complete the following table for EACH of the key project staff members, using your word processor's copy and paste commands to create additional copies of this table as needed. Please allow one page for each table.]

Vendor Name (prime or subcontractor(s))	
Staff Member Name	
Position in Company	
Length of Time in Company	
Length of Time in Position	
Project Position and Responsibilities	
Education	
Technical Skills and Qualification for the Project	
Last Client Experience in Telecommunications	
Client Name	
Contact Person and Phone Number	
Client Size (No. of employees)	
Project Position/Responsibilities	
Start Date	
Scheduled End Date	
Actual End Date	

Form 7: Client (School) Staffing Requirements

[Use this form to provide information about the client (School) staffing requirements. List client staff and corresponding amounts of time (in percentages of full-time equivalents) you require to successfully complete this project. Add additional lines if necessary.]

Vendor*	Client Staff Role**	Percentage FTE

* Prime or subcontractor(s) name

** For example: Project Manager (100%), Network Technician (20%), etc.

Form 8: Project Schedule and Workplan

[Provide a detailed project implementation plan that includes:

- A Gantt chart showing beginning and end dates of all tasks (the actual start date will be determined during contract negotiations)
- A table listing Vendor staff assignments and proposed labor hours for all tasks
- A brief description of each task and its work products
- A description of each proposed deliverable]

Gantt Chart

[Insert your Gantt Chart here.]

Vendor Staff Assignments/Hours

[Use this section to include a table of Vendor staff assignments and proposed labor hours for all tasks. Signify if staff assigned is a designated individual or FTE equivalent.]

Task Descriptions

[Use this section to include brief descriptions of all tasks, milestones, and associated work products.]

Deliverables

[Use this section to include brief descriptions of all project deliverables.]

Form 9: Payment Terms and Conditions

[The proposal shall state the total cost of the solution and include payment options that will enable the School to finance all costs associated hardware, software, and labor. The options should show a monthly payment amount based on the following variables:

Term: 36, 48, 60 months

End of Term Options: Fair Market, \$1 Buyout]

Form 10: Estimated/Actual Monthly Recurring Charges

[The proposal shall provide actual monthly costs for all fixed interconnectivity service charges and provide estimated monthly costs for charges associated with usage. Usage rates that depend on minimum revenue/usage requirements must be clearly stated in the proposal along with any penalties charged for not meeting minimums.]

Form 11: Work Samples

[Proposing Vendors are strongly encouraged to provide samples of previous work. These samples will be reviewed as part of the evaluation of proposals. Any work samples provided should be itemized here but included in the Vendor response as one or more Appendixes, as the Vendor sees fit.]

Appendix B – Section II Requirements Summary Table

[Please fill out the following table as required for Section 2, Part 2 of your response to this RFP. Indicate if your proposed solution will or will not meet each requirement of this RFP. Include brief comments if your solution only partially meets the requirement, or to explain why the requirement has not been met.

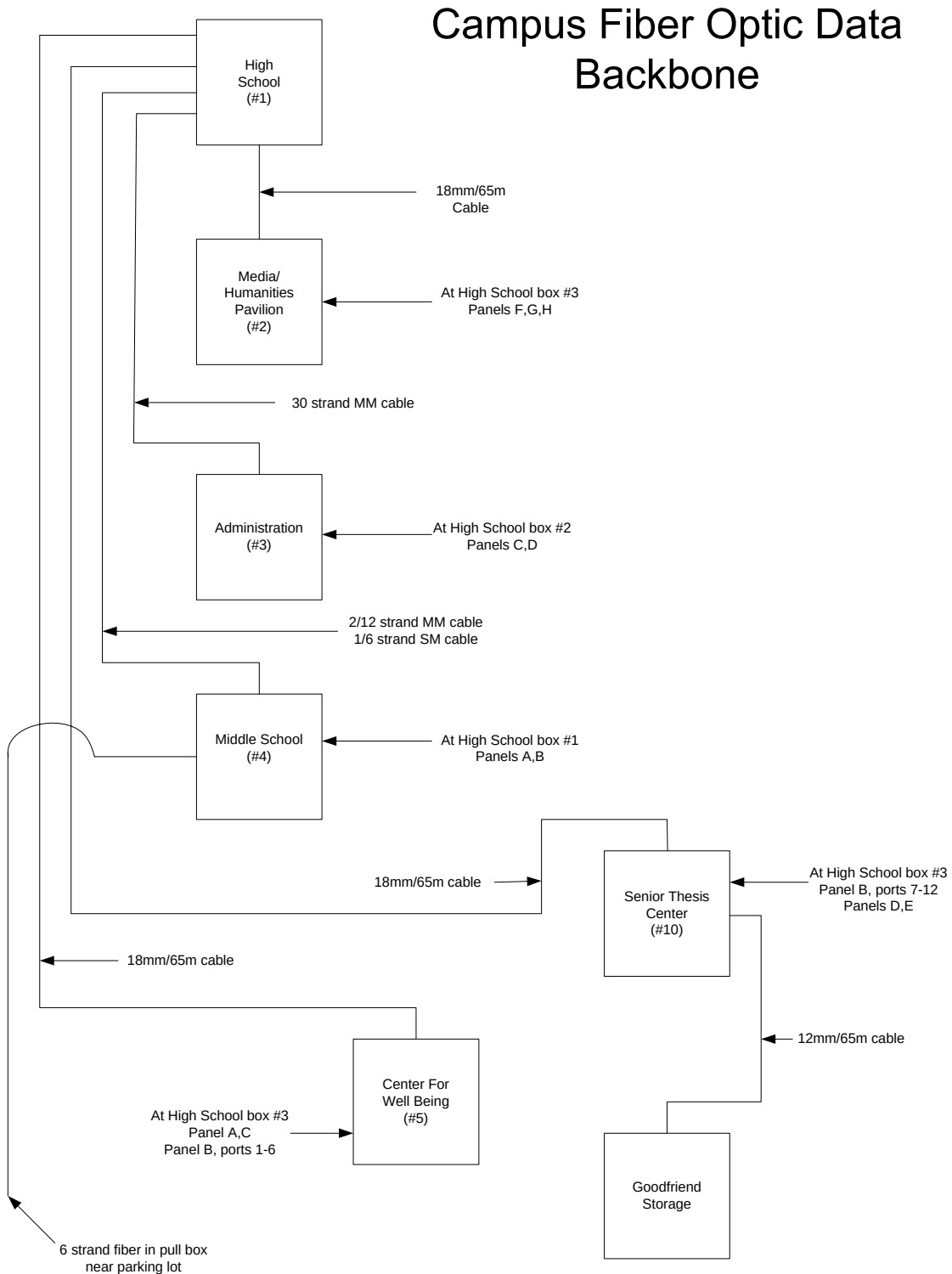
Please remove these instructions from your response.]

