

ANDERSON UNION HIGH SCHOOL DISTRICT

**North Valley High School
20083 Olinda Rd**

**Oakview Charter School
20111 Olinda Rd**

**Anderson Community Day School
5250 West Anderson Dr**

Anderson CA 96007

**BELDEN IBDN GIGABIT SYSTEM 2400
CABLING SPECIFICATIONS**

**DESIGNED BY JASON EATMON
GLOBAL COMMUNICATIONS, LOCAL COMMITMENT**

TABLE OF CONTENT

TABLE OF CONTENT	1
SERVICE PROVIDER CRITERIA	2
PROPOSAL EVALUATION	3
GENERAL.....	3
SCHEDULE OF EVENTS	4
FORM AND CONTENT OF BID.....	4
INQUIRIES.....	5
PROPRIETARY DOCUMENTS	6
SUBMITTALS	6
CABLE PLANT SPECIFICATION.....	8
AND GUIDELINES	8
DIVISION 27 – COMMUNICATIONS.....	9
27 00 00 Communications	9
27 05 00 Common Work Results for Communications.....	9
27 08 00 Commissioning of Communications.....	10
27 10 00 STRUCTURED CABLING.....	11
27 11 00 Communications Equipment Room Fittings.....	21
27 13 00 Communications Backbone Cabling.....	25
27 15 00 Communications Horizontal Cabling	26
27 16 00 Communications Connecting Cords, Devices and Adapters	34
ANNEX A, ADDITIONAL INFORMATION.....	36
DIVISION 07 – THERMAL AND MOISTURE PROTECTION	36
07 80 00 FIRE AND SMOKE PROTECTION	36
07 84 00 Firestopping	36
INFORMATION FOR BIDDERS.....	38
BID FORM	42
BID BOND	46
DESIGNATION OF SUBCONTRACTORS	48
DESIGNATION OF SUBCONTRACTORS	49
INFORMATION REQUIRED OF BIDDER	50
CONTRACTOR'S CERTIFICATE REGARDING WORKERS' COMPENSATION.....	53
NONCOLLUSION AFFIDAVIT TO BE EXECUTED.....	54
BY BIDDER AND SUBMITTED WITH BID	54
ASBESTOS AND OTHER HAZARDOUS MATERIALS CERTIFICATION.....	55
LEAD BASED PAINT CERTIFICATION.....	56
PERFORMANCE BOND.....	58
PAYMENT BOND.....	61
A G R E E M E N T	64
ESCROW AGREEMENT FOR	69
SECURITY DEPOSITS IN LIEU OF RETENTION	69
GUARANTEE	72
SHOP DRAWING TRANSMITTAL FORM	73
SUPPLEMENTAL CONDITIONS	74

SERVICE PROVIDER CRITERIA

The successful bidder(s) will be responsible for participating in the Federal E-Rate program.

In addition, the District may use this bid to issue purchase orders and pay for items on a purchase order that are not eligible for E-RATE discounts. The District will pay the vendor using District funds for these purchases.

Prices must be held firm for the duration of the E-Rate Year 12 fiscal year ending September 30, 2010 or until all work associated with the project(s) are complete (including any SLD approved extensions)

These projects and services depend on partial funding from the E-rate program.

- Anderson Union High School District expects each Service Provider to make themselves thoroughly familiar with any rules or regulations regarding the E-rate program.
- All contracts entered into as a result of this RFP will be contingent upon the specific funding of the FRN at the discount percentage submitted for.
- The maximum percentage the Anderson Union High School District will be liable for is the pre-discount amount minus the funded amount as shown on the form 471 Block 5. The Service Provider will be responsible for invoicing the Schools and Libraries Division for the funded amount.
- NO billing or work can take place before July 1, 2009.
- In the event of questions during the E-Rate audit process, the successful vendor is expected to reply within 3 days to questions associated with their proposal.
- The contractor is responsible for providing a valid SPIN (Service Provider Identification Number) at the time the bid is submitted
- ***The contractor is responsible for providing an FCC Registration Number (FRN) with their proposal. Any potential bidder found to be in Red-Light Status will be disqualified from participation in the bidding process and will be considered non-responsive.***
- All work is subject to the 100% approval of the project or purchase by the FCC under the E-rate discount program of the Telecommunications Act of 1996.
- No change orders will be allowed for the work resulting from this posting.
- The Service Provider will be required to send copies of all forms and invoices submitted to SLD prior to invoicing the SLD to the District for our records.

All Service Providers will be responsible for procuring the discounted amount from the SLD. Anderson Union High School District will not provide the form 472 (BEAR form reimbursement process).

The Anderson Union High School District reserves the right to deny any or all proposals associated with this RFP, even with SLD funding approval. The district reserves the right to accept the pricing proposal solely dependent upon SLD approval.

In addition, the district reserves the right to fund, (proceed with project or purchase) or not to fund regardless of E-rate approval.

The District requires certification by the awarded contractor, prior to project commencement, concerning criminal records check in accordance with California law.

Proposals must be received no later than Friday, February 6th by 2:00 p.m.

All proposals are to contain costs for taxes and shipping as separate items. All proposals are to indicate which items are not eligible for E-Rate discount.

Proposals must be submitted in writing to:

Anderson Union High School District
Attn: Megan Curtis
1469 Ferry St
Anderson CA 96007

Late proposals will not be accepted.

All requests for information (RFI) should be made in writing via e-mail to Megan Curtis at mcurtis@auhsd.net. Be aware that all parties will be copied on the questions and responses.

PROPOSAL EVALUATION

The technical specifications included in this Request for Bid are for the following technologies:

Cable infrastructure
LAN electronics

Questions concerning this Bid should be directed to Megan Curtis, Chief Financial Official, at 530-365-2741 or by email at mcurtis@auhsd.net. Questions may also be posed at the Pre-Bid Conference and job walk. Bidders are expressly notified to not contact any other Anderson Union High School District (AUHSD) personnel or consultants for any reason prior to award. The only exception to this is in the case of ongoing operations with a current provider of services to Anderson Union High School District. Failure to comply will result in rejection of the bid.

The contractor who is awarded will be expected to deliver a fully functioning solution for all systems, i.e. a turnkey solution. Each of the technologies is addressed in the following sections.

GENERAL

A Pre-bid conference and job walk will be held at 8:00 a.m. at AUHSD at 1469 Ferry St, Anderson CA on January 20, 2009. Following the Pre-Bid conference a site survey will be conducted. All bidders intending to submit a bid *must* attend. Attendance is limited to no more than four representatives from each bidding firm. Failure to attend the conference and site survey will disqualify a vendor from further consideration.

SCHEDULE OF EVENTS

Bid Due Date

No later than 2:00 p.m. Pacific Standard Time, February 9, 2009 the bid must be submitted to:

Anderson Union High School District
Attn: Megan Curtis
1469 Ferry St
Anderson CA 96007

FORM AND CONTENT OF BID

The bid must be submitted in accordance with the instructions contained herein. Each question or statement in the RFB must be responded to with language such as “Company Name has read, understood and will provide as specified” or “Company Name takes exception for the following reason _____ “. Any other language is not acceptable and will be cause for rejection of the bid.

Bidders are cautioned that bids, which do not follow the form required by this RFB, will be subject to rejection without review. However, bidders may include any additional material they wish.

The bidder will submit their response to the RFB in two separate sealed packages. One package will contain only pricing components of the RFB (including Appendix B Pricing Schedule, a “Schedule A” as required, Maintenance Pricing, Pre/Post Cutover and Bid Bond). The Appendix B Pricing Schedule must be at the beginning of this package. This shall be delivered in 2 three-ring binders with the first being the original and the second being an exact duplicate. A CD will also be included in the Pricing Package with all pricing schedules in MS Excel format. The second sealed package will contain the Bid Response (body of the RFB) with a parts list (without pricing) with one original and 3 complete copies (four sets) plus one electronic copy (CD’s with MS Excel and Word files. No PDF’s except for technical manuals or brochures). The packages shall be clearly marked stating the Vendor’s Name, project name (AUHSD Communications Infrastructure Modernization) and either “Pricing” or “RFB Response”. Any other format will result in automatic disqualification. Do not include any form of pricing (Appendix B, Maintenance, Pre/Post Cutover or Schedule A) in the RFB Response package. Any deviation from this format will result in the automatic rejection of the bid. Be advised that under the guidelines established for this bid process any pricing information included in the Bid Response submittal will be cause for automatic rejection of the bid.

The following section is the California Public Contract Code section governing this type of “Electronic Data Processing” system acquisition and will be adhered to.

CA P.C.C. 12102.b.(2) states “Solicitations for acquisitions based on evaluation criteria other than cost alone shall provide that sealed cost bids shall be submitted and that they shall be opened at a time and place designated in the solicitation for bids and bids. Evaluation of all criteria, other than cost, shall be completed prior to the time designated for public opening of cost bids, and the results of the completed evaluation shall be published immediately before the opening of cost bids. The state's contact person for administration of the solicitation shall be identified in the solicitation for bids and bids, and that person shall execute a certificate under penalty of perjury, which shall be made a permanent part of the official contract file, that all cost bids received by the state have been maintained sealed and under lock and key until the time cost bids are opened.”

Bidder will submit Bid Bonds as a part of the Pricing Package

INQUIRIES

Questions concerning this RFB should be directed to Megan Curtis of AUHSD
Email – mcurtis@auhsd.net

Vendors are hereby explicitly directed not to contact any other AUHSD personnel for any reason other than ongoing business operations.

EVALUATION CRITERIA

Bid Evaluation Criteria include but are not limited to:

Equipment

Systems Architecture
Scalability
Reliability
Product Life Cycle
RFB Specified Features
Networking
Cable
LAN Electronics Capabilities

Vendor

Master Agreement Compliance
Systems Installed
Vendor Stability
Manufacturer Stability
Installation Capabilities
Vendor/Manufacturer Relationship
Project Management

Quality of Response
Service Reputation
Maintenance Policy
Experience with the Bid System

System Pricing

Purchase
Maintenance
Overall Life Cycle Cost of Ownership

PROPRIETARY DOCUMENTS

The information contained in this RFB and the RFB itself are proprietary in nature and shall not under any circumstances be released, in part or in whole, to third parties without the prior written approval of AUHSD.

All proposals received by AUHSD will be considered a Public Record as defined in section 6252 of the California Government Code and shall be open to public inspection, except to the extent the Proposer designates trade secrets or other proprietary material to be confidential. Any documentation, which the Proposer believes to be a trade secret, must be provided to the AUHSD in a separate envelope or binder and must be clearly marked as a trade secret. Prices and terms of payment shall be publicly available regardless of any designation to the contrary. AUHSD will endeavor to restrict distribution of material designated as a trade secret to only those individuals involved in the review and analysis of the proposals.

SUBMITTALS

Bidders are required to submit the following with their bid:

Brochures, technical manuals, installation guides and user's guides giving technical and operational information about the bid system(s) and all instruments.

A copy of the bidder's purchase contract.

A copy of the bidder's standard maintenance contract, in addition to any maintenance contract options, including but not limited to, response time options, prepayment maintenance plans, and various length of term (i.e. 2nd year, 3rd through 5th year, etc.) options.

A copy of all warranties related to any equipment or services provided.

A parts list of all components bid without pricing to be included in Bid Response package.

Schedule A (included in Pricing Package Only) for each site showing all components of the bid system including software, hardware and labor in the table format as follows:

Qty	Description	Part Number	Manufacturer	Unit Price	Ext. Price

Please ensure that all pricing components of the Schedule A add up to the total price bid. Failure to comply with this may result in Bid disqualification.

Any Software License agreements.

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CABLE PLANT SPECIFICATION AND GUIDELINES

DIVISION 27 – COMMUNICATIONS

27 00 00 Communications

27 05 00 Common Work Results for Communications

27 05 26 Grounding and Bonding for Communications Systems

27 05 26.01 General

27 05 26.01.A The facility should be equipped with a Telecommunications Bonding Backbone (TBB). This backbone should be used to ground all telecommunications cable shields, equipment, racks, cabinets, raceways, and other associated hardware that has the potential to act as a current-carrying conductor. The TBB should be installed independent of the building's electrical and building ground and should be designed in accordance with the recommendations contained in the ANSI/TIA/EIA-J-STD-607 Telecommunications Bonding and Grounding Standard.

27 05 26.01.B The main entrance facility/equipment room in each building should be equipped with a telecommunications main grounding bus bar (TMGB). Each telecommunications room should be provided with a telecommunications ground bus bar (TGB). The TMGB should be connected to the building electrical entrance grounding facility. The intent of this system is to provide a grounding system that is equal in potential to the building electrical ground system. Therefore, ground loop current potential is minimized between telecommunications equipment and the electrical system to which it is attached.

27 05 26.01.C All racks, metallic backboards, cable sheaths, metallic strength members, splice cases, cable trays, etc. entering or residing in the TR or ER should be grounded to the respective TGB or TMGB using a minimum #6 AWG stranded copper bonding conductor and compression connectors.

27 05 26.01.D All wires used for telecommunications grounding purposes should be identified with green or with a wrap of green tape insulation. Non-insulated wires should be identified at each termination point with a wrap of green tape. All cables and bus bars should be identified and labeled in accordance with the section 28 08 01, *System Documentation*, of this specification.