Section II, Part 2 - Requirements Summary Table

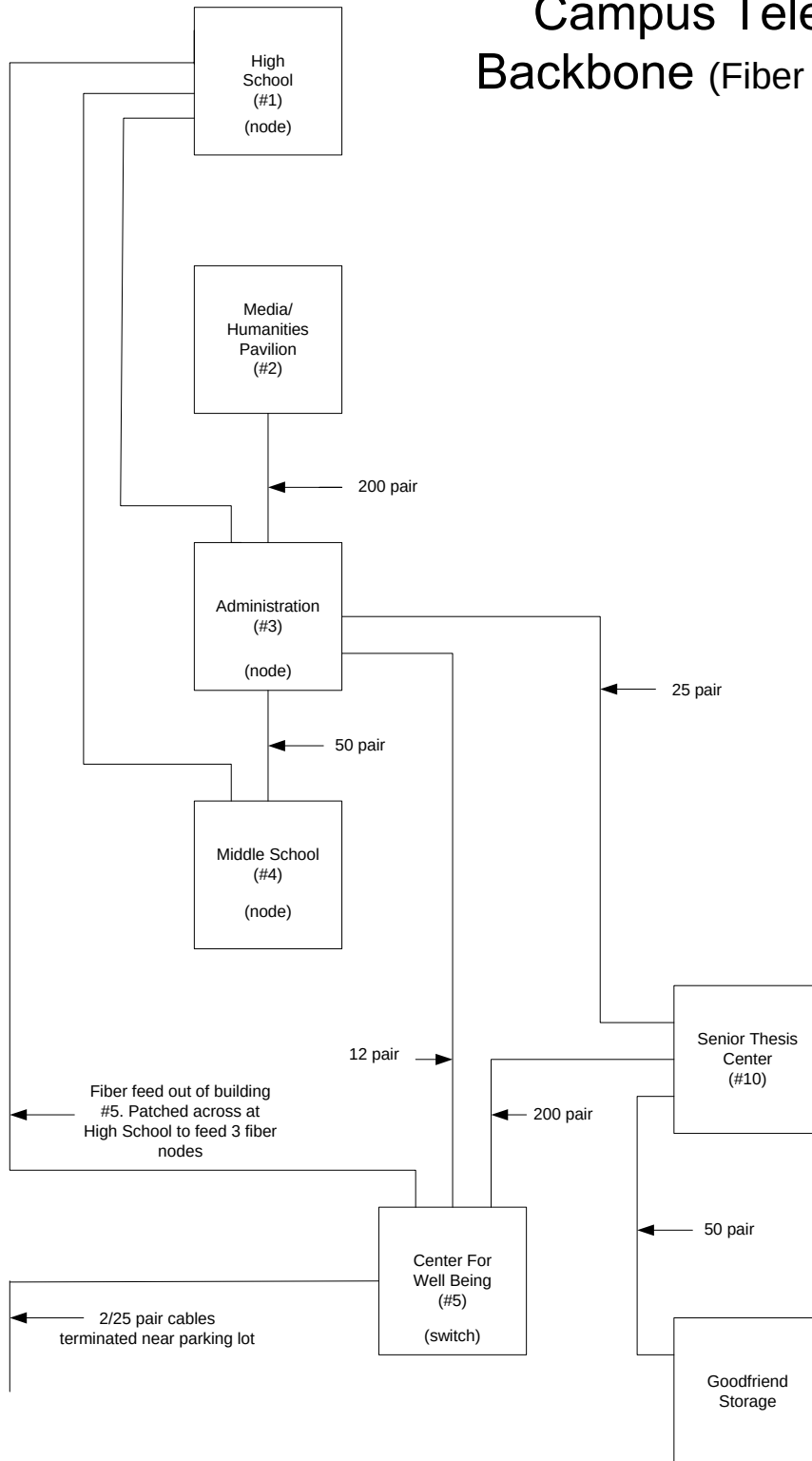
6.1 General			
Requirement		Meets Requirement (Yes/No)	Comments
6.1.1	Non-obsolescence and equipment upgrade planning		
6.1.2	Service Level Agreement (SLA)		
6.1.3	Business Continuity		
6.1.4	Management Reporting Tools		
6.2 Interconnectivity Services			
Requirement		Meets Requirement (Yes/No)	Comments
6.2.1	Provide integrated voice/data/video capabilities		
6.2.2	Maintain existing infrastructure		
6.2.3	Provide interface between telephone system and trunked campus radio system		
6.2.4	Provide integrated PBX voice switched system		
6.2.5	Support integrated campus-wide paging system		
6.2.6	IP telephones		
6.2.7	Emergency preparedness		
6.2.8	E-911 Compliance		
6.2.9	Support Class of Service (COS) and Class of Restriction (COR) designations		
6.2.10	Internet connectivity		
6.2.11	Provide bandwidth management tools		
6.2.12	Provide Call Accounting System		
6.2.13	Ensure least cost routing		
6.2.14	Provide choices of compatible phone sets		
6.2.15	Provide integrated voicemail system with multiple auto-attendant capabilities		

6.2.16	Provide voice and data security solutions		
6.3 Support			
Requirement		Meets Requirement (Yes/No)	Comments
6.3.1	Provide system management training		
6.3.2	Provide system management tools		
6.3.3	End user training classes and materials		
6.3.4	Provide on-site, second level maintenance		

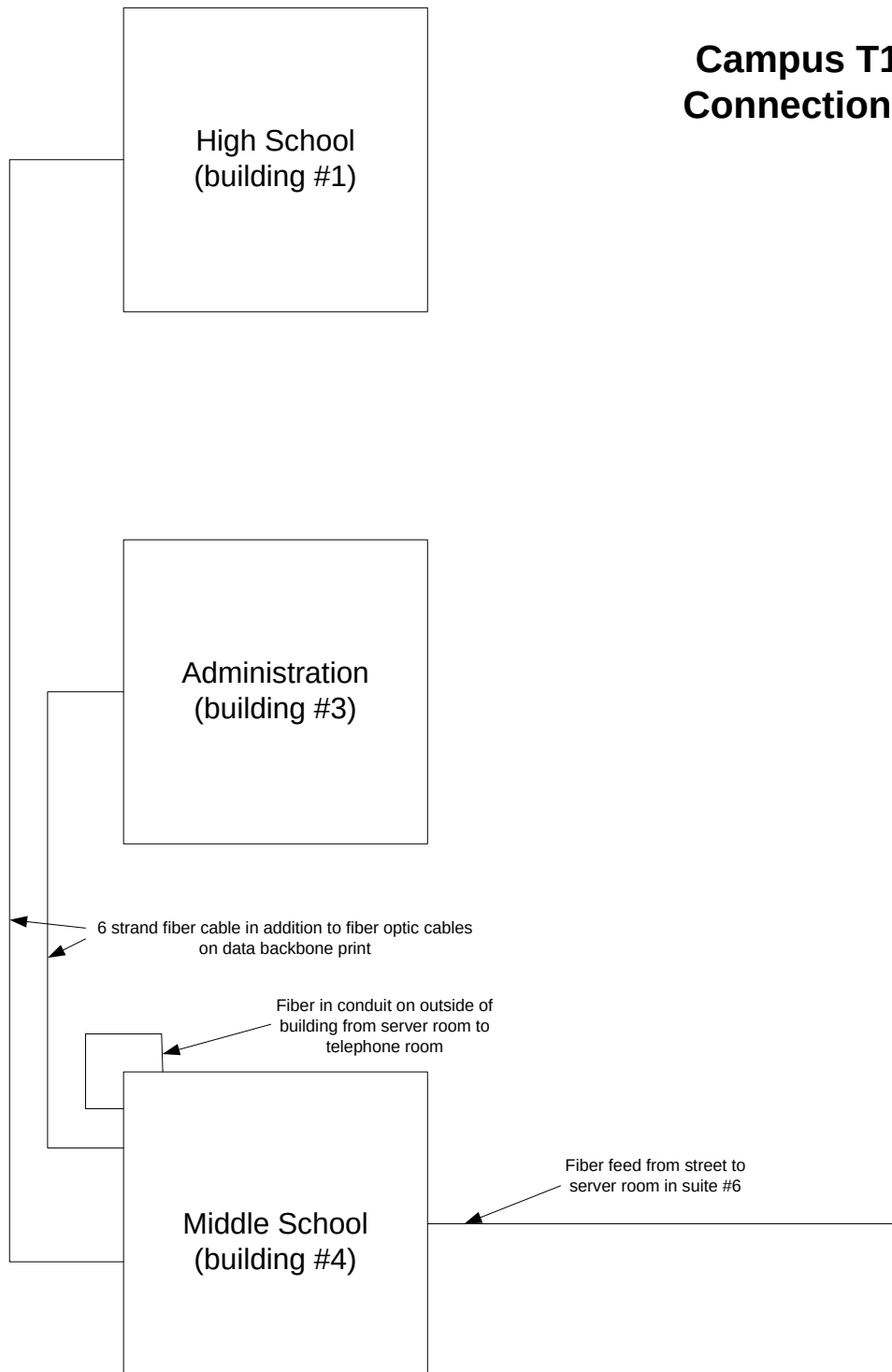
Appendix C - Current Telecommunications Infrastructure and Hardware



Campus Telephone Backbone (Fiber and Copper)



Campus T1 Connections



Switch Configuration

Port	Board Type	Code	Suffix	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01B01	DIGITAL LINE	TN2224	B	1	2	3	4	5	p	7	8	9	p	p	p	p	p	p	p	p	p	19	20	p	22	p	24
01B02	EXPANSION INTRFC	TN570	C																								
01B03	PGATE BOARD	TN577		1	u	u	u																				
01B04	ANALOG LINE	TN793		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01B05	ANALOG LINE	TN793		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01B06	MAINTENANCE/TEST	TN771	D	u	2	3	4																				
01B07	AUXILIARY TRUNK	TN763	D	1	2	u	u																				
01B08	DATA LINE	TN726	B	1	2	3	4	5	6	7	u																
01B09	PDATA LINE	TN553		1	2	3	4	5	6	7	u	u	u	u	u												
01B10	DIGITAL LINE	TN2224	B	p	p	p	p	p	p	7	p	9	p	11	p	13	p	15	p	p	18	p	p	21	22	23	p
01B11	DIGITAL LINE	TN2224	B	p	2	p	p	5	6	p	8	9	10	p	12	13	p	p	p	17	p	p	p	p	p	p	p
01B12	DIGITAL LINE	TN2224	B	1	p	p	4	5	p	p	8	p	p	p	12	13	p	p	p	17	18	p	p	p	p	p	p
01B13	DIGITAL LINE	TN2224	B	p	p	p	p	5	p	p	p	p	p	p	p	p	15	p	p	p	p	p	p	p	p	23	p
01B14	DIGITAL LINE	TN2224	B	1	p	3	4	5	6	7	8	p	10	11	12	13	14	15	16	17	18	19	20	p	22	23	p
01B15	DIGITAL LINE	TN2224	B	p	2	3	p	p	p	p	p	9	p	p	12	p	p	p	p	p	p	p	p	p	p	p	24
01B16	DIGITAL LINE	TN2224	B	p	p	p	4	5	6	p	8	9	p	11	12	p	p	p	16	p	p	19	20	21	22	p	p
01B17	DIGITAL LINE	TN2224	B	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
01B18	ANALOG LINE	TN793		1	p	p	4	5	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
01B19	CONTROL-LAN	TN799	C	u	u	u	u	u	u	u	u	u	u	u	u	u	u	u	u	17							
01B20	IP MEDIA PROCESSOR	TN2302	A	2	3	4	5	6	7	8																	
01E02	SWITCH NODE INTF	TN573	B																								
01E03	SWITCH NODE INTF	TN573	B																								
01E10	SWITCH NODE CLOCK	TN572																									
01E19	SWITCH NODE INTF	TN573	B																								
01E20	SWITCH NODE INTF	TN573	B																								
02A01	EXPANSION INTRFC	TN570	C																								
02A03	DIGITAL LINE	TN2224		p	p	p	p	p	6	7	8	9	10	11	12	13	p	15	16	17	18	p	20	p	p	p	24
02A04	DIGITAL LINE	TN2224		1	2	3	4	5	p	7	8	9	p	11	p	p	p	p	p	p	p	p	p	p	p	23	24
02A05	ANALOG LINE	TN746	B	p	p	p	p	p	p	p	p	p	10	p	12	p	p	p	p								