27 05 26.02 Grounding and bonding system installation

27 05 26.02.A The TBB should be designed and/or approved by a qualified PE, licensed in the state that the work is to be performed. The TBB should adhere to the recommendations of the ANSI/TIA/EIA-J-STD-607 standard, and should be installed in accordance with best industry practice.

27 05 26.02.B A licensed electrical contractor should perform installation and termination of the main bonding conductor to the building service entrance ground.

27 05 53 Identification for Communications Systems

27 05 53.01 General

Labeling should be done in accordance with the recommendations made in the ANSI/TIA/EIA-606-A document, manufacturer's recommendations and best industry practices.

27 08 00 Commissioning of Communications

27 08 01 System Documentation

27 08 01.01 General

27 08 01.01.A Upon completion of the installation, the telecommunications contractor should provide three (3) full documentation sets to the Engineer for approval.

27 08 01.01.B Documentation should be submitted within ten (10) working days of the completion of each testing phase (e.g. subsystem, cable type, area, floor, etc.). This is inclusive of all test results and draft as-built drawings. Draft drawings may include annotations done by hand. Machine-generated (final) copies of all drawings should be submitted within 30 working days of the completion of each testing phase. At the request of the Engineer, the telecommunications contractor should provide copies of the original test results.

27 08 01.01.C The Engineer may request that a 10% random field re-test be conducted on the cable system, at no additional cost, to verify documented findings. Tests should be a repeat of those defined above. If findings contradict the documentation submitted by the telecommunications contractor, additional testing can be requested to the extent determined necessary by the Engineer, including a 100% re-test. This re-test should be at no additional cost to the Owner.

27 08 02 Test Results Documentation

27 08 02.01 General

27 08 02.01.A Test documentation should be provided on disk within three (3) weeks after the completion of the project. The disk should be clearly marked on the outside front cover with the words "Project Test Documentation", the project name, and the date of completion (month and year). The results should include a record of test frequencies, cable type, conductor pair and cable (or outlet) I.D., measurement

direction, reference setup, and crew member name(s). The test equipment name, manufacturer, model number, serial number, software version and last calibration date will also be provided at the end of the document. Unless the manufacturer specifies a more frequent calibration cycle, an annual calibration cycle is anticipated on all test equipment used for this installation. The test document should detail the test method used and the specific settings of the equipment during the test as well as the software version being used in the field test equipment.

27 08 02.01.B The field test equipment should meet the requirements of ANSI/TIA/EIA-568-B. The appropriate level III tester should be used to verify Category 6 cabling systems.

27 08 02.01.C Printouts generated for each cable by the wire test instrument should be submitted as part of the documentation package. Alternately, the telecommunications contractor may furnish this information in electronic form (3.5" diskette, CD or memory stick). These diskettes, CDs or memory sticks should contain the electronic equivalent of the test results as defined by the bid specification and be of a readable format.

27 08 02.01.D When repairs and re-tests are performed, the problem found and corrective action taken should be noted, and both the failed and passed test data should be documented.

27 08 03 As-Built Drawings

27 08 03.01 General

27 08 03.01.A The drawings are to include cable routes and outlet locations. Outlet locations should be identified by their sequential number as defined elsewhere in this document. Numbering, icons, and drawing conventions used should be consistent throughout all documentation provided. The Owner will provide floor plans in paper and electronic formats on which as-built construction information can be added. These documents will be modified accordingly by the telecommunications contractor to denote as-built information as defined above and returned to the Owner.

27 08 03.01.B The Contractors should annotate the base drawings and return a hard copy (same plot size as originals) and electronic form.

27 10 00 STRUCTURED CABLING

27 10 01 Scope

27 10 01.01 General

27 10 01.01.A This document describes the products and execution requirements relating to furnishing and installing Telecommunications Cabling at the new or remodeled buildings for the Anderson Union High School District. Backbone and horizontal cabling comprised of copper cabling, and support systems are covered under this document.

27 10 01.01.B All cables and related terminations, support and grounding hardware should be furnished, installed, wired, tested, labeled, and documented by the Telecommunications contractor as detailed in this document.

27 10 01.01.C Products specifications, general design considerations, and installation guidelines are provided in this document. Quantities of telecommunications outlets, typical installation details, cable routing and outlet types will be provided as an attachment to this document. If the bid documents are in conflict, this specification should take precedence. The successful Vendor should meet or exceed all requirements for the cable system described in this document.

27 10 02 Regulatory references

27 10 02.01 General

27 10 02.01.A All work and materials should conform in every detail to the rules and requirements of the National Fire Protection Association, the local Electrical Code and current manufacturing standards.

27 10 02.01.B All materials should be UL Listed and should be marked as such. If UL has no published standards for a particular item, then other national independent testing standards should apply and such items should bear those labels. Where UL has an applicable system listing and label, the entire system should be so labeled.

27 10 02.02 Reference list

27 10 02.02.A The cabling system described in this is derived from the recommendations made in recognized telecommunications industry standards. The following documents are incorporated by reference:

- ANSI/TIA/EIA-568-B.1 and its addenda
- ANSI/TIA/EIA-568-B.2 and its addenda
- TIA-569-B and its addenda
- ANSI/TIA/EIA-606-A
- ANSI/TIA/EIA-J-STD-607
- ANSI/NECA/BICSI-568

- ISO/IEC 11801 2nd edition
- CENELEC EN50173

27 10 02.02.B If this document and any of the documents listed above are in conflict, then the more stringent requirement should apply. All documents listed are believed to be the most current releases of the documents. The Contractor has the responsibility to determine and adhere to the most recent release when developing the proposal for installation.

27 10 02.02.C This document does not replace any code, either partially or wholly. The contractor must be aware of local codes that may impact this project.

27 10 03 General condition –Approved Vendor

27 10 03.01 General

27 10 03.01.A The bidder must be a Belden-authorized Certified System Vendor (hereinafter referred to as Belden CSV) of the Belden IBDN Gigabit System 2400. The bidder must have successfully completed all Belden IBDN design and installation training provided by Belden.

27 10 03.01.B The bidder, including any subcontractor, should show proven expertise in the implementation of cabling projects. This expertise can be illustrated through the inclusion of details of at least three (3) projects involving the design and installation of a Category 6 unshielded twisted-pair (hereinafter referred to as UTP) cabling systems within the past two (2) year period. Names, addresses and telephone numbers of references for the three (3) projects should be included.

27 10 03.01.C The successful bidder should hereinafter be referred to as the Vendor.

27 10 03.01.D The Vendor should accept complete responsibility for the design, installation, acceptance testing and certification of the Belden IBDN Gigabit System 2400.

27 10 03.01.E The Vendor should provide proof of current Belden CSV status and should deliver the Belden certification of the installed Belden IBDN Gigabit System 2400 to the Purchaser.

27 10 04 General condition –Approved Installer

27 10 04.01 General

27 10 04.01.A The bidder must be a Belden-authorized Certified System Vendor (hereinafter referred to as Belden CSV) of the Belden IBDN Gigabit System 2400. The bidder must have successfully completed all Belden IBDN design and installation training provided by Belden.

27 10 04.01.B The installation of the Belden IBDN Gigabit System 2400 should be performed by either employees of the Vendor or subcontractors. Organizations assigned as subcontractors should be required to provide proof of Belden authorization to install a Belden IBDN Gigabit System 2400.

27 10 04.01.C All work should be performed and supervised by technicians and managers qualified to install and test the Belden IBDN Gigabit System 2400 in accordance with Belden requirements. The supervisor should have successfully completed Belden IBDN installation training provided by Belden.

27 10 04.01.D In the event subcontractors are used for any portion of the installation or acceptance testing, the Vendor should be responsible for any subsequent corrective action required on that portion.

27 10 05 General condition –Approved products

27 10 05.01 Approved products

27 10 05.01.A Here is a list of approved products.

- Approved 4-pair UTP Cable: Belden IBDN Gigaflex 2400 Cable series (Cat. 6) or the Belden IBDN MediaTwist series (Cat. 6): Belden
- Approved high pair count UTP Cable manufacturer: Belden
- Approved UTP connector product manufacturer: Belden
- Approved Rack and Cabinet manufacturer: Belden
- Approved IDC cross-connect system manufacturer: Belden
- Approved Patch Panel manufacturer: Belden
- Approved UTP Patch Cord manufacturer: Belden

27 10 05.02 Equivalent products

27 10 05.02.A Due to the nature and type of communications all products, including but not limited to faceplates, jacks, patch panels, racks, IDC blocks, copper cable products and patch cords, for the purpose of this document, should be manufactured by Belden. There will be no substitutions allowed.

27 10 07 Work Included

27 10 07.01 General

27 10 07.01.A The work included under this specification consists of furnishing all labor, equipment, materials, and supplies and performing all operations necessary to complete the installation of this structured cabling system in compliance with the specifications and drawings. The Telecommunications contractor will provide and install all of the required material to form a complete system whether specifically addressed in the technical specifications or not.

27 10 07.01.B The work should include, but not be limited to the following:

- Pre-Register project as a Belden IBDN Certified Project with Belden.
- Furnish and install a complete telecommunications wiring infrastructure.
- Furnish, install, and terminate all UTP cable.
- Furnish and install all wall plates, jacks, patch panels, and patch cords.
- Furnish and install all required cabinets and/or racks as required and as indicated.
- Furnish any other material required to form a complete system.
- Perform channel testing (100% of horizontal and/or backbone links) and provide channel pass result report.
- Furnish test results of all cabling to the Owner on diskette, CD or memory stick and paper format, listed by each closet, then by workstation ID.
- Adhere and comply with all requirements of Belden programs.
- Provide Owner training and documentation (Testing documentation and As-built drawings).

27 10 08 Drawings specification

27 10 08.01 General

27 10 08.01.A It should be understood that the electrical details and drawings provided with the specification package are diagrammatic. They are included to show the intent of the specifications and to aid the telecommunications contractor in bidding the job. The telecommunications contractor should make allowance in the bid proposal to cover whatever work is required to comply with the intent of the plans and specifications.

27 10 08.01.B The telecommunications contractor should verify all dimensions at the site and be responsible for their accuracy.

27 10 08.01.C Prior to submitting the bid, the telecommunications contractor should call the attention of the Engineer to any materials or apparatus the telecommunications contractor believes to be inadequate and to any necessary items of work omitted.

27 10 09 Pre-project Submittals

27 10 09.01 General

27 10 09.01.A Under the provisions of this request for proposal, prior to the start of work the telecommunications contractor should:

- Submit copies of the certification of the company and names of staff that will be performing the installation and termination of the installation to provide proof of compliance of this spec.
- Submit appropriate cut sheets and samples for all products, hardware and cabling.
- Submit the Belden IBDN User Manual, at the completion of the project.
- Submit the Belden IBDN Application Guidelines (where applicable) for network technologies that will operate over the Belden IBDN Gigabit System 2400 at the completion of the project.

27 10 09.01.B Work should not proceed without the Owner's approval of the submitted items.

27 10 09.01.C The telecommunications contractor should receive approval from the Owners on all substitutions of material. No substituted materials should be installed except by written approval from the Owner.

27 10 10 Delivery, Storage and Handling

27 10 10.01 General

27 10 10.01.A Delivery and receipt of products should be at the site described in the section 27 10 01, *Scope*.

27 10 10.01.B Cable should be stored according to manufacturer's recommendations as a minimum. In addition, cable must be stored in a location protected from vandalism and weather. If cable is stored outside, it must be covered with opaque plastic or canvas with provision for ventilation to prevent condensation and for protection from weather. If air temperatures at cable storage location will be below 4.4 degree C (40 degrees F.), the cable should be moved to a heated 10 degrees C. (50

degrees F.) minimum location. If necessary, cable should be stored off site at the contractor's expense.

27 10 10.01.C If the telecommunications contractor wishes to have a trailer on site for storage of materials, arrangements should be made with the Owner.

27 10 11 Structured cabling overview

27 10 11.01 General

27 10 11.01.A The systems chosen should meet the specifications as described in this subsections.

The UTP-based cabling system shall have a 250 MHz Channel Bandwidth over a maximum distance of 100m (328 ft) and a positive channel Power Sum Attenuation-to-Crosstalk Ratio (PSACR) up to 250 MHz.

The UTP-based cabling system shall use matched components from a single manufacturer, and the cabling system shall be certified to deliver system performance over the lifetime of the applications for which the cabling system was originally designed to support.

All components used in the UTP-based cabling system shall be warranted for a period of 25 years from date of installation against defects in materials and/or workmanship.