Port	Board Type	Code	Suffix	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
02A06	HYBRID LINE	TN762	B	1	2	3	4	p	6	7	p																
02A07	DIGITAL LINE	TN2224	B	p	2	3	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	19	p	p	p	p	p
02A08	ANALOG LINE	TN793		p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
02A10	DIGITAL LINE	TN2224	B	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
02A11	DIGITAL LINE	TN2224		1	p	3	4	5	6	7	8	p	p	p	12	p	p	15	p	p	p	p	20	21	22	p	p
02A12	AUXILIARY TRUNK	TN763	D	1	2	u	u																				
02A13	DIOD/CO TRUNK	TN429	D	1	2	3	4	5	6	7	8																
02A14	CO TRUNK	TN747	B	1	2	3	4	5	6	7	8																
02A15	CO TRUNK	TN747	B	1	2	3	4	5	6	7	8																
02A16	DIOD/CO TRUNK	TN429	D	1	2	3	4	5	6	u	u																
02A17	DIOD/CO TRUNK	TN429	D	u	u	u	u	u	u	u	u																
03A01	EXPANSION INTRFC	TN570	C																								
03A03	DIGITAL LINE	TN2224		1	2	3	p	5	p	7	p	9	10	11	12	p	p	15	16	p	18	19	20	p	p	23	24
03A04	DIGITAL LINE	TN2224		p	p	3	4	5	6	7	8	9	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
03A05	HYBRID LINE	TN762	B	p	p	p	p	p	p	p	p																
03A06	AUXILIARY TRUNK	TN763	D	1	u	u	u																				
03A07	DIGITAL LINE	TN2224		1	2	3	4	p	6	p	p	p	p	11	p	13	14	p	p	17	p	p	p	21	p	23	p
03A08	DS1 INTERFACE	TN464	F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
03A16	ANALOG LINE	TN793		1	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
03A17	CALL CLASSIFIER	TN744	D	1	2	3	4	5	6	7	8																
04A01	EXPANSION INTRFC	TN570	C																								
04A04	DIGITAL LINE	TN2224		1	2	3	p	p	p	7	p	9	p	p	p	13	p	p	16	p	p	p	p	p	22	23	24
04A05	DIGITAL LINE	TN2224		1	2	p	4	5	p	p	8	9	p	p	p	p	14	p	16	17	18	19	20	p	22	23	p
04A06	DIGITAL LINE	TN2224		1	2	p	p	p	6	7	8	9	p	11	12	13	p	15	p	p	18	19	p	p	22	23	p
04A07	DIGITAL LINE	TN2224	B	1	2	3	p	p	6	p	p	9	p	11	p	13	p	15	16	17	18	19	20	21	22	23	p
04A08	AUXILIARY TRUNK	TN763	D	1	2	u	u																				
04A09	ANALOG LINE	TN793		p	2	3	p	5	6	7	p	9	10	11	p	13	14	p	p	p	p	p	20	p	p	p	p
04A10	DIGITAL LINE	TN2224	B	1	p	p	p	p	p	7	8	9	p	p	p	p	14	15	16	p	p	19	20	21	22	p	24
04A11	DIGITAL LINE	TN2224	B	p	p	3	4	p	6	7	p	9	p	p	12	13	p	15	16	p	18	19	20	21	p	23	24
04A13	DS1 INTERFACE	TN464	F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Port	Board Type	Code	Suffix	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
04A14	DS1 INTERFACE	TN464	F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
04A17	CALL CLASSIFIER	TN744	D	1	2	3	4	5	6	7	8																
01A	SYS ACCESS-MAINT	TN1648	B	u	u																						
01A	PROCESSOR	UN331	B																								
01A	MEMORY 1	TN1650	B																								
01A	MEMORY 2	TN1650	B																								
01A	MEMORY 3	TN1650	B																								
01A	MEMORY 4	TN1650	B																								
01A	PACKET INTERFACE 1	TN1655																									
01A	TONE/CLOCK	TN2182	B	1	2	3	4	5	6	7	8																
01A	MSS/NETWORK CONT	UN332	C																								
01A	DISK DRIVE	TN1657																									
01A	R-MEDIA DRIVE	TN2211																									
02A	MAINTENANCE	TN775	C	u	u																						
02A	TONE/CLOCK	TN2182	B	1	2	3	4	5	6	7	8																
03A	MAINTENANCE	TN775	B	u	u																						
03A	TONE/CLOCK	TN2182		1	2	3	4	5	6	7	8																
04A	MAINTENANCE	TN775	C	u	u																						
04A	TONE/CLOCK	TN2182	B	1	2	3	4	5	6	7	8																

Appendix D – Current Minutes of Use

Minutes of use will be provided at a later date.

Appendix E – Usage Reports

ROSS Date: 12:27 pm WED MAR 30, 2005

CALL SUMMARY MEASUREMENTS

Summary of Last 24 Hours

-----# Calls Completed-----						-----# Calls Completed-----					
Multi Service						Multi Service					
Hour	Voice	Data	Media	Link	Total	Hour	Voice	Data	Media	Link	Total
1100	277	0	0	0	277	2300	75	0	0	0	75
1000	272	0	0	0	272	2200	76	0	0	0	76
900	293	0	0	0	293	2100	90	0	0	0	90
800	211	0	0	0	211	2000	87	0	0	0	87
700	129	0	0	0	129	1900	85	0	0	0	85
600	82	0	0	0	82	1800	92	0	0	0	92
500	77	0	0	0	77	1700	144	0	0	0	144
400	76	0	0	0	76	1600	234	0	0	0	234
300	75	0	0	0	75	1500	311	0	0	0	311
200	76	0	0	0	76	1400	309	0	0	0	309
100	77	0	0	0	77	1300	264	0	0	0	264
0	76	0	0	0	76	1200	239	0	0	0	239

ROSS

Date: 12:29 pm WED MAR 30, 2005

TRUNK GROUP SUMMARY REPORT

Peak Hour For All Trunk Groups: 1500

%																
Grp No.	Grp Siz	Grp Type	Grp Dir	Meas Hour	Total Usage	Total Seize	Inc. Seize	Grp Ovfl	Que Siz	Call Qued	Que Ovfl	Que Abd	Out Srv	% ATB	Out Blk	
10	6	co	inc	1500	26	13	13	0	0	0	0	0	0	0	*	
11	18	co	out	1600	0	2	0	0	0	0	0	0	0	0	0	
12	3	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*	
13	2	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*	
14	70	isdn	two	1000	185	123	38	0	0	0	0	0	0	0	0	
15	1	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*	
16	0	tie	two	2300	0	0	0	0	0	0	0	0	0	0	0	

ROSS

Date: 5:19 pm MON APR 4, 2005

CALL SUMMARY MEASUREMENTS

Summary of Last 24 Hours

-----# Calls Completed-----						-----# Calls Completed-----					
Multi Service						Multi Service					
Hour	Voice	Data	Media	Link	Total	Hour	Voice	Data	Media	Link	Total
1600	280	0	0	0	280	400	76	0	0	0	76
1500	290	0	0	0	290	300	77	0	0	0	77
14**	349	0	0	0	349	200	76	0	0	0	76
1300	234	0	0	0	234	100	76	0	0	0	76
1200	258	0	0	0	258	0	76	0	0	0	76
1100	272	0	0	0	272	2300	77	0	0	0	77
1000	255	0	0	0	255	2200	73	0	0	0	73
900	179	0	0	0	179	2100	77	0	0	0	77
800	110	0	0	0	110	2000	78	0	0	0	78
700	82	0	0	0	82	1900	79	0	0	0	79
600	77	0	0	0	77	1800	73	0	0	0	73
500	76	0	0	0	76	1700	81	0	0	0	81

ROSS

Date: 5:17 pm MON APR 4, 2005

TRUNK GROUP SUMMARY REPORT

Peak Hour For All Trunk Groups: 900

Grp No.	Grp Siz	Grp Type	Grp Dir	Meas Hour	Total Usage	Total Seize	Inc. Seize	Grp Ovfl	Que Siz	Call Qued	Que Ovfl	Que Abd	Out Srv	% ATB	% Out Blk
10	6	co	inc	2000	2	2	2	0	0	0	0	0	0	0	*
11	18	co	out	2300	2	2	0	0	0	0	0	0	0	0	0
12	3	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
13	2	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
14	70	isdn	two	900	34	4	3	0	0	0	0	0	0	0	0
15	1	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
16	0	tie	two	2300	0	0	0	0	0	0	0	0	0	0	0