The UTP-based cabling system shall comply with the following standards:

- ANSI/TIA-EIA-568-B.2-1 (Category 6 addenda)
- Class E ISO/IEC 11801 2nd edition
- Class E - CENELEC EN50173

The UTP-based cabling system should be capable of supporting the following applications:

- 2.4 Gb/s ATM (When using the same transmission technique as Gigabit Ethernet)
- 1.2 Gb/s ATM (When using the same transmission technique as Gigabit Ethernet)
- Gigabit Ethernet (1000BASE-T)
- Broadband Video
- 25/52/155/622 Mb/s ATM
- Fast Ethernet (100BASE-TX, 100BASE-T4)
- 100VG-AnyLAN

- TP-PMD
- Ethernet (10BASE-T)
- 4/16 Mb/s Token-Ring
- Baseband Video
- ARCnet/ARCnet Plus
- IBM System 370/3270
- IBM 3x - AS/400
- IBM 4700 Financial Communication System
- IBM 5080/6090 Graphics System
- EIA-232/EIA-422
- Voice

27 10 11.01.B The systems chosen should meet the performance specifications as described:

Parameters	Frequency	Standards*	Performance Requested
PSNEXT	100 MHz	37.1 dB	40.8 dB
	200 MHz	31.9 dB	35.6 dB
	250 MHz	30.2 dB	33.3 dB
Insertion Loss	100 MHz	21.3 dB	19.9 dB
	200 MHz	31.5 dB	29.3 dB
	250 MHz	35.9 dB	33.3 dB
PSACR	100 MHz	15.8 dB	20.9 dB
	200 MHz	0.4 dB	6.3 dB
	250 MHz	-5.8 dB	0.1 dB**
PSELFEXT	100 MHz	20.3 dB	25.8 dB
	200 MHz	14.2 dB	19.7 dB
	250 MHz	12.3 dB	17.8 dB
Return Loss	100 MHz	12.0 dB	14.0 dB
	200 MHz	9.0 dB	10.0 dB
	250 MHz	8.0 dB	9.0 dB
Propagation Delay		555 ns	490 ns
Delay Skew		50 ns	25 ns
Available Bandwidth		200 MHz	250 MHz

Worst case scenario for four-connector topology

*Based on ANSI/TIA/EIA-568-B.2-1 (Cat. 6 addenda – July 2002)
ISO/IEC 11801 2nd edition (September 2002)

**Positive PSACR @ 250 MHz

27 10 12 Testing and acceptance

27 10 12.01 General

27 10 12.01.A All cables and termination hardware should be 100% tested for defects in installation and to verify cabling system performance under installed conditions according to the requirements of ANSI/TIA/EIA-568-B. All pairs of each installed cable should be verified prior to system acceptance. Any defect in the cabling system installation including but not limited to cable, connectors, feed through couplers, patch panels, and connector blocks should be repaired or replaced in order to ensure 100% useable conductors in all cables installed.

27 10 12.02 Copper channel testing

27 10 12.02.A All twisted-pair copper cable links should be tested for continuity, pair reversals, shorts, opens and performance as indicated. Additional testing is required to verify Category performance. Horizontal cabling should be tested using a Level III test unit for category 6 performance compliance.

27 10 12.02.B Continuity - Each pair of each installed cable should be tested using a test unit that shows opens, shorts, polarity and pair-reversals, crossed pairs and split pairs. The test should be recorded as pass/fail as indicated by the test unit and referenced to the appropriate cable identification number and circuit or pair number. Any faults in the wiring should be corrected and the cable re-tested prior to final acceptance.

27 10 12.02.C Length - Each installed cable link should be tested for installed length using a TDR type device. The cables should be tested from patch panel to patch panel, block to block, patch panel to outlet or block to outlet as appropriate. The cable length should conform to the maximum distances set forth in the ANSI/TIA/EIA-568-B Standard. Cable lengths should be recorded, referencing the cable identification number and circuit or pair number. For multi-pair cables, the shortest pair length should be recorded as the length for the cable.

27 10 12.02.D Category 6 Performance - Performance testing should be done according to the published ANSI/TIA/EIA-568-B.2-1 Standard.

27 10 13 Warranty and services

27 10 13.01 Qualification of system

27 10 13.01.A The installed Belden IBDN Gigabit System 2400 will be covered by a certification program provided by Belden and the Certified System Vendor.

27 10 13.01.B Telecommunications spaces and pathways in new buildings or in those buildings having undergone major renovations in the preceding three (3) years should conform to the requirements per TIA-569-B. In cases of installations in restrictive spaces and pathways, where it is impossible to implement the aforementioned requirements, the cabling runs should not exceed the maximum distances specified in

ANSI/TIA/EIA-568-B and should not in any manner diminish the performance of the Belden IBDN Gigabit System 2400.

27 10 13.01.C The installed Belden IBDN Gigabit System 2400 should conform to all applicable local building and electrical codes.

27 10 13.02 Certification

27 10 13.02.A To qualify for system certification, Belden IBDN Gigabit System 2400 should be designed, engineered, installed and tested by a Belden CSV.

27 10 13.02.B To qualify for system certification, the installed cabling system should fully comply with all relevant Belden IBDN design and applications guidelines, including acceptable deviations as specified in the latest release of the Belden IBDN Certification Guide.

27 10 13.02.C To qualify for system certification, only Belden approved products should be used to ensure end-to-end system performance. The full Belden product warranty and lifetime performance assurance can be provided only to systems built using products supplied by Belden for the Belden IBDN system.

27 10 13.02.D Belden will not provide certification coverage for other manufacturers' products.

27 10 13.03 Lifetime application assurance

27 10 13.03.A Belden IBDN certification should provide the assurance that all present and future applications engineered for the performance level of the cabling system used will work for the lifetime of the certified Belden IBDN Gigabit System 2400.

27 10 13.03.B Should the certified Belden IBDN Gigabit System 2400 fail to support the application(s) designed to operate over it—whether at the time of cutover to the new cabling system, during subsequent use, or after upgrading to a newer supported application (for example, to a Gigabit Ethernet or an ATM network from a lower-speed network environment)—Belden and the Vendor should take prompt corrective action.

27 10 13.04 25-year product warranty

27 10 13.04.A Belden IBDN certification should provide a twenty-five year product warranty for all Belden IBDN passive components used in the installed Belden IBDN Gigabit System 2400. Defective and/or improperly installed products should be replaced and/or correctly installed at no cost to the Purchaser.

27 10 13.05 Purchaser Responsibility

27 10 13.05.A The Vendor should provide a Belden IBDN User Manual to the Purchaser. This document describes essential system elements and specifies Purchaser responsibilities for maintaining the integrity of the installed cabling system over time. The Belden IBDN User Manual contains guidelines for cabling system expansions and modifications - such as relocations, additions and changes to services - in addition to labeling and record-keeping requirements.

27 10 13.05.B The Purchaser accepts that the benefits offered by certification are nullified if non-approved products are introduced into the installed Belden IBDN Gigabit System 2400. To regain system certification in such cases, a Belden CSV must correct and approve all modifications deemed necessary by Belden.

27 11 00 Communications Equipment Room Fittings

27 11 13 Communications Entrance Protection

27 11 13.01 Copper Cable Protection Units

27 11 13.01.A All copper circuits should be provided with protection between each building with an entrance cable protector panel. All building-to-building circuits should be routed through this protector. The protector should be connected with a #6 AWG copper bonding conductor between the protector ground lug and the TC ground point.

27 11 16 Communications Cabinets, Racks, Frames and Enclosures

27 11 16.01 Racks

27 11 16.01.A All racks and wire management should be Chatsworth specific. The equipment rack should provide vertical cable management and support for the patch cords at the front of the rack and wire management, support, and protection for the horizontal cables inside the legs of the rack.

The wall mount cabinet should be:

Ordering Number	Description
11900-724	Chatsworth wall mount cabinet Black in color with Plexiglas Door

27 11 16.02 Rack installation

27 11 16.02.A Racks should be securely attached to the wall using minimum 3/8" hardware or as required by local codes.

27 11 16.02.B Racks should be placed with a minimum of 60-inch clearance from the floor.

27 11 16.02.C All racks should be grounded to the telecommunications ground bus bar in accordance with section 25 05 26, *Grounding and Bonding for Communications Systems* of this document.

27 11 16.02.D Screws not used for installing rack mount patch panels and other hardware should be bagged and left with the rack upon completion of the installation.

27 11 16.02.E Rack mount termination equipment fields should be installed as per the requirements specified by the manufacturer's installation guides.

27 11 16.02.F Wall mounted termination block fields should be mounted on 4' x 8' x .75" void free plywood. The plywood should be mounted vertically 12" above the finished floor. The plywood should be painted with two coats of white fire retardant paint.

27 11 16.02.G Wall mounted termination block fields should be installed as per the requirements specified by the manufacturer's installation guides.

27 11 19 Communications Termination Blocks and Patch Panels

27 11 19.02 GigaFlex PS6+ Patch Panel

27 11 19.02.A General

The GigaFlex PS6+ patch panel system should provide a category 6 centralized, rack-mounted termination, identification and service assignment point for UTP horizontal, backbone and equipment cabling at the horizontal or main cross connect using modular cord assemblies.

27 11 19.02.B Mounting Hardware

The UTP cross-connect/interconnect system should be available in 24- and 48-port configurations for greater design flexibility and optimization of rack installation.

The UTP cross-connect/interconnect system should be compatible with standard 19" equipment racks, cabinets or wall-mount brackets.

The UTP cross-connect/interconnect system should have an integrated rear cable management bar that can be positioned at different heights to accommodate any installation need.

The UTP cross-connect/interconnect system should have all ports numbered on the front and back of the panel.

The UTP cross-connect/interconnect system should have large front labeling space to facilitate custom port identification.

The UTP cross-connect/interconnect system should have openings for color-coded icons.

27 11 19.02.C Connection Module

The connection module should be backward compatible with category 5e.

The connection module should be based on the encapsulated lead frame technology providing long term reliability and stability.

The connection module should allow termination of both T568A and T568B wiring configurations.

The connection module used in the rack-mount UTP cross-connect/interconnect system shall be made of fire-retardant UL 94V-0 plastic.

The connection module used should have an insulation displacement connection featuring insulation-slicing, tin-plated clips, forming a gas-tight connection.

The connection module should have a contact resistance of 1 mΩ per contact.

The connection module should have a durability rating of 10 insertions of any combination of 22 to 24 AWG wire.

The jack in the connection module should be FCC Part 68, Subpart F and IEC 603-7 compliant.

The durability of the IDC termination on the connection module should be 1000 mating cycles.

The contact material of the IDC termination on the connection module should be phosphor bronze, plated with 50 micro-inches of gold over nickel.

The maximum current rating of the IDC termination on the connection module should be 1.5 amperes.

The dielectric strength of the IDC termination on the connection module should be 1000V RMS at 60 Hz for one minute.

The minimum insulation resistance of the IDC termination on the connection module should be 200 MΩ.

The modular plug should meet or exceed the requirements per ANSI/TIA/EIA-568-B.2-1 parameters when tested with PS6 Connectivity at 100 MHz.

Parameter	IBDN PS6LX Modular Plug Values (dB)	Category 6 (dB)
NEXT	55.1	≥ 54.0
PSNEXT	52.0	≥ 50.0
FEXT	49.8	≥ 43.1
PSFEXT	46.9	≥ 40.1
Attenuation	0.1	≤ 0.2
Return Loss	27.0	≥ 23.0

27 11 19.02.D The modular patch panel shall be one of the following:

Part Number	Description
AX101611	GigaFlex PS6+ Patch panel, 1U, 24-port, BLACK
AX101613	GigaFlex PS6+ Patch panel, 2U, 48-port, BLACK

(other colors are available)

27 11 19.05 Copper Termination hardware installation

27 11 19.05.A Cables should be dressed and terminated in accordance with the recommendations made in the ANSI/TIA/EIA-568-B standard document, manufacturer's recommendations and installation guides, and best industry practices.

27 11 19.05.B Pair untwist at the termination should not exceed 13 mm (0.5 inch).

27 11 19.05.C Bend radius of the UTP cable in the termination area should not exceed 4 times the outside diameter of the cable.

27 11 19.05.D Cables should be neatly bundled and dressed to their respective panels or blocks. Each panel or block should be fed by an individual bundle separated and dressed back to the point of cable entrance into the rack or frame.

27 11 19.05.E Each cable should be clearly labeled on the cable jacket behind the patch panel at a location that can be viewed without removing the bundle support ties. Cables labeled within the bundle, where the label is obscured from view should not be acceptable.

27 13 00 Communications Backbone Cabling

27 13 13 Communications Copper Backbone Cabling

27 13 13.01 Backbone cables

27 13 13.01.A General

The backbone cabling is the portion of the cabling system that links the cross-connects within a building and between buildings in a campus environment. The backbone cabling consists of the feeder field of the horizontal cross-connect, intrabuilding and interbuilding backbone cable, and intermediate and main cross-connects.

27 13 13.01.B 100 Ohm Category 6 unshielded twisted-pair cable (UTP) - *GigaFlex 2400 cables series*

See section 27 15 13.02.B, *100 Ohm Category 6 unshielded twisted-pair cable (UTP) - GigaFlex 2400 cables series.*

27 13 13.01.C 100 Ohm Category 6 unshielded twisted-pair cable (UTP) - *MediaTwist cables series*

See section 27 15 13.02.C, *100 Ohm Category 6 unshielded twisted-pair cable (UTP) - MediaTwist cables series.*

27 13 13.02 Backbone cables installation

27 13 13.02.A Backbone cables should be installed separately from horizontal distribution cables.

27 13 13.02.B A plastic or nylon pull cord with a minimum test rating of 90 Kg (200 lb.) should be co-installed with all cable installed in any conduit.

27 13 13.02.C Where cables are housed in conduits, the backbone and horizontal cables should be installed in separate conduits.

27 13 13.02.D Where cables are installed in an air return plenum, riser rated cable should be installed in metallic conduit.

27 13 13.02.E Where backbone cables and distribution cables are installed in a cable tray or wireway, backbone cables should be installed first and bundled separately from the horizontal distribution cables.

27 13 13.02.F All backbone cables should be securely fastened to the side wall of the TR on each floor.

27 13 13.02.G Backbone cables spanning more than three floors should be securely attached at the top of the cable run with a wire mesh grip and on alternating floors or as required by local codes.

27 13 13.02.H Vertical runs of cable should be supported to messenger strand, cable ladder, or other method to provide proper support for the weight of the cable.

27 13 13.02.I Large bundles of cables and/or heavy cables should be attached using metal clamps and/or metal banding to support the cables.

27 15 00 Communications Horizontal Cabling

27 15 13 Communications Copper Horizontal Cabling

27 15 13.01 Topology

The horizontal cabling should be installed following a star topology.

The Horizontal (workstation) Cabling System should consist of a minimum of two (2) 4-pair Unshielded Twisted Pair (UTP) Copper Cables to each work area outlet unless otherwise noted for specific locations. The cables should be installed from the Work Area Outlet to the Telecommunications Room (TR) located on the same floor, and routed to the appropriate rack serving that area and terminated as specified in this document.

27 15 13.02 Horizontal distribution cables

27 15 13.02.A General

All horizontal data station cables and voice cables should terminate on modular patch panels or IDC cross-connecting systems in their respective Telecommunications Room or Equipment Room as specified on the drawings.

27 15 13.02.B 100 Ohm Category 6 unshielded twisted-pair cable (UTP) - *GigaFlex 2400 cables series*

The horizontal UTP cable shall be measured to 450 MHz and the supplier shall guarantee performance up to 250 MHz.

The horizontal UTP cable shall meet or exceed the Category 6 transmission characteristics per ANSI/TIA/EIA-568-B.2-1.

The horizontal UTP cable should meet or exceed the Enhanced Category 5 transmission characteristics per ANSI/TIA/EIA-568-B.2.

The non-plenum version of the horizontal UTP cable should be ITS/ETL Certified as Type CMR and listed as NEC Type CMR per UL Standard 444.

The plenum version of the horizontal UTP cable should be ITS/ETL Certified as Type CMP and listed as NEC Type CMP per UL Standard 444.

The horizontal UTP cable should have a maximum DC resistance of 9.38 Ohms/100 m at 20° C.

The horizontal UTP cable should have a maximum mutual capacitance of 5.6 nF/100m.

The horizontal UTP cable should have an input impedance of 100 +/- 15 Ohms from 1 to 100 MHz, 100 +/- 22 Ohms from 101 to 200 MHz and 100 +/- 32 Ohms from 201 to 300 MHz.

The horizontal UTP cable should have a propagation delay (Skew) of 25 ns/100 m.

The horizontal UTP cable should meet the transmission specifications given:

Frequency (MHz)	Attenuation (dB/100m) (max.)	NEXT (dB) (min.)	PSNEXT (dB) (min.)	ACR (dB) (min.)	PSACR (dB) (min.)	ELFEXT (dB) (min.)	PSELFEXT (dB) (min.)	Return Loss (dB) (min.)
0.772	1.8	77.0	75.0	75.2	73.2	73.0	70.0	19.7
1.0	2.0	75.3	73.3	73.3	71.3	70.8	67.8	20.0
4.0	3.7	66.3	64.3	62.6	60.6	58.8	55.8	23.0
8.0	5.2	61.8	59.8	56.6	54.6	52.7	49.7	24.5
10.0	5.8	60.3	58.3	54.5	52.5	50.8	47.8	25.0
16.0	7.4	57.2	55.2	49.9	47.9	46.7	43.7	25.0
20.0	8.3	55.8	53.8	47.5	45.5	44.8	41.8	25.0
25.0	9.3	54.3	52.3	45.1	43.1	42.8	39.8	24.3
31.25	10.4	52.9	50.9	42.5	40.5	40.9	37.9	23.6
62.5	15.0	48.4	46.4	33.4	31.4	34.9	31.9	21.5
100.0	19.3	45.3	43.3	26.0	24.0	30.8	27.8	20.1
200.0	28.3	40.8	38.8	12.5	10.5	24.8	21.8	18.0
250.0	32.1	39.3	37.3	7.3	5.3	22.8	19.8	17.3
300.0	35.6	38.1	36.1	2.6	-0.6	21.3	18.3	16.8
350.0*	38.9	37.1	35.1	-1.7	-3.7	19.9	16.9	16.3
400.0*	42.0	36.3	34.3	-5.7	-7.7	18.8	15.8	15.9

450.0*	45.0	35.5	33.5	-9.5	-11.5	17.7	14.7	15.5
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*The values above 300 MHz are for information only.

The horizontal UTP cable should have a nominal velocity of propagation (NVP) of 72% at 10 MHz for plenum type cable and 68% at 10 MHz for non-plenum type cable.

The horizontal UTP cable should have decreasing sequential print on cable jacket of remaining cable length.

The horizontal UTP cable should have a ripcord to facilitate removal of the cable jacket.

The CMP version of the horizontal UTP cable should use FEP insulation on all wire pairs.

The horizontal cable should be one of the following:

Ordering Number	Description
24566915	GigaFlex 2412 cable, CMR, 4-pair, 24 AWG, Blue, Spool-in-Box

27 15 13.03 Horizontal distribution cable installation

27 15 13.03.A Cable should be installed in accordance with manufacturer's recommendations and best industry practices.

27 15 13.03.B A plastic or nylon pull cord with a minimum test rating of 90 Kg (200 lb.) should be co-installed with all cable installed in any conduit.

27 15 13.03.C Cable raceways should not be filled greater than the ANSI/TIA/EIA-569-A maximum fill for the particular raceway type or 40%.

27 15 13.03.D Cables should be installed in continuous lengths from origin to destination (no splices) except for transition points, or consolidation points.

27 15 13.03.E Where cables are installed in an air return plenum, riser rated cable should be installed in metallic conduit.

27 15 13.03.F Where transition points, or consolidation points are allowed, they should be located in accessible locations and housed in an enclosure intended and suitable for the purpose.

27 15 13.03.G The cable's minimum bend radius and maximum pulling tension should not be exceeded. Refer to manufacturer's requirements.

27 15 13.03.H If a J-hook or trapeze system is used to support cable bundles all horizontal cables should be supported at a maximum of 48 to 60 inch (1.2 to 1.5 meter) intervals. At no point should cable(s) rest on acoustic ceiling grids or panels.

27 15 13.03.I Horizontal distribution cables should be bundled in groups of no more than 50 cables. Cable bundle quantities in excess of 50 cables may cause deformation of the bottom cables within the bundle and degrade cable performance.

27 15 13.03.J Cable should be installed above fire-sprinkler systems and should not be attached to the system or any ancillary equipment or hardware. The cable system and support hardware should be installed so that it does not obscure any valves, fire alarm conduit, boxes, or other control devices.

27 15 13.03.K Cables should not be attached to ceiling grid or lighting fixture wires. Where support for horizontal cable is required, the contractor should install appropriate carriers to support the cabling.

27 15 13.03.L Any cable damaged or exceeding recommended installation parameters during installation should be replaced by the contractor prior to final acceptance at no cost to the Owner.

27 15 13.03.M Cables should be identified by a self-adhesive label in accordance with the section 27 05 23, *Identification for communications systems*, and ANSI/TIA/EIA-606-A. The cable label should be applied to the cable behind the faceplate on a section of cable that can be accessed by removing the cover plate.

27 15 13.03.N Cable should be installed so that there are no bends smaller than four times the cable outside diameter at any point in the run or in the termination field.

27 15 13.03.O Pulling tension

If the GigaFlex 2400 cables series is chosen, the pulling tension should not exceed 25-lbf for a 4-pair UTP cable.

27 15 43 Communications Faceplates and Connectors

27 15 43.01 General

27 15 43.01.A Work area cables should each be terminated at their designated work area location in the connector types described in the following subsections.

Included are modular telecommunication jacks. These connector assemblies should snap into a faceplate.

27 15 43.01.B The Telecommunications Outlet Assembly should accommodate:

- A minimum of two (2) modular jacks.
- Additional accommodations for specific locations as noted in the plans for optical fiber and/or additional copper cables as necessary.
- A blank filler to be installed when extra ports are not used.
- A dust cap to be installed on all modular jacks.

Multiple jacks that are identified in close proximity on the drawings (but not separated by a physical barrier) may be combined in a single assembly. The telecommunications contractor should be responsible for determining the optimum compliant configuration based on the products proposed.

The same orientation and positioning of jacks and connectors should be utilized throughout the installation. Prior to installation, the telecommunications contractor should submit the proposed configuration for each outlet assembly for review by the Owner.

The modular jack should incorporate printed label strips on the dust cap module for identifying the outlet. Printed labels should be permanent and compliant with ANSI/TIA/EIA-606-A standard specifications. Hand printed labels should not be accepted.

27 15 43.02 Faceplates

27 15 43.02.A Interface Plates

The faceplate housing the UTP connector modules should provide a symmetrically centered appearance for the modules.

The faceplate housing the UTP connector modules should have no visible mounting screws.

The faceplate housing the UTP connector modules should have aperture plugs to cover any unused openings in the faceplate.

Faceplate should fit over standard NEMA type outlet boxes or wall-mounting bracket for flush mount installation.

The faceplate housing the UTP connector modules should be available in the following colors: gray, almond, white, and black.

The faceplate housing the UTP connector modules should have the option of being mounted on adapter boxes for surface mount installation.

The faceplate housing the UTP connector modules should have a labeling capability, using built-in labeling windows, to facilitate outlet identification and ease network management.

The faceplate housing the UTP connector modules should accommodate up to a maximum of six (6) modules in a single-gang form.

The faceplate housing the UTP connector modules should provide flexibility in configuring multimedia workstation outlets that respond to present of future network needs such as audio, video, coaxial and optical fiber applications.

The faceplate should be made of fire-retardant UL 94V-0 plastic.

The faceplate should be UL, CSA and Austel approved.

The modular jack used with this faceplate is found in section 27 15 43.03.

The interface outlet should be one of the following:

Part Number	Description
AX101433	Interface plate, 2-port, Single-gang, Flush, White
AX101437	Interface plate, 4-port, Single-gang, Flush, White
AX101441	Interface plate, 6-port, Single-gang, Flush, White

(Other colors available.)

27 15 43.03 Modular Jacks

27 15 43.03.A Gigaflex PS6+ module

Voice/Data jacks should be 8-position modular jacks and should be Category 6 performance as defined by the references in this document including ANSI/TIA/EIA-568-B.2-1 performance requirements. All pair combinations must be considered, with the worst-case measurement being the basis for compliance. Modular jack performance should be third-party verified by a nationally recognized independent testing laboratory.

The UTP connector module should be a punch down UTP connector.

The UTP connector module shall be Power Sum rated, with a Power Sum NEXT performance equal to or better than the Category 6 pair-to-pair NEXT performance specifications, and shall have a PS6+ marking to indicate compliance.

The eight-position UTP connector module should accommodate 6-position modular plug modular cords without damage to either the cord or the module.

The UTP connector module punch down type should be used with the Flex Termination Station for better support during termination process.

Either the BIX tool, 110 or Krone connecting tools can be used to terminate the UTP connector module punch down type.

The UTP connector module should have an optional cover to protect the module when not in use.

The UTP connector module and its optional cover should be available in the following colors: gray, almond, white, black, orange, red, yellow, green, blue, purple, and brown.

The UTP connector module should be designed for use at the work area, telecommunications room and/or equipment room without modification.

The UTP connector module punch down type should have an in-line IDC termination interface with sharp pair splitters for the termination of wire pairs.

The UTP connector module should be available in both the T568A-ISDN and T568B-ALT wiring configurations within the same module.

The UTP connector module should have all of his components made of fire-retardant UL 94V-0 plastic.

The UTP connector module should have a height of 0.82 in. (20.8 mm), a width of 0.78 in. (19.7 mm) and a depth of 1.37 in. (34.7 mm) with the protective cap.

The UTP connector module should have an insulation displacement connection featuring insulation slicing of 22 to 24 AWG plastic-insulated solid copper conductors forming a gas-tight connection.

The UTP connector module IDC termination block durability should be 10 insertions of any combination of wire gauge.

The UTP connector module should have a maximum contact resistance of 1 mΩ per contact.

The UTP connector module should have a minimum insulation resistance of 200 MΩ.

The UTP connector module should be FCC Part 68, Subpart F compliant.

The UTP connector module durability should be 1000 mating cycles.

The UTP connector module contact material should be phosphor bronze, plated with 50 micro-inches of gold over nickel.

The UTP connector module maximum current rating should be 1.5 amperes.

The UTP connector module dielectric strength should be 1000V RMS at 60 Hz for one minute.

The UTP connector module shall meet the transmission technical specifications performance when measured at 100 MHz with PS6 plugs:

Parameters	Value (dB)
NEXT	55.1
PSNEXT	52.0
FEXT	49.8
PSFEXT	46.9
Attenuation	0.10
Return Loss	27.0

The modular jack (Cat. 6) should be:

Part Number	Description
AX101071	GigaFlex PS6+ module, T568A/B, Blue

(Other colors available)

27 15 43.04 Work area termination hardware termination

27 15 43.04.A Work area outlets and connectors should be installed in accordance with manufacturer's recommendations and installation guides, and best industry practices.