ROSS

Date: 9:09 am WED APR 6, 2005

CALL SUMMARY MEASUREMENTS

Summary of Last 24 Hours

-----# Calls Completed-----						-----# Calls Completed-----					
Multi Service						Multi Service					
Hour	Voice	Data	Media	Link	Total	Hour	Voice	Data	Media	Link	Total
800	125	0	0	0	125	2000	185	0	0	0	185
700	89	0	0	0	89	1900	104	0	0	0	104
600	78	0	0	0	78	1800	142	0	0	0	142
500	76	0	0	0	76	1700	228	0	0	0	228
400	75	0	0	0	75	1600	261	0	0	0	261
300	76	0	0	0	76	1500	302	0	0	0	302
200	77	0	0	0	77	1400	220	0	0	0	220
100	76	0	0	0	76	1300	251	0	0	0	251
0	75	0	0	0	75	1200	257	0	0	0	257
2300	79	0	0	0	79	1100	260	0	0	0	260
2200	85	0	0	0	85	1000	311	0	0	0	311
2100	154	0	0	0	154	900	164	0	0	0	164

ROSS

Date: 9:21 am WED APR 6, 2005

TRUNK GROUP SUMMARY REPORT

Peak Hour For All Trunk Groups: 1000

Grp No.	Grp Siz	Grp Type	Grp Dir	Meas Hour	Total Usage	Total Seize	Inc. Seize	Grp Ovfl	Que Siz	Call Qued	Que Ovfl	Que Abd	Out Srv	% ATB	Out Blk
10	6	co	inc	1400	25	9	9	0	0	0	0	0	0	0	*
11	18	co	out	1700	1	1	0	0	0	0	0	0	0	0	0
12	3	co	inc	1000	0	1	1	0	0	0	0	0	0	0	*
13	2	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
14	70	isdn	two	1000	154	157	50	0	0	0	0	0	0	0	0
15	1	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
16	0	tie	two	2300	0	0	0	0	0	0	0	0	0	0	0

ROSS

Date: 9:28 am THU APR 7, 2005

CALL SUMMARY MEASUREMENTS

Summary of Last 24 Hours

-----# Calls Completed-----						-----# Calls Completed-----					
Multi Service						Multi Service					
Hour	Voice	Data	Media	Link	Total	Hour	Voice	Data	Media	Link	Total
800	151	0	0	0	151	2000	99	0	0	0	99
700	86	0	0	0	86	1900	111	0	0	0	111
600	78	0	0	0	78	1800	134	0	0	0	134
500	76	0	0	0	76	1700	208	0	0	0	208
400	75	0	0	0	75	1600	284	0	0	0	284
300	76	0	0	0	76	1500	307	0	0	0	307
200	77	0	0	0	77	1400	253	0	0	0	253
100	78	0	0	0	78	1300	264	0	0	0	264
0	76	0	0	0	76	1200	251	0	0	0	251
2300	76	0	0	0	76	1100	247	0	0	0	247
2200	83	0	0	0	83	1000	261	0	0	0	261
2100	89	0	0	0	89	900	193	0	0	0	193

ROSS

Date: 9:26 am THU APR 7, 2005

TRUNK GROUP SUMMARY REPORT

Peak Hour For All Trunk Groups: 1500

Grp No.	Grp Siz	Grp Type	Grp Dir	Meas Hour	Total Usage	Total Seize	Inc. Seize	Grp Ovfl	Que Siz	Call Qued	Que Ovfl	Que Abd	Out Srv	% ATB	% Out Blk
10	6	co	inc	1200	12	12	12	0	0	0	0	0	0	0	*
11	18	co	out	1500	0	1	0	0	0	0	0	0	0	0	0
12	3	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
13	2	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
14	70	isdn	two	1500	215	160	47	0	0	0	0	0	0	0	0
15	1	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
16	0	tie	two	2300	0	0	0	0	0	0	0	0	0	0	0

ROSS

Date: 9:39 am TUE APR 12, 2005

CALL SUMMARY MEASUREMENTS

Summary of Last 24 Hours

-----# Calls Completed-----						-----# Calls Completed-----					
Multi Service						Multi Service					
Hour	Voice	Data	Media	Link	Total	Hour	Voice	Data	Media	Link	Total
800	127	0	0	0	127	2000	109	0	0	0	109
700	86	0	0	0	86	1900	117	0	0	0	117
600	75	0	0	0	75	1800	163	0	0	0	163
500	78	0	0	0	78	1700	259	0	0	0	259
400	75	0	0	0	75	1600	303	0	0	0	303
300	76	0	0	0	76	1500	312	0	0	0	312
200	77	0	0	0	77	1400	276	0	0	0	276
100	76	0	0	0	76	1300	247	0	0	0	247
0	75	0	0	0	75	1200	257	0	0	0	257
2300	79	0	0	0	79	1100	274	0	0	0	274
2200	84	0	0	0	84	1000	268	0	0	0	268
2100	88	0	0	0	88	900	222	0	0	0	222

ROSS

Date: 9:37 am TUE APR 12, 2005

TRUNK GROUP SUMMARY REPORT

Peak Hour For All Trunk Groups: 1200

Grp No.	Grp Siz	Grp Type	Grp Dir	Meas Hour	Total Usage	Total Seize	Inc. Seize	Grp Ovfl	Que Siz	Call Qued	Que Ovf	Que Abd	Out Srv	% ATB	Out Blk
10	6	co	inc	1400	16	16	16	0	0	0	0	0	0	0	*
11	18	co	out	1700	3	2	0	0	0	0	0	0	0	0	0
12	3	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
13	2	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
14	70	isdn	two	1200	148	114	41	0	0	0	0	0	0	0	0
15	1	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
16	0	tie	two	2300	0	0	0	0	0	0	0	0	0	0	0

ROSS

Date: 2:41 pm WED APR 13, 2005

CALL SUMMARY MEASUREMENTS

Summary of Last 24 Hours

-----# Calls Completed-----						-----# Calls Completed-----					
Multi Service						Multi Service					
Hour	Voice	Data	Media	Link	Total	Hour	Voice	Data	Media	Link	Total
1300	224	0	0	0	224	100	75	0	0	0	75
1200	321	0	0	0	321	0	76	0	0	0	76
1100	321	0	0	0	321	2300	75	0	0	0	75
1000	293	0	0	0	293	2200	92	0	0	0	92
900	177	0	0	0	177	2100	89	0	0	0	89
800	119	0	0	0	119	2000	106	0	0	0	106
700	88	0	0	0	88	1900	138	0	0	0	138
600	76	0	0	0	76	1800	173	0	0	0	173
500	75	0	0	0	75	1700	232	0	0	0	232
400	76	0	0	0	76	1600	281	0	0	0	281
300	75	0	0	0	75	1500	320	0	0	0	320
200	78	0	0	0	78	1400	254	0	0	0	254