27 15 43.04.B Cables should be dressed and terminated in accordance with the recommendations made in the ANSI/TIA/EIA-568-B standard document, manufacturer's recommendations and best industry practices.

27 15 43.04.C Cables should be coiled in the in-wall or surface-mount boxes if adequate space is present to house the cable coil without exceeding the manufacturer's bend radius. In hollow wall installations where box-eliminators are used, excess wire

can be stored in the wall. No more than 300 mm (12 in.) of UTP and 915 mm (36 in.) of fiber slack should be stored in an in-wall box, modular furniture raceway, or insulated walls. Excess slack should be loosely coiled and stored in the ceiling above each drop location when there is not enough space present in the outlet box to store slack cable.

27 15 43.04.D Pair untwist at the termination should not exceed 12 mm (0.5 in.).

27 15 43.04.E Bend radius of the cable in the termination area should not be less than 4 times the outside diameter of the cable.

27 15 43.04.F Data jacks, unless otherwise noted in drawings, should be located in the bottom position(s) of each faceplate. Data jacks in horizontally oriented faceplates should occupy the right-most position(s).

27 15 43.04.G Voice jacks should occupy the top position(s) on the faceplate. Voice jacks in horizontally oriented faceplates should occupy the left-most position(s).

27 16 00 Communications Connecting Cords, Devices and Adapters

27 16 19 Communications Patch Cords, Station Cords, and Cross Connect Wire

27 16 19.01 Modular cords

27 16 19.01.B GigaFlex PS6+ Modular Cords

The contractor should provide factory terminated and tested UTP and optical fiber patch cords and equipment cords for the complete cabling system. The UTP patch cables should meet the requirements of ANSI/TIA/EIA-568-B.2-1 for patch cord testing.

Category 6 modular patch cords should meet these requirements:

- The modular cord cable jacket should be printed at two-foot intervals indicating cable code, AWG and UL designations.
- The modular cord cable should be UL Listed as Type CMR in accordance with the Binational Standard for Communications Cable UL 444/CSA Standard C22.2 No. 214-94.
- The modular cord cable should be 4-pair, with 23 AWG solid copper conductors.
- The modular plug should meet the requirements of the ANSI/TIA/EIA-568-B.2-1.
- The modular plug should meet the requirements of the latest issue of ISO/IEC 11801.

- The modular plug should meet the requirements of the latest issue of FCC Part 68, Subpart F.
- The modular plug should meet the requirements of the latest issue of IEC 603-7 (1990).
- The modular plug should be UL Listed as a Recognized Component.
- The modular plug should have a maximum voltage rating of 150V AC.
- The modular plug should have a minimum dielectric strength of 1000 Ω RMS at 60 Hz for one minute.
- The modular plug minimum insulation resistance should be 500 M Ω .
- The modular plug maximum contact resistance should be 10 m Ω .
- The modular plug contacts should be made of phosphor bronze.
- The modular plug contacts should be plated with a minimum of 50 micro-inches of gold over nickel.
- The modular plug durability should be of 1000 mating cycles.
- The modular plug should be UL 94V-0 Flame Rating compliant.
- The modular plug should meet or exceed the requirements per ANSI/TIA/EIA-568-B.2-1 parameters when tested with PS6 Connectivity at 100 MHz.

Parameter	Belden IBDN GigaFlex PS6+ Modular Cord (dB)	ANSI/TIA/EIA-568-B.2 Enhanced Category 5 (dB)
NEXT	55.1	≥ 54.0
PSNEXT	52.0	≥ 50.0
FEXT	49.8	≥ 43.1
PSFEXT	46.9	≥ 40.1
Attenuation	0.10	≤ 0.2
Return Loss	27.0	≥ 23.0

- The modular plug should meet or exceed the requirements of de-embedded NEXT at 100 MHz as provided by ANSI/TIA/EIA-568-B.2-1.

PIN Combinations	Belden IBDN GigaFlex PS6+ plug (dB)	ANSI/TIA/EIA-568-B.2-1 Category 6 (dB)
4-5 & 3-6	37.0 ± 0.5	37.0 ± 0.6
3-6 & 1-2	47.5 ± 1.0	47.0 ± 1.5
3-6 & 7-8	47.5 ± 2.0	± 2.0
4-5 & 1-2	65.0 ± 18.0	≥ 57.0
4-5 & 7-8	63.0 ± 5.0	≥ 57.0
1-2 & 7-8	73.0 ± 6.0	≥ 60.0

- The modular cord assembly should meet the requirements per ANSI/TIA/EIA-568-B.2-1.

- The modular cord assembly should meet the requirements per the latest issue of ISO/IEC 11801.
- The modular cord assembly should be UL listed as a Communication Circuit Accessory.
- The modular cord assembly should have a very small footprint to be fully compatible with the highest density hubs that uses RJ45 jack connections.
- The modular cord assembly should have a colored boot over the plug, available in either almond, black, blue, green, gray, orange, purple, red, white or yellow.

Ordering Number	Description
AX350038	GigaFlex PS6+ Modular cord, 4 PR, 23 AWG, Solid, CMR, Blue, T568A/B:T568A/B, 4FT (1.2M)
AX350039	GigaFlex PS6+ Modular cord, 4 PR, 23 AWG, Solid, CMR, Blue, T568A/B:T568A/B, 7FT (2.1M)
AX350041	GigaFlex PS6+ Modular cord, 4 PR, 23 AWG, Solid, CMR, Blue, T568A/B:T568A/B, 15FT (4.6M)

(Other lengths and color available)

ANNEX A, ADDITIONAL INFORMATION

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

07 80 00 FIRE AND SMOKE PROTECTION

07 84 00 Firestopping

07 84 13 Penetration Firestopping

07 84 13.01 Firestop system

07 84 13.01.A A firestop system is comprised of the item or items penetrating the fire rated structure, the opening in the structure and the materials and assembly of the materials used to seal the penetrated structure. Firestop systems comprise an effective block for fire, smoke, heat, vapor and pressurized water stream.

07 84 13.01.B All penetrations through fire-rated building structures (walls and floors) should be sealed with an appropriate firestop system. This requirement applies to through penetrations (complete penetration) and membrane penetrations (through

one side of a hollow fire rated structure). Any penetrating item i.e., riser slots and sleeves, cables, conduit, cable tray, and raceways, etc. should be properly firestopped.

07 84 13.01.C Firestop systems should be UL Classified to ASTM E814 (UL 1479) and should be approved by a qualified Professional Engineer (PE), licensed (actual or reciprocal) in the state where the work is to be performed. A drawing showing the proposed firestop system, stamped/embossed by the PE should be provided to the Owner's Technical Representative prior to installing the firestop system(s).

07 84 13.02 Firestop system installation

All firestop systems should be installed in accordance with the manufacturer's recommendations and should be completely installed and available for inspection by the local inspection authorities prior to cable system acceptance.

INFORMATION FOR BIDDERS

WARNING:

(READ THIS DOCUMENT CAREFULLY. DO NOT ASSUME THAT IT IS THE SAME AS OTHER SIMILAR DOCUMENTS YOU MAY HAVE SEEN)

1. Bid Security. Each bid shall be accompanied by a certified or cashier's check or bid bond issued by an admitted surety insurer in the amount of not less than ten percent (10%) of the total bid amount stated in the bid. Said check or bond shall be made payable to the AUHSD and shall be given as a guarantee that the bidder, if awarded the Work, will enter into an Agreement within five (5) working days after award of the Contract, and will furnish, on the prescribed forms, the necessary insurance certificates, performance bond, and labor and material bond in accordance with the Contract Documents. In case of refusal or failure to enter into the Agreement, the check or bid bond, as the case may be, shall be forfeited to the AUHSD. If the bidder elects to furnish a bid bond as its Bid Security, the bidder shall use the bid bond form included herein. *Bid Security shall be included in the Pricing Section of the response.*

2. Signature. All bonds, all designations of subcontractors, the Contractor's Certificate, the Agreement, and all Guarantees must be signed in the name of the bidder and must bear the signature of the person or persons duly authorized to sign the bid. If bidder is a corporation, the legal name of the corporation shall first be set forth, together with two signatures: one from among the chairman of the board, president or vice president and one from among the secretary, chief financial officer, or assistant treasurer. Alternatively, the signature of other authorized officers or agents may be affixed, if duly authorized by the corporation. Such documents shall include the title of such signatories below the signature and shall bear the corporate seal. If bidder is a joint venture or partnership, there shall be submitted with the bid, certifications signed by authorized officers of each of the parties to the joint venture or partnership, naming the individual who shall sign all necessary documents for the joint venture or partnership and, should the joint venture or partnership be the successful bidder, the individual who shall act in all matters relative to the Contract resulting therefrom for the joint venture or partnership. If bidder is an individual, his/her signature shall be placed on such documents.

3. Modifications. Changes in or additions to the bid documents, recapitulations of the work bid, alternative bids, or any other modification which is not specifically called for in the Contract Documents may result in the AUHSD'S rejection of the bid as not being responsive to the invitation to bid. No oral or telephonic modification of any bid submitted will be considered and a telegraphic modification may be considered only if the postmark evidences that a confirmation of the telegram duly signed by the bidder was placed in the mail prior to the opening of bids.

4. Erasures, Inconsistent or Illegible Bids. The bid submitted must not contain any erasures, interlineations, or other corrections unless each such correction creates no inconsistency and is suitably authenticated by affixing in the margin immediately opposite the

correction the signature or signatures of the person or persons signing the bid. In the event of inconsistency between words and figures in the bid price, words shall control figures. In the event the AUHSD determines that any bid is unintelligible, inconsistent or ambiguous, the AUHSD may reject such bid as not being responsive to the invitation to bid.

5. Examination of Site and Contract Documents. At its own expense and prior to submitting its bid, each bidder shall examine the Contract Documents; attend the mandatory pre-bid conference and job walk and determine the local conditions which may in any way affect the performance of the Work, including the prevailing wages and other relevant cost factors; familiarize itself with all Federal, State and local laws, ordinances, rules, regulations and codes affecting the performance of the Work, including the cost of permits and licenses required for the Work; make such surveys and investigations, including investigation of subsurface or latent physical conditions at the site or where performance of the Work at its bid price within the terms of the Contract Documents; determine the character, quality, and quantities of the Work to be performed and the materials and equipment to be provided; and correlate its observations, investigations, and determinations with the requirements of the Contract Documents. The Contract Documents show and describe the existing conditions, as they are believed to have been used in the design of the Work. The AUHSD shall not be liable for any loss sustained by the Contractor resulting from any variance between the conditions and design data given in the Contract Documents and the actual conditions revealed during the bidder's examination or during the progress of the Work. The submission of a bid shall be incontrovertible evidence that the bidder has complied with all the requirements of this provision of the Information for Bidders.

6. Withdrawal of Bids. Any bid may be withdrawn, either personally, by written request, or by telegraphic request confirmed in the manner specified above for bid modifications, at any time prior to the scheduled closing time for receipt of bids. All requests for bid withdrawal must be accompanied with a power-of-attorney or other proof acceptable to the AUHSD which authorizes the individual requesting the bid withdrawal to so act on behalf of the bidder. The bid security for bids withdrawn prior to the scheduled closing time for receipt of bids, in accordance with this paragraph shall be returned on demand therefore.

7. Agreements and Bonds. The Agreement form which the successful bidder, as Contractor, will be required to execute, and the form of the payment bond which such Contractor will be required to furnish in accordance with Civil Code Section 3247 prior to execution of the Agreement, are included in the Contract Documents and should be carefully examined by the bidder. Unless otherwise specified in the Special Conditions, the payment bond shall be in the amount of One Hundred percent (100%) of the amount of the Contract. The Contractor will also be required to furnish a performance bond in the amount of one hundred percent (100%) of the amount of the Contract and in the form included in the Contract Documents, and Certificates of Insurance as required in the Contract, all prior to execution of the Contract.

8. Interpretation of Plans and Documents. If any prospective bidder is in doubt as to the true meaning of any part of the Contract Documents, or finds discrepancies in, or omissions from the drawings and specifications, a written request for an interpretation or correction thereof may be submitted to the CONSULTANT. The bidder submitting the request shall be responsible for its prompt delivery. Any interpretation or correction of the Contract Documents will be made only by addendum duly issued by the CONSULTANT and approved by the AUHSD, and a copy of such addendum will be mailed or delivered to each Contractor receiving a set of the Contract

Documents. No person is authorized to make any oral interpretation of any provision in the Contract Documents, nor shall any oral interpretation be binding on the AUHSD. Requests for clarification or explanation should be submitted to CONSULTANT no later than the seventh calendar day preceding the date set for submission of bids. If discrepancies on drawing, or in specifications, or conflicts between drawing and specifications are not covered by addenda, bidder shall include in the bid the method of construction and materials resulting in the higher bid. Bidder shall become familiar with the plans, specifications and drawings. Submittal of a bid without clarifications shall be incontrovertible evidence that the bidder has determined that the plans, specifications and drawings are sufficient for bidding and completing the job; that bidder is capable of reading, following and completing the job in accordance with the plans, specifications and drawings; and that the plans, specifications and drawings fall within an acceptable standard for plans, specifications and drawings.

9. Bidders Interested in More Than One Bid. No person, firm or corporation shall be allowed to make, or file, or be interested in more than one bid for the same work unless alternate bids are specifically called for. A person, firm, or corporation that has submitted a sub-bid to a bidder, or that has quoted prices of materials to a bidder, is not thereby disqualified from submitting a bid or quoting prices to other bidders or making a prime bid.

10. Award of Contract. The AUHSD reserves the right to reject any or all bids, or to waive any irregularities or informalities in any bids or in the bidding. The award of the Contract, if made by the AUHSD, will be by action of the governing board.

11. Listing Subcontractors. Each bidder shall submit, on the form furnished with the Contract Documents, a list of the bid subcontractors on this project.

12. Workers' Compensation. In accordance with the provisions of section 3700 of the Labor Code, the successful bidder as Contractor shall secure the payment of compensation to all employees. Contractor shall sign and file with AUHSD the following certificate prior to performing the work under this Contract: "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this contract." The form of such certificate is included as a part of the contract documents.

13. Contractor's License. If, at the time the Pricing Portion of the bids are opened, Bidder is not licensed to perform the project in accordance with Division 3, Chapter 9 of the Business and Professions Code of the State of California and the to Contractors Calling for Bids, such bid will not be considered.

14. Anti-Discrimination. It is the policy of the AUHSD that in connection with all work performed under contracts, there be no discrimination against any prospective or active employee engaged in the work because of race, color, ancestry, national origin, religious creed, sex, age or marital status. The Contractor agrees to comply with applicable Federal and California laws including, but not limited to, the California Fair Employment Practice Act, beginning with Government Code Section 12900, and Labor Code Section 1735. In addition, the Contractor agrees to require like compliance by any subcontractors employed on the work by any

such Contractor and if applicable, shall complete and submit with its bid the Equal Employment Opportunity Status Report included as part of the Bid Form.

15. Hold Harmless. The Contractor shall indemnify and hold harmless the AUHSD, its officers, agents, and employees from every claim or demand made, and every liability, loss, damage, or expense, of any nature whatsoever, which may be incurred by reason of:

(a) Liability for damages for (1) death or bodily injury to persons; (2) injury to, loss or theft of property; or (3) any other loss, damage or expense arising under either (1) or (2) above, sustained by the Contractor or any person, firm or corporation employed by the Contractor upon or in connection with the work called for in the Agreement, except for liability resulting from the sole negligence, or willful misconduct of the AUHSD, its officers, employees, agents or independent contractors who are directly employed by the AUHSD, and except for liability resulting from the active negligence of the AUHSD.

(b) Any injury to or death of persons or damage to property caused by any act, neglect, default or omission of the Contractor, or any person, firm, or corporation employed by the Contractor, either directly or by independent contract, including all damages due to loss or theft, sustained by any person, firm or corporation, including the AUHSD, arising out of, or in any way connected with the work covered by the Agreement, whether said injury or damage occurs either on or off AUHSD property, if the liability arose from the negligence or willful misconduct of anyone employed by the Contractor, either directly or by independent contract, and not by the active negligence of the AUHSD.

(c) The Contractor, at Contractor's own expense, cost and risk shall defend any and all actions, suits, or other proceedings that may be brought or instituted against the AUHSD, its officers, agents or employees, or any such claim or liability, and shall pay or satisfy any judgment that may be rendered against the AUHSD, its officers, agents or employees in any action, suit or other proceedings as a result thereof.

16. Surety Qualifications. All surety companies which are admitted Surety insurers pursuant to California Code of Civil Procedure Section 995.120 and comply with the provisions of California Code of Civil Procedure Sections 995.630 and 995.660 shall be satisfactory to the AUHSD.

17. Contract Duration and Liquidated Damages. All Work must be completed within the time limits set forth in the Notice to Contractors Calling For Bids. It is agreed that damages for the failure of the Contractor to complete the total Work described herein within the time limits required are impossible to ascertain but that the sum of One Thousand Dollars (\$1000.00) per day is a reasonable estimate. Should the Work not be completed within the specified time for completion, the Contractor shall be liable for liquidated damages, payable to the AUHSD, in an amount of One Thousand Dollars (\$1000.00) for each calendar day of delay in completion.

18. Asbestos and Other Hazardous Materials Certification. The successful bidder shall be required to execute and submit to the AUHSD a Asbestos and Other Hazardous Materials Certification prior to commencing Work on the Project.

BID FORM

To Be included in Pricing Package
Do Not Include in Bid Package

Anderson Union High School District District, acting by and through its Governing Board, herein called the "AUHSD:"

1. Pursuant to your Notice to Contractors Calling for Bids and the other documents relating thereto, the undersigned bidder, having become familiarized with the terms of the complete contract, as defined in the Agreement, the local conditions affecting the performance of the contract and the cost of the work at the place where the work is to be done, hereby bids and agrees to be bound by all the terms and conditions of the complete contract and agrees to perform, within the time stipulated, the contract, including all of its component parts, and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility and transportation services necessary to perform the contract and complete in a good workmanlike manner all of the work required, including sheeting, shoring and bracing, or equivalent method for protection of life and limb in trenches and open excavation in conformance with applicable safety orders, in connection with the following:

Project: Anderson UHSD Technology Infrastructure Modernization – Designated School Site (*North Valley HS, Oakview Charter, Anderson Community Day, etc. Each site constitutes a separate proposal. Proposals may be combined in one bid package.*)

all in strict conformity with the complete contract as defined in the Agreement, including addenda nos. _____, _____, _____, and _____, on file at AUHSD's Office for the sum of _____ Dollars (\$_____).

Each individual bid term shall be determined from visiting the work site, reviewing the plans and specifications, and all other portions of the contract documents, and shall include all items necessary to complete the work, including the assumption of all obligations, duties, and responsibilities necessary for the successful completion of the contract and the furnishing of all materials and equipment required to be incorporated in and form a permanent part of the work: tools, equipment, supplies, transportation, facilities, labor, superintendence, and services required to perform and complete the work; and bonds, insurance and submittals; all as per the requirements of the contract documents, whether or not expressly listed or designated.

2. It is understood that the AUHSD reserves the right to reject this bid and that this bid shall remain open and not be withdrawn for the period specified in the Notice to Contractors Calling for Bids.

3. The required bid security is hereto attached.

The required Non-Collusion Affidavit is hereto attached.

The required list(s) of bid subcontractors is attached hereto, and the undersigned represents and warrants that such list(s) is complete and in compliance with the Subletting and Subcontracting Fair Practices Act.

The required Information Required of Bidder form is hereto attached.

7. It is understood and agreed that if written notice of the acceptance of this bid is mailed, telegraphed, or delivered to the undersigned after the opening of the bid, and within the time this bid is required to remain open, or at any time thereafter before this bid is withdrawn, the undersigned will execute and deliver to the AUHSD a contract in the form attached hereto in accordance with the bid as accepted, and that the undersigned will also furnish and deliver to the AUHSD the Performance Bond and Payment Bond as specified, all within the five (5) calendar days after receipt of notification of award, and that the work under the contract shall be commenced by the undersigned bidder, if awarded the contract on the date to be stated in the AUHSD'S Notice to Proceed delivered to the Contractor, and shall be completed by the Contractor in the time specified in the contract documents.

8. Communications conveying acceptance of bids, requests for additional information or other correspondence should be addressed to the undersigned at the address stated below. _____

9. The name of all persons interested in the foregoing bid as principals are as follows: _____

(IMPORTANT NOTICE: If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing firm; if bidder or other interested person is an individual, state first and last name in full.)

10. In submitting this bid, the bidder offers and agrees that if the bid is accepted, it will assign to AUHSD all rights, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Business & Professions Code Section 16700 *et seq.*) arising from the purchase of goods, materials, or services by the bidder for sale to the AUHSD pursuant to the bid. Such assignment shall be made and become effective at the time the AUHSD tenders final payment.

11. If the bidder is a corporation, the undersigned hereby represents and warrants that the corporation is duly incorporated and is in good standing in the State of _____ and that _____ whose title is _____ authorized to act for and bind the corporation.

12. It is understood and agreed that, should bidder fail or refuse to return executed copies of the Agreement, Contractor's Certificate, Certification of Insurance, and required bonds to the AUHSD within five (5) days of actual notice of the award of the contract to bidder, the security may be forfeited to the AUHSD as liquidated damages.

13. The undersigned hereby warrants that the bidder has an appropriate license, in accordance with the act providing for the registration of contractors' License No. _____, Class ____, that such license entitles the bidder to provide the work; that such license will be in full force and effect throughout the duration of performance under this contract; and that any and all subcontractors to be employed will have appropriate licenses.

14. In submitting this bid, the bidder agrees that if its bid is accepted, it shall perform at least 15% of the total work under the contract, exclusive of supervisory and clerical work, and without the services of any subcontractor. The work to be performed by the bidder in satisfaction of this requirement is set forth below:

15. The bidder hereby certifies that it is, and at all times during the performance of work hereunder shall be, in full compliance with the provisions of the Immigration Reform and Control Act of 1986 ("IRCA") in the hiring of its employees, and the bidder shall indemnify, hold harmless and defend the AUHSD against any and all actions, proceedings, penalties or claims arising out of the bidder's failure to comply strictly with the IRCA.

16. It is understood and agreed that if, requested by the AUHSD, the bidder shall furnish a notarized financial statement, references, and other information sufficiently comprehensive to permit an appraisal of its current financial condition.

The undersigned hereby declares that all of the representations of this bid are made under penalty of perjury under the laws of the State of California.

Individual Contractor Name: _____
Signed by: _____
Date: _____
Business Address: _____

Partnership Name: _____
Signed by: _____, Partner
Business Address: _____
Date: _____
Other Partners: _____

.....

Corporation

Name: _____

(a _____ Corporation¹)

Business Address: _____

Signed by: _____, President, Dated: _____

Signed by: _____, Secretary, Dated: _____

[Seal and Attest]

Business Address: _____

¹ A corporation receiving the award shall furnish evidence of its corporate existence and evidence that the officer signing the Agreement and Bonds is duly authorized to do so.

BID BOND

Included In Pricing Response

KNOWN ALL MEN BY THESE PRESENTS, that we _____ as Principal, and _____ as Surety, an admitted Surety insurer pursuant to Code of Civil Procedure Section 995.120 are held and firmly bound unto the **Anderson Union High School District District**, hereinafter called AUHSD, in the penal sum of TEN PERCENT (10%) OF THE TOTAL AMOUNT OF THE BID of the Principal submitted to the said AUHSD for the work described below for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted the accompanying bid dated _____, 2007, for the

Communications Infrastructure Modernization (Low Voltage Cabling)

NOW, THEREFORE, if the Principal shall not withdraw said bid within the period specified therein after the opening of the same, or, if no period be specified, within sixty (60) days after the said opening; and if the Principal is awarded the contract, and shall within the period specified therefore, or if no period be specified, within (5) days after the prescribed forms are presented to Principal for signature, enter into a written contract with the AUHSD, in accordance with the bid as accepted and give bond with good and sufficient surety or sureties, as may be required for the faithful performance and proper fulfillment of such contract and for the payment for labor and materials used for the performance of the contract, or in the event of the withdrawal of said bid within the period specified or the failure to enter into such contract and give such bonds within the time specified, if the Principal shall pay the AUHSD the difference between the amount specified in said bid and the amount for which the AUHSD may procure the required work and/or supplies, if the latter amount be in excess of the former, together with all costs incurred by the AUHSD in again calling for bids, then the above obligation shall be void and of no effect, otherwise said obligation shall remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or the call for bids, or to the work to be performed thereunder, or the specifications accompanying the same, shall in any way affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of said contract or the call for bids, or to the work, or to the specifications.

In the event suit is brought upon this bond by the AUHSD and judgment is recovered, the Surety shall pay all costs incurred by the AUHSD in such suit, including a reasonable attorney's fee to be fixed by the court.

IN WITNESS WHEREOF the parties have executed this instrument under their several seals this day of _____, 2007, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(Corporate Seal of Principal, if Corporation)

Principal (Proper Name of Bidder)

By _____

Signature of Bidder

(Corporate Seal of Surety)

Surety
By _____

Attorney-in-Fact _____
(Attach Attorney-in-Fact Certificate and Required Acknowledgements)

Name and Address of California Agent of Surety

Telephone Number of California Agent of Surety

DESIGNATION OF SUBCONTRACTORS

In compliance with the Subletting and Subcontracting Fair Practices Act (Chapter 4, commencing at Section 4100, Division 2, Part 1 of the Public Contract Code of the State of California) and any amendments thereof, each bidder shall set forth below: (a) the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement to be performed under this contract or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of one percent of the prime contractor's total bid. The prime contractor shall list only one subcontractor for each such portion as is defined by the prime contractor in this bid. The successful prime contractor shall provide the AUHSD within ten (10) days from notification of award a complete list of all subcontractors named below, including license numbers, classifications and expiration dates.

If a prime contractor fails to specify a subcontractor or if a prime contractor specifies more than one subcontractor for the same portion of work to be performed under the contract in excess of one-half of one percent of the prime contractor's total bid, the prime contractor shall be deemed to have agreed that it is fully qualified to perform that portion, and that said prime contractor alone shall perform that portion.