ROSS

Date: 2:40 pm WED APR 13, 2005

TRUNK GROUP SUMMARY REPORT

Peak Hour For All Trunk Groups: 1500

Grp No.	Grp Siz	Grp Type	Grp Dir	Meas Hour	Total Usage	Total Seize	Inc. Seize	Grp Ovfl	Que Siz	Call Qued	Que Ovfl	Que Abd	Out Srv	% ATB	% Out Blk
10	6	co	inc	800	16	5	5	0	0	0	0	0	0	0	*
11	18	co	out	1900	36	0	0	0	0	0	0	0	0	0	0
12	3	co	inc	1500	0	1	1	0	0	0	0	0	0	0	*
13	2	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
14	70	isdn	two	1500	267	148	52	0	0	0	0	0	0	0	0
15	1	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
16	0	tie	two	2300	0	0	0	0	0	0	0	0	0	0	0

ROSS

Date: 12:11 pm THU APR 14, 2005

CALL SUMMARY MEASUREMENTS

Summary of Last 24 Hours

-----# Calls Completed-----						-----# Calls Completed-----					
Multi Service						Multi Service					
Hour	Voice	Data	Media	Link	Total	Hour	Voice	Data	Media	Link	Total
1100	315	0	0	0	315	2300	80	0	0	0	80
1000	240	0	0	0	240	2200	77	0	0	0	77
900	183	0	0	0	183	2100	93	0	0	0	93
800	148	0	0	0	148	2000	105	0	0	0	105
700	88	0	0	0	88	1900	93	0	0	0	93
600	76	0	0	0	76	1800	150	0	0	0	150
500	75	0	0	0	75	1700	230	0	0	0	230
400	76	0	0	0	76	1600	294	0	0	0	294
300	78	0	0	0	78	1500	284	0	0	0	284
200	77	0	0	0	77	1400	271	0	0	0	271
100	76	0	0	0	76	1300	224	0	0	0	224
0	76	0	0	0	76	1200	321	0	0	0	321

ROSS

Date: 12:10 pm THU APR 14, 2005

TRUNK GROUP SUMMARY REPORT

Peak Hour For All Trunk Groups: 1200

Grp No.	Grp Siz	Grp Type	Grp Dir	Meas Hour	Total Usage	Total Seize	Inc. Seize	Grp Ovfl	Que Siz	Call Qued	Que Ovfl	Que Abd	Out Srv	% ATB	Out Blk
10	6	co	inc	1200	23	15	15	0	0	0	0	0	0	0	*
11	18	co	out	2300	0	0	0	0	0	0	0	0	0	0	0
12	3	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
13	2	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
14	70	isdn	two	1200	205	131	55	0	0	0	0	0	0	0	0
15	1	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
16	0	tie	two	2300	0	0	0	0	0	0	0	0	0	0	0

ROSS

Date: 12:22 pm FRI APR 15, 2005

CALL SUMMARY MEASUREMENTS

Summary of Last 24 Hours

-----# Calls Completed-----						-----# Calls Completed-----					
Multi Service						Multi Service					
Hour	Voice	Data	Media	Link	Total	Hour	Voice	Data	Media	Link	Total
1100	306	0	0	0	306	2300	76	0	0	0	76
1000	294	0	0	0	294	2200	86	0	0	0	86
900	257	0	0	0	257	2100	85	0	0	0	85
800	140	0	0	0	140	2000	96	0	0	0	96
700	91	0	0	0	91	1900	114	0	0	0	114
600	76	0	0	0	76	1800	153	0	0	0	153
500	76	0	0	0	76	1700	244	0	0	0	244
400	76	0	0	0	76	1600	306	0	0	0	306
300	75	0	0	0	75	1500	313	0	0	0	313
200	78	0	0	0	78	1400	274	0	0	0	274
100	76	0	0	0	76	1300	220	0	0	0	220
0	75	0	0	0	75	1200	272	0	0	0	272

ROSS

Date: 12:21 pm FRI APR 15, 2005

TRUNK GROUP SUMMARY REPORT

Peak Hour For All Trunk Groups: 1600

Grp No.	Grp Siz	Grp Type	Grp Dir	Meas Hour	Total Usage	Total Seize	Inc. Seize	Grp Ovfl	Que Siz	Call Qued	Que Ovfl	Que Abd	Out Srv	% ATB	Out Blk
10	6	co	inc	1000	17	8	8	0	0	0	0	0	0	0	*
11	18	co	out	1600	32	1	0	0	0	0	0	0	0	0	0
12	3	co	inc	1200	0	1	1	0	0	0	0	0	0	0	*
13	2	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
14	70	isdn	two	1600	182	161	62	0	0	0	0	0	0	0	0
15	1	co	inc	2300	0	0	0	0	0	0	0	0	0	0	*
16	0	tie	two	2300	0	0	0	0	0	0	0	0	0	0	0

Appendix F – Network Information

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
1	LL 05 (server RM)	1											
			1-72	550F <-> 3640			Intel Express 550T Routing Switch	103	1000SX 1 used 100FX 1/2 used	8	7	3/5 of 4006b1	
				n/a			Intel Express 520T Switch	205.232.30.101	1000LX 1/1 used 100FX 2/2 used	12	4	?	
				Basement-North			Intel Express 520T Switch	105	1000SX 1/1 used	12	11	3/3 of 4006b1	
					n/a		Intel Express 10/100 stackable hub			24	24	Basement-North	
					n/a		Intel Express 10/100 stackable hub			24	24	Basement-North	
					n/a		Intel Express 10/100 stackable hub			24	24	Basement-North	
													APC 1400
		2	73-207	HS Basement-South			Intel Express 520T Switch	102	1000SX 1/1 100FX 2/2	12	12	3/4 4006b1	
					n/a		Intel Express 10/100 stackable hub			24	24	HS Basement-South	
					n/a		Intel Express 10/100 stackable hub			24	24	HS Basement-South	
					n/a		Intel Express 10/100 stackable hub			24	24	HS Basement-South	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
					n/a		Intel Express 10/100 stackable hub			24	24	HS Basement-South	
					n/a		Intel Express 10/100 stackable hub			24	24	HS Basement-South	
					n/a		Intel Express 220T stackable hub			24	18	HS Basement-South	
													APC 1400
		3		HS 4006			4006	101	3x6 + 2		15 used		
													APC 1400
	LL 09 Environmnetal LAB south	1	2/6 MMF										
			13				Intel Express 220T stackable Hub	113	100FX 1/1	12	12	HS Basement-South	
	LL 12 Environmnetal LAB north	1	2/6 MMF										
			13				Intel Express 220T stackable Hub	114	100FX 1/1	12	12	HS Basement-South	
	ML 18	1	2/12 MMF										
			1-126	HS 1E			Intel Express 520T Switch	107	1000SX 1/1	12	11	2/1 4006 b1	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 1E	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 1E	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 1E	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
					n/a		Intel Express 10/100 stackable hub			24	24	HS 1E	
					n/a		Intel Express 10/100 stackable hub			24	18	HS 1E	
					n/a		Intel Express 10/100 stackable hub			24	13	HS 1E	
													APC 1400
	ML 03	1	4/12 MMF										
			1-96	HS 1W			Intel Express 520T Switch	106	1000SX 1/1	12	11	b1c1r1s2	
							Intel Express 520T Switch		100FX1/2	24	1	b1c1r1s2	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 1E	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 1E	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 1E	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 1E	
													APC 1400
	UL 02	1	2/12 MMF										
			1-117	HS 2-W			Intel Express 520T Switch	112	1000SX 1/1	12	10	4/3 Of 4006b1	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
					n/a		Intel Express 10/100 stackable hub			24	24	HS 2-W	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 2-W	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 2-W	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 2-W	
					n/a		Intel Express 10/100 stackable hub			24	21	HS 2-W	
	UL 18	1											APC 1400
			2/12 MMF										
			1-98	HS 2-E			Intel Express 520T Switch	110	1000SX 1/1	12	10	3/2 of 4006b1	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 2-E	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 2-E	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 2-E	
					n/a		Intel Express 10/100 stackable hub			24	24	HS 2-E	
													APC 1400

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
2	LL 23 server rm	1	1-109	Intel 410T			Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Switch-B2-SR	
				Intel 410T			Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Switch-B2-SR	
				Intel 410T			Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Switch-B2-SR	
				Intel 410T			Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Switch-B2-SR	
				Intel 410T			Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Switch-B2-SR	
													APC 1400
		2	Fiber	510 Switch-B2-SR			Intel 510T swtich	136	1000sx 1/1	24	17	2/2 of 4006 b2	
				4006 b2			4006	150	4 1000 -x modules fully populated = 24 GBIC + 2 CAT adapter	0	0	to 4/6 of HS 4006	
													APC 1400
		3	1-132	Intel 410T			Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Switch-B2-SR	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
				Intel 410T			Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Switch-B2-SR	
				Intel 410T			Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Switch-B2-SR	
				Intel 410T			Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Switch-B2-SR	
				Intel 410T			Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Switch-B2-SR	
				Intel 410T			Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Switch-B2-SR	
													APC 1400
	ML 17 LAN	1	2/12 MMF										
			1-109	510 B2-1W			Intel Express 510T Switch	138	1000SX 1/1	24	10	3/1 of 4006 b2	
					n/a		Intel(R) Express 410T Standalone Switch	unmanagable		24	21	HS 2-W	
					n/a		Intel(R) Express 410T Standalone Switch	unmanagable		24	24	HS 2-W	
					n/a		Intel(R) Express 410T Standalone Switch	unmanagable		24	24	HS 2-W	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
							Switch						
					n/a		Intel(R) Express 410T Standalone Switch	unmanagable		24	21	HS 2-W	
													APC 1400
	ML 08 LAN	1	2/12 MMF										
			1-96	510-B2-1E			Intel Express 510T Switch	137	1000SX 1/1	24	11	3/3 of 4006 b2	
					n/a		Intel(R) Express 410T Standalone Switch	unmanagable		24	21	510-B2-1E	
					n/a		Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510-B2-1E	
					n/a		Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510-B2-1E	
													APC 1400
	UL 08 LAN	1	2/12 MMF										
			1-144	510 Bldg2-2East Lan			Intel Express 510T Switch	139	1000SX 1/1	24	5	3/2 of 4006 b2	
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Bldg2-2East Lan	
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Bldg2-2East Lan	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
							Switch						
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Bldg2-2East Lan	
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Bldg2-2East Lan	
							Intel(R) Express 410T Standalone Switch	unmanagable		24	18	510 Bldg2-2East Lan	
													APC 1400
	UL 15 LAN	1	2/12 MMF										
			1-156	510 Bldg2-2Lan West			Intel Express 510T Switch	140	1000SX 1/1	24	15	2/4 of 4006 b2	
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Bldg2-2Lan West	
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Bldg2-2Lan West	
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Bldg2-2Lan West	
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Bldg2-2Lan West	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Bldg2-2Lan West	
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	510 Bldg2-2Lan West	
3	suite 5	1	Fiber										
			1-72 plus 1-96	Bldg3 Suite5			520T	109	1000 sx 1/1	12	11		
					n/a		220T			24	24	Bldg3 Suite5	
					n/a		220T			24	24	Bldg3 Suite5	
					n/a		220T			24	24	Bldg3 Suite5	
					n/a		220T			24	19	Bldg3 Suite5	
					n/a		220T			24	24	Bldg3 Suite5	
					n/a		220T			24	24	Bldg3 Suite5	
													APC 1400
	suite 4	1	Fiber										
			1-108	B3-S4L			510T	123	1000 sx 1/1	24	24	4/4 of 4006 b1	
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	B3-S4L	
							Intel(R) Express 410T Standalone Switch	unmanagable		24	24	B3-S4L	
							Intel(R)	unmanagable		24	24	B3-S4L	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS	
							410T Standalone Switch							
							Intel(R) Express 410T Standalone Switch	unmanagable		24	19	B3-S4L		
													APC 1400	
	suite 3	1	Fiber											
			1-37	Bldg3 Suite3			520T	108	1000 sx 1/1	12	12	4/2 of 4006 b1		
					n/a		220T			24	24	Bldg3 Suite3		
4	S6 UL 04 server RM	1	fiber											
			88											
		2	fiber											
						RossInternet	3640	205.232.30.1						
						pixfirewall	pix 515	192.168.2.3						
						ross-gw	3640							
						vpn concentrator		3					inside and outside	
			MS520T Public			520T	205.232.30.100	100FX 1/1	12	1	3524 with cat5 dmz only			
			Bldg4 Suite6 .111			520T routing switch	111	1000sx 1/1 plus 100FX 7/8			2/2 of 4006 b1			
			Bldg4 Suite6 .104			520T	104	1000 sx 1/1	12	11	3/6 of 4006 b1			
				n/a		220T			24	18	Bldg4 Suite6 .104			
				n/a		220T			24	24	Bldg4 Suite6 .104			
				n/a		220T			24	24	Bldg4 Suite6 .104			
				n/a		220T			24	24	Bldg4 Suite6 .104			
			cat 3524			3524			24	2	pix dmz			