No prime contractor whose bid is accepted shall (a) substitute any subcontractor, (b) permit any subcontractor to be voluntarily assigned or transferred or allow it to be performed by any one other than the original subcontractor listed in the original bid, or (c) sublet or subcontract any portion of the work in excess of one-half of one percent of the prime contractor's total bid as to which the original bid did not designate a subcontractor, except as authorized in the Subletting and Subcontracting Fair Practices Act. Subletting or subcontracting of any portion of the work in excess of one-half of one percent of the prime contractor's total bid as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the authority awarding this contract setting forth the facts constituting the emergency or necessity.

Note: If alternate bids are called for and bidder intends to use a different or additional subcontractor on the alternates, a separate list of subcontractors must be provided for each such alternate.

DESIGNATION OF SUBCONTRACTORS

Portion Subcontractor	Designation as & % of Work	Location and Place of Business	License#
--------------------------	-------------------------------	-----------------------------------	----------

Date

Proper Name of Bidder

(Signature of Bidder)

Address: _____

Phone Number: _____

INFORMATION REQUIRED OF BIDDER

General Information

The Bidder shall furnish the following information. Failure to comply with this requirement will render the bid informal and may cause its rejection. Additional sheets may be attached if necessary. "You" or "your" as used herein refers to the bidder's firm and any of its officer, directors, shareholders, parties and principals.

(1) Firm name and address:

(2) Telephone: _____

(3) Type of firm: (Check one)

Individual _____ Partnership _____ Corporation _____ Joint Venture _____

(4) Contractor's License: Primary class _____ Lic. No. _____
Expiration Date _____

(5) Supplemental classifications held, if any, and license number(s) and expiration date(s):

No payment shall be made for work or material under the contract unless and until the Registrar of Contractor verifies to the AUHSD that the CONTRACTOR was properly licensed at the time the contract was awarded and CONTRACTOR continues to be so licensed throughout the term of the Contract. Any CONTRACTOR not so licensed is subject to penalties under the law.

The AUHSD is required to verify license prior to awarding a bid.

(5) Have you ever been licensed under a different name or different license number? _____
If Yes, give name If YES, give name and license number.

(6) Names and titles of all officers of the firm:

(7) Number of years as a contractor in work of this type:

(8) Person who inspected site of the bid work for your firm:

Name and Title: _____

Date of Inspection: _____

(9) How many years experience in construction work has your organization had?

(a) as a general contractor? _____

(b) as a subcontractor? _____

(10) Has your firm or any of its principals defaulted so as to cause a loss to a surety? _____ If the answer is "Yes", give dates, name and address of surety and details.

(11) Have you been assessed liquidated damages for any project in the past three years? _____

If Yes, explain: _____

(12) Have you been in litigation on a question relating to your performance on a contract during the past three years? _____ If Yes, explain, and provide case name and number: _____

(13) Have you ever failed to complete a project in the last three years? _____ If so, give owner and details: _____

(14) List the names, addresses and telephone numbers of three Consultants or Engineers whose job you have worked on in the past three years.

Name	Address	Telephone
_____	_____	() _____
_____	_____	() _____
_____	_____	() _____

(15) Do you now or have you ever had any direct or indirect business, financial or other connection with any official, employee or consultant of the AUHSD or Consultant? _____ If so, please elaborate. _____

List of References

Include three (3) references for each portion of the work (LAN, Cable, and VCS) that you've successfully completed within the last three (3) years. Additional sheets may be attached if necessary.

1. Name of Agency: _____
Agency Address and Telephone _____

Contact Person: _____

Type of Construction Project _____

Contract Amount: _____

2. Name of Agency: _____

Agency Address and Telephone: _____

Contact Person: _____

Type of Construction Project _____

Contract Amount: _____

3. Name of Agency: _____

Agency Address and Telephone: _____

Contact Person: _____

Type of Construction Project: _____

Contract Amount: _____

I certify and declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed this ____ day of _____, 20____, at _____, State of California.

City, County

Signature

Title

CONTRACTOR'S CERTIFICATE REGARDING WORKERS' COMPENSATION

Labor Code Section 3700

"Every employee except the state shall secure the payment of compensation in one or more of the following ways:

(a) By being insured against liability to pay compensation in one or more insurers duly authorized to write compensation insurance in this state.

(b) By securing from the Director of Industrial Relations a certificate of consent to self-insure either as an individual employer, or as one employer in a group of employers, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employee.

(c) For any county, city, city and county, municipal corporation, public AUHSD, public agency, or any political subdivision of the state, including each member of a pooling arrangement under a joint exercise of powers agreement (but not the state itself), by securing from the Director of Industrial Relations a certificate of consent to self-insure against workers' compensation claims, which certificate may be given upon furnishing proof satisfactory to the director of ability to administer workers' compensation claims properly, and to pay workers' compensation claims that may become due to its employees. On or before March 31, 1979, a political subdivision of the state which, on December 31, 1978, was uninsured for its liability to pay compensation, shall file a properly completed and executed application for a certificate of consent to self-insure against workers' compensation claims. The certificate shall be issued and be subject to the provisions of Section 3702."

I am aware of the provisions of Section 3700 of the Labor Code which require every employee to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of the code, and I will comply with such provisions before commencing the performance of the work of this contract.

(Proper Name of Contractor)

By _____

(Signature of CONTRACTOR)

(In accordance with Article 5 (commencing at Section 1860), Chapter 1, Part 7, Division 2 of the Labor Code, the above certificate must be signed and filed with the awarding body prior to performing any work under this contract.)

NONCOLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

(Public Contract Code Section 7106)

State of California)
) ss
County of Shasta)

_____, being first duly sworn, deposes and says that he or she is _____ of _____ the party making the foregoing bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the bid contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price of any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Subscribed and sworn to (or affirmed) before me this _____ day of _____, 20____.

[SEAL]

{Signature of Officer}

{Typed Name of Officer}

{Office}

ASBESTOS AND OTHER HAZARDOUS MATERIALS CERTIFICATION

This Asbestos and Other Hazardous Materials Certification form is part of the Contract made by and between the Anderson Union High School District District (hereinafter referred to as "AUHSD") and _____ (hereinafter referred to as the "Contractor") for the **Technology Infrastructure** Project (hereinafter referred to as the "Project").

To the best of my knowledge, information and belief, in completing the Contractor's Work for the Project, no material furnished, installed or incorporated into the Project will contain, or in itself be composed of, any asbestos, polychlorinated biphenyl (PCB), any material listed by the federal or state EPA or federal or state health agencies as a hazardous material, or any other material defined as being hazardous under federal or state laws, rules or regulations.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this _____ day of _____, 2007 at _____.

Name of Contractor (Print or Type)

By: _____
Signature

Print Name

Title

Subscribed and sworn before me
this ____ day of _____, 2007.

Notary Public in and for
the State of California

My Commission Expires: _____

LEAD BASED PAINT CERTIFICATION

This Lead Based Paint Certification form is part of the Contract made by and between the Anderson Union High School District District (hereinafter referred to as the "AUHSD") and (hereinafter referred to as the "Contractor") for the Technology Infrastructure Project (hereinafter referred to as the "Project").

In recent years, lead-based paint and other materials have come to the forefront of the regulatory process. Regulatory agencies such as the California Occupational Safety and Health Administration (CalOSHA), Environmental Protection Agency (EPA), California Department of Health Services (DHS), and the Consumer Product Safety Commission (CPSC) have all regulated, in some manner, lead-containing paint and lead products.

Because the Contractor and its employees will be providing services for the AUHSD, and because the Contractor's work may disturb lead containing building materials, **CONTRACTOR IS HEREBY NOTIFIED** of the potential presence of lead containing materials located within certain buildings utilized by the AUHSD. Lead was used extensively in paint because it rendered the paint more durable. All buildings built prior to 1993 are presumed to contain some lead-based paint until sampling proves otherwise.

Although the regulatory process is not yet complete, there are several regulations currently in place that effect AUHSD. The AUHSD mandates that DHS lead-certified personnel are engaged when a lead-based hazard is identified. Examples of lead-certified personnel include: project designers, inspectors and abatement workers. The use of lead-containing paint, lead plumbing and solders, or other potential sources of lead contamination in the construction of any new facility or in the modernization or renovation of any existing facility is prohibited.

FURTHERMORE, SINCE IT IS ASSUMED BY THE AUHSD THAT ALL PAINTED SURFACES (INTERIOR AS WELL AS EXTERIOR) WITHIN THE AUHSD CONTAIN SOME LEVEL OF LEAD, IT IS IMPERATIVE THAT THE CONTRACTOR, ITS WORKERS AND SUBCONTRACTORS FULLY AND ADEQUATELY COMPLY WITH ALL APPLICABLE LAWS, RULES AND REGULATIONS GOVERNING LEAD-BASED MATERIALS (INCLUDING TITLE 8, CALIFORNIA CODE OF REGULATIONS, SECTION 1532.1).

If failure to comply with these laws, rules and regulations results in a site or worker contamination, the Contractor will be held solely responsible for all costs involved in any required corrective actions, and shall defend, indemnify and hold harmless the AUHSD, pursuant to the indemnification provisions of the Contract, for all damages and other claims arising therefrom. If lead disturbance is anticipated in the Work, only persons with appropriate accreditation, registrations, licenses and training shall conduct this Work.

It shall be the responsibility of the Contractor to properly dispose of any and all waste products, including but not limited to, paint chips, any collected residue, or any other visual material that may occur from the prepping of any painted surface. It will be the responsibility of the Contractor to provide the proper disposal of any hazardous waste by a certified hazardous

waste hauler. This company shall be registered with the Department of Transportation (DOT) and shall be able to issue a current manifest number upon transporting any hazardous material from any site within the AUHSD.

The Contractor shall provide the AUHSD with any sample results prior to beginning Work, during the Work, and after the completion of the Work. The AUHSD may request to examine, prior to the commencement of the Work, the lead training records of each employee of the Contractor.

Any and all Work which may result in the disturbance of lead containing building materials must be coordinated through the AUHSD. A signed copy of this Certification must be on file prior to beginning Work on the Project, along with all current insurance certificates.

THE UNDERSIGNED HEREBY ACKNOWLEDGES, UNDER PENALTY OF PERJURY, THAT HE OR SHE HAS RECEIVED NOTIFICATION OF POTENTIAL LEAD BASED MATERIALS ON THE OWNER'S PROPERTY, AS WELL AS THE EXISTENCE OF APPLICABLE LAWS, RULES AND REGULATIONS GOVERNING WORK WITH, AND DISPOSAL OF, SUCH MATERIALS WITH WHICH IT MUST COMPLY. THE UNDERSIGNED ALSO WARRANTS THAT HE or SHE HAS THE AUTHORITY TO SIGN ON BEHALF OF AND BIND THE CONTRACTOR. THE OWNER MAY REQUIRE PROOF OF SUCH AUTHORITY.

1.
Contractor's Name

Telephone Number

3.
Street Address

License Number

Typed or Printed Name and Title of Signatory

Signature

RME of Company (If Applicable)

Subscribed and sworn before me
This __ day of _____, 20__.

Notary Public in and for the State of California

My Commission Expires: _____

PERFORMANCE BOND

! To Be Submitted with Pricing Package !
! Do not include in Bid Package!

KNOW ALL MEN BY THESE PRESENTS:

That WHEREAS, the Anderson Union High School District District AUHSD of Trinity County, California (hereinafter referred to as "AUHSD") has awarded to _____ as Principal, hereinafter designated as "Principal", the Contract for the work described as follows:

Communications Infrastructure Modernization
(Low Voltage Cabling, LAN Electronics)

AND WHEREAS, said Principal is required under the terms of said Contract to furnish a bond for the faithful performance of said Contract.

NOW, THEREFORE, we the Principal and the undersigned Surety, an admitted Surety insurer pursuant to Code of Civil Procedure Section 995.120 are held and firmly bound to the AUHSD, in the sum of _____ Dollars (\$ _____) (this amount being not less than one hundred percent (100%) of the total bid price of the Contract awarded by the AUHSD to the Principal), lawful money of the United States of America, for payment of which sum well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT if the hereby bounded Principal, its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by and well and truly keep and perform all the undertakings, terms, covenants, conditions and agreements in the said Contract and any alteration thereof made as therein provided, including, but not limited to the provisions regarding Contract duration and liquidated damages, all within the time and in the manner therein designated in all respects according to their true intent and meaning; then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

As a condition precedent to the satisfactory completion of the Contract, the above obligation shall hold good for a period of one (1) year after the acceptance of the Work by AUHSD, during which time if Principal shall fail to make full, complete, and satisfactory repair and replacements and totally protect the AUHSD from loss or damage made evident during the period of one (1) year from the date of acceptance of the Work, and resulting from or caused by defective materials or faulty workmanship, the above obligation in penal sum thereof shall remain in full force and effect. However, anything in this paragraph to the contrary notwithstanding, the obligation of Surety hereunder shall continue so long as any obligation of Principal remains.

Whenever Principal shall be, and is declared by the AUHSD to be, in default under the Contract, the AUHSD having performed the AUHSD's obligations thereunder unless excused by Principal's breach or default, the Surety shall promptly either remedy the default, or shall promptly:

1. Complete the Contract in accordance with its terms and conditions; or
2. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible Bidder, arrange for a contract between such Bidder and the AUHSD, and make available as Work progresses (even though there should be a default or succession of defaults under the Contract or Contracts of completion arranged under this Paragraph) sufficient funds to pay the cost of completion less the balance of the contract price, but not exceeding, including other costs and damages for which Surety may be liable hereunder, the amount set forth in the first executory Paragraph hereof. The term "balance of the contract price" as used in this Paragraph shall mean the total amount payable to Principal by the AUHSD under the Contract and any modifications thereto, less the amount previously properly paid by the AUHSD to the Principal.

Surety expressly agrees that the AUHSD may reject any contractor or subcontractor which may be bid by Surety in fulfillment of its obligations in the event of default by the Principal.

Surety shall not utilize Principal in completing the Contract nor shall Surety accept a Bid from Principal for completion of the Work if the AUHSD, when declaring the Principal in default, notifies Surety of the AUHSD's objection to Principal's further participation in the completion of the Work.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the AUHSD named herein or the successors or assigns of the AUHSD. Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due or is made, whichever occurs later.

FURTHER, the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or modification of the Contract Documents, or of the work to be performed thereunder, shall in any way affect its obligations on this bond; and it does hereby waive notice of any change, extension of time, alteration or modification of the Contract Documents or of work to be performed thereunder.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety named therein, on the ____ day of _____, 20__ the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

(SEAL AND NOTARIAL
ACKNOWLEDGMENT OF
SURETY)

Principal (Seal)

BY _____
(Name and Title)

(Mailing Address of
Surety)

Surety

BY _____
(Name and Title)

PAYMENT BOND

! To Be Submitted with Pricing Package!

! Do not include in Bid Package!

KNOW ALL MEN BY THESE PRESENTS: That

WHEREAS, the Anderson Union High School District ("AUHSD"), by Board action on _____, 20____, has awarded to _____, designated as the "Principal," a contract for the work described as follows:

Communications Infrastructure Modernization
(Low Voltage Cabling, LAN Electronics & Voice Communications)

WHEREAS, said Principal is required by Division 3, Part IV, Title XV, Chapter 7 (commencing at Section 3247) of the California Civil Code to furnish a bond in connection with said contract;

NOW THEREFORE, we the Principal and _____, as Surety, an admitted Surety insurer pursuant to Code of Civil Procedure, Section 995.120, are held and firmly bound unto the _____ AUHSD in the penal sum of _____ Dollars (\$_____) (this amount being not less than one hundred percent (100%) of the total bid price of the Contract awarded by the AUHSD to the Principal), lawful money of the United States of America for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, his or its heirs, executors, administrators, successors, or assigns, or a subcontractor shall fail to pay any person or persons named in Civil Code section 3181 or fail to pay for any materials, provisions, or other supplies, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code, with respect to work or labor thereon of any kind, or shall fail to deduct, withhold, and pay over to the Employment Development Department, any amounts required to be deducted, withheld, and paid over by section 13020 of the Unemployment Insurance Code with respect to work and labor thereon of any kind then said Surety will pay for the same, in or to an amount not exceeding the amount hereinabove set forth, and also will pay in case suit is brought upon this bond, such reasonable attorney's fees as shall be fixed by the court, awarded and taxed as provided in Division 3, Part IV, Title XV, Chapter 7 (commencing at section 3247) of the California Civil Code.

This bond shall inure to the benefit of any of the persons named in section 3181 of the California Civil Code, so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety of this bond shall not be exonerated or released from the obligation of this bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement hereinabove described or pertaining or relating to the furnishing of labor, materials, or equipment therefore, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme or work of improvement hereinabove described, nor by any rescission or attempted rescission of the contract, agreement or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the AUHSD and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in section 3110 and 3112 of the California Civil Code, and has not been paid the full amount of his or its claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

Any claims under this bond may be addressed to:

(Name and Address of Surety)

(Name and Address of
agent or representative
in California, if
different from above)

(Telephone Number of Surety, or
agent or representative in California)

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on the _____ day of _____, 20_____.

(Corporate Seal of
Principal, if Corporation)

Principal (Proper Name of Corporation)

By _____

(Signature of Contractor)

(Seal of Surety)

Surety

By _____
Attorney-in-Fact

(Attached Attorney-in-Fact
Certificate and Required Acknowledgements)

AGREEMENT

! To Be Submitted with Pricing Package !

!Do Not include in Bid Package !

THIS AGREEMENT, dated the ___ day of _____, 7, in the County of Trinity, State of California, by and between the Anderson Union High School District District, hereinafter referred to as "AUHSD" or "OWNER" and _____, hereinafter referred to as "CONTRACTOR".

WITNESSETH:

That the AUHSD and the CONTRACTOR, for the consideration stated herein, agree as follows:

1. Contract:

The complete contract includes all of the contract documents, including the Notice to Contractors Calling For Bids, Information for Bidders, Bid Form, Designation of Subcontractors, Information Required of Bidder, if required, Contractor Prequalification Documents if required, Contractor's Certificate Regarding Workers' Compensation, Noncollusion Affidavit, Asbestos and Other Hazardous Materials Certification, Lead Based Paint Certification, Change Order Form, Shop Drawing Transmittal Form, Performance Bond, Payment Bond, Insurance Policies, General Conditions, Special Conditions if any, Plans, Drawings, Specifications, this Agreement, and all modifications and amendments thereto, and by this reference are incorporated herein. The contract documents are complementary, and what is called for by any one shall be as binding as if called for by all.

2. Statement of Work:

CONTRACTOR shall perform that work designated in CONTRACTOR's Bid Form which constitutes at least 25% of the total work, exclusive of supervisory and clerical work, without the services of any subcontractor. CONTRACTOR shall perform within the time set forth in Paragraph 4 of this Agreement everything required to be performed, and shall provide and furnish all the labor, materials, necessary tools, expendable equipment, and all utility and transportation services as described in the complete contract and required for the work described as follows: **__Low Voltage Cabling and Voice & Data Communications** in accordance with drawings and specifications prepared by CSM Technologies dated December, 2006. All of said work to be performed and materials to be furnished shall be completed in a good workmanlike manner in strict accordance with the Plans, Drawings, Specifications and provisions of the complete contract as hereinabove defined. The CONTRACTOR shall be liable to the AUHSD for any damages arising as a result of a failure to fully comply with this obligation, and the CONTRACTOR shall not be excused with respect to any failure to so comply by any act or omission of the Consultant, Engineer, Inspector, Office of the State Consultant, or representative of any of them, unless such act or omission actually prevents the CONTRACTOR

from fully complying with the requirements of the documents, and unless the CONTRACTOR protests at the time of such alleged prevention that the act or omission is preventing the CONTRACTOR from fully complying with the contract documents. Such protest shall not be effective unless reduced to writing and filed with the AUHSD office within three (3) working days of the date of occurrence of the act or omission preventing the CONTRACTOR from fully complying with the contract documents.

3. Compensation:

AUHSD shall pay to the CONTRACTOR, or cause to be paid, as full consideration for the faithful performance of the contract, subject to any additions or deductions as provided in the contract documents, the sum of _____ dollars and _____ cents (\$ _____).

4. Time For Completion:

The work shall be commenced on or before the date stated in the AUHSD's Notice to Proceed and shall be completed within one hundred twenty (120) calendar days from and after the date stated in the Notice to Proceed. Said Notice shall not require that work be commenced less than five (5) calendar days from the date of issuance and receipt of said notice. AUHSD and CONTRACTOR stipulate and agree that the amount of time for completion as specified in this paragraph is reasonable. Upon issuance of the Notice To Proceed Contractor shall submit, within five (5) business days, a 100 percent performance bond as required, and upon submittal of said performance bond to the AUHSD, AUHSD shall relinquish CONTRACTOR's Bid Bond.

5. Liquidated Damages:

Time is of the essence. If the work is not completed in accordance with Paragraph 4 above, it is understood that the AUHSD will suffer damage. It being impractical and infeasible to determine the amount of actual damage, in accordance with Government Code section 53069.85 it is agreed that CONTRACTOR shall pay to AUHSD as fixed and liquidated damages, and not as a penalty, the sum of one Thousand (\$1000.00) for each calendar day of delay until work is completed and accepted. This amount shall be deducted from any payments due to or to become due to CONTRACTOR. Contractor and CONTRACTOR's surety shall be liable for the amount thereof. Time extensions may be granted by the AUHSD as provided in Article 64 of the General Conditions.

6. Indemnification:

The CONTRACTOR agrees to and does hereby indemnify and hold harmless the AUHSD, its officers, agents, and employees from every claim or demand made, and every liability, loss, damage, or expense, of any nature whatsoever, which may be incurred by reason of:

(a) Liability for damages for (1) death or bodily injury to person; (2) injury to, loss or theft of property; or (3) any other loss, damage or expense arising under either (1) or (2) above, sustained by the CONTRACTOR or any person, firm or corporation employed by the

CONTRACTOR upon or in connection with the work called for in this Agreement, except for liability resulting from the sole negligence or willful misconduct of the AUHSD, its officers, employees, agents or independent contractors who are directly employed by the AUHSD, and except for liability resulting from the active negligence of the AUHSD.

(b) Any injury to or death of persons or damage to property caused by any act, neglect, default or omission of the CONTRACTOR, or any person, firm, or corporation employed by the CONTRACTOR, either directly or by independent contract, including all damages due to loss or theft, sustained by any person, firm or corporation, including the AUHSD arising out of, or in any way connected with the work covered by this Agreement, whether said injury or damage occurs either on or off AUHSD property, if the liability arose from the negligence or willful misconduct of anyone employed by the CONTRACTOR, either directly or by independent contract, and not by the active negligence of the AUHSD.

(c) The CONTRACTOR, at CONTRACTOR's own expense, cost, and risk shall defend any and all actions, suits, or other proceedings that may be brought or instituted against the AUHSD, its officers, agents or employees, or any such claim, demand or liability, and shall pay or satisfy any judgment that may be rendered against the AUHSD, its officers, agents or employees in any action, suit or other proceedings as a result thereof.

7. Insurance:

CONTRACTOR shall take out, prior to commencing the work, and maintain, during the life of this contract, and shall require all subcontractors, if any, whether primary or secondary, to take out and maintain the following policies issued by insurance companies authorized to transact business in the State of California and which comply with all requirements of the Department of Insurance for the State of California:

- (a) Public Liability Insurance
for injuries including accidental death,
to any one person in an amount
not less than \$ 1,000,000.00
per occurrence

and,

- (b) Subject to the same limit
for each person on account of
one accident, in an amount
not less than \$ 1,000,000.00
per occurrence
\$ 3,000,000.00
aggregate
- (c) Property Damage Insurance
in an amount not less than \$ 1,000,000.00
per occurrence
\$ 3,000,000.00
aggregate

- (d) Course of Construction insurance in an amount not less than \$1,000,000.00
- (e) Comprehensive Automobile Liability Insurance covering the use of all owned, non-owned and hired vehicles with combined bodily injury and property damage in an amount not less than
 - \$ 1,000,000.00 per occurrence
 - \$ 3,000,000.00 aggregate

8. Copies of Drawings and Specifications:

The number of copies of drawings and specifications to be furnished to CONTRACTOR free of charge, as provided in the General Conditions, is two (2). Additional copies may be obtained at cost of reproduction.

9. Required Number of Executed Copies:

The number of executed copies of the Agreement, the Contractor's Certificate, the Performance Bond and the Payment Bond required is three (3).

10. Substitution of Securities:

Pursuant to Section 22300 of the Public Contract Code, this Contract permits the substitution of securities for any monies withheld by the AUHSD to ensure performance under this Contract. At the request and expense of the CONTRACTOR, securities equivalent to the amount withheld shall be deposited with the AUHSD, or with a state or federally chartered bank in California as the escrow agent, who shall then pay such monies to the CONTRACTOR. Upon satisfactory completion of the Contract, the securities shall be returned to the CONTRACTOR. Alternatively, the CONTRACTOR may request and the AUHSD shall make payment of retentions earned directly to the escrow agent at the expense of the CONTRACTOR.

Securities eligible for investment under this section shall include those listed in section 16430 of the Government Code, or bank or savings and loan certificates of deposit. The CONTRACTOR shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

11. Corporate Status:

If CONTRACTOR is a corporation, the undersigned hereby represents and warrants that the corporation is duly incorporated and in good standing in the State of California, and that _____ whose title is _____ is authorized to act for and bind the corporation.

12. Required Provisions:

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon application of either party the Contract shall forthwith be physically amended to make such insertion or correction.

13. Entire Agreement.

The complete contract as set forth in Paragraph 1 of this Agreement constitutes the entire Agreement of the parties. No other agreements, oral or written, pertaining to the work to be performed under this contract, exists between the parties. This contract can be modified only by an agreement in writing, signed by both parties and pursuant to action of the Governing Board.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed.

AUHSD

CONTRACTOR

By: _____

Its: _____

Date: _____

Date: _____

Contractor's License No.

(CORPORATE SEAL
OF CONTRACTOR,
if corporation)

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

! To Be Submitted with Pricing Package!
! Do not include in Bid Package!

This Escrow Agreement is made and entered into, as of _____, 20__ by and between the Anderson Union High School District District AUHSD whose address is, 685 Lewiston Road, Lewiston, California 96052, hereinafter called "AUHSD," _____, whose address _____, hereinafter called "Contractor" _