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
				410T			410T standalone						
				210T			210T		100 FX 1/1	12	1	serve as the media converter to 3640 E1/1 10.0.0.1	
													APC 2200
													APC 2200
	suite 5	1	fiber										
			10		n/a		210T stackable Hub		100 FX 1/1	12	10	Bldg4 Suite6 .111	
	suite 4	1	fiber										
			24		n/a		220T stackable Hub	119	100 FX 1/1	12	12	Bldg4 Suite6 .111	
					n/a		220T hub			24	4	backplane connect to the up one	
	suite 3	1	fiber										
			22		n/a		220T stackable Hub		100 FX 1/1	12	12	Bldg4 Suite6 .111	
					n/a		220T hub			24	10	backplane connect to the up one	
	suite 2	1	fiber										
			47		n/a		220T stackable Hub	120	100 FX 1/1	12	12	Bldg4 Suite6 .111	
					n/a		220T hub			24	24	backplane connect to the up one	
	suite 1	1	fiber										
			29		n/a		220T stackable Hub	118	100 FX 1/1	12	12	Bldg4 Suite6 .111	
					n/a		220T hub			24	17	backplane connect to the up one	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
5	LL16	1	fiber										
			1-85 + 4 "Modems"	Bldg5-3508			3508	125	7			2/5 of HS 4006	
				BLDG5 Switch Room			510T	127	1000sx 1/1	24	16	Bldg5-3508	
				410T			standalone			16	21	BLDG5 Switch Room	
				410T			standalone			16	14	BLDG5 Switch Room	
				410T			standalone			16	16	BLDG5 Switch Room	
				410T			standalone			16	16	BLDG5 Switch Room	
				410T			standalone			16	16	BLDG5 Switch Room	
				410T			standalone			16	14	BLDG5 Switch Room	
													APC 1400
	LL 48	1	fiber										
			1-78	520-Bldg5-Lower-North East			520T	128	1000sx 1/1	12	8	Bldg5-3508	
				410T			standalone			16	16	520-Bldg5-Lower-North East	
				410T			standalone			16	16	520-Bldg5-Lower-North East	
				410T			standalone			16	16	520-Bldg5-Lower-North East	
				410T			standalone			16	16	520-Bldg5-Lower-North East	
				410T			standalone			16	16	520-Bldg5-Lower-North East	
													APC 1400
	ML 07 LAN	1	fiber										

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
			1-46	520-Bldg5-1st West			520T	130	1000sx 1/1	12	4	Bldg5-3508	
				410T			standalone			16	16	520-Bldg5-1st West	
				410T			standalone			16	16	520-Bldg5-1st West	
				410T			standalone			16	16	520-Bldg5-1st West	
													APC 1400
	ML 06 LAN	1	fiber										
			1-42	520-Bldg5-1st Eest			520T	129	1000sx 1/1	12	12	Bldg5-3508	
				410T			standalone			16	16	520-Bldg5-1st Eest	
				410T			standalone			16	16	520-Bldg5-1st Eest	
													APC 1400
	UL 18 LAN	1	fiber										
			1-90	510-Bldg5-2nd West			520T	132	1000sx 1/1	24	13	Bldg5-3508	
				410T			standalone			16	16	510-Bldg5-2nd West	
				410T			standalone			16	13	510-Bldg5-2nd West	
													APC 1400
	UL 17 LAN	1	fiber										
			1-141	510-Bldg5-2nd Eest			520T	131	1000sx 1/1	24	12	Bldg5-3508	
				410T			standalone			16	16	510-Bldg5-2nd Eest	
				410T			standalone			16	16	510-Bldg5-2nd Eest	
				410T			standalone			16	16	510-Bldg5-2nd Eest	
				410T			standalone			16	10	510-Bldg5-2nd Eest	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
				410T			standalone			16	1	510-Bldg5-2nd Eest	
				410T			standalone			16	0	510-Bldg5-2nd Eest	
													APC 1400
10	LL 11	1	fiber										
				Switch			3508	135	GBIC 5/8			1/1 to 2/6 of HS 4006	
				510-B10-Server Room			510T	144	1000 sx 1/1	24	24	3508 of the b10	
				410T			410T standalone			24	24	510-B10-Server Room	
				410T			410T standalone			24	24	510-B10-Server Room	
				410T			410T standalone			24	24	510-B10-Server Room	
				410T			410T standalone			24	24	510-B10-Server Room	
													APC 1400
		2		B10-Public IP 520			520T	205.232.30.201	1000 LX 1/1	12	9	DMZ switch in B1	
				410T			410T standalone			24	24	510-B10-Server Room	
				410T			410T standalone			24	24	510-B10-Server Room	
				410T			410T standalone			24	24	510-B10-Server Room	
				410T			410T standalone			24	24	510-B10-Server Room	
				410T			410T standalone			24	24	510-B10-Server Room	
													APC 1400
			193-330	410T			410T standalone			24	24	510-B10-Server Room	
				410T			410T standalone			24	24	510-B10-Server Room	
				410T			410T standalone			24	24	510-B10-Server Room	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS
				410T			410T standalone			24	24	510-B10-Server Room	
				410T			410T standalone			24	24	510-B10-Server Room	
				410T			410T standalone			24	24	510-B10-Server Room	
													APC 1400
	LL 08	1	1001 - 1144	510 Bld10 lower level			510T	141	1000 sx 1/1	24	20	3508 of the b10	
				410T			410T standalone			24	24	510 Bld10 lower level	
				410T			410T standalone			24	24	510 Bld10 lower level	
				410T			410T standalone			24	24	510 Bld10 lower level	
				410T			410T standalone			24	24	510 Bld10 lower level	
				410T			410T standalone			24	24	510 Bld10 lower level	
				410T			410T standalone			24	24	510 Bld10 lower level	
				410T			410T standalone			24	24	510 Bld10 lower level	
		2	fiber										APC 1400
			2001-2144	410T			410T standalone			24	24	510 Bld10 lower level	
				410T			410T standalone			24	24	510 Bld10 lower level	
				410T			410T standalone			24	24	510 Bld10 lower level	
				410T			410T standalone			24	24	510 Bld10 lower level	
				410T			410T standalone			24	24	510 Bld10 lower level	
				410T			410T standalone			24	24	510 Bld10 lower level	
													APC 1400
	ML 23	1	1-142	410T			410T standalone			24	24	510 B10-Lower Lan	
				410T			410T standalone			24	24	510 B10-Lower Lan	
				410T			410T			24	24	510 B10-	

Building #	Closet #	Rack #	Patch #	Switch	Hub	Routers +	Model	Switch IP	Fiber port used	CAT5 ports	CAT5 Ports used	Uplink to	UPS	
							standalone					Lower Lan		
				410T			410T standalone			24	24	510 B10-Lower Lan		
				410T			410T standalone			24	24	510 B10-Lower Lan		
				410T			410T standalone			24	24	510 B10-Lower Lan		
													APC 1400	
													APC 1400	
		2	fiber											
			145-202	510 B10-Lower Lan			510T	143		24	11	3508 of the b10		
				410T			410T standalone			24	24	510 B10-Lower Lan		
				410T			410T standalone			24	24	510 B10-Lower Lan		
				410T			410T standalone			24	11	510 B10-Lower Lan		
Storage 1	1	1	fiber											
			7 direct run no panel	510T			510T	142	1000LX 1/1	24	7	8 of 3608 in building		
Storage 2	1	1	42 direct runs no panel	410T			410T standalone					storage 1 by cat5		
				410T			410T standalone						storage 1 by cat5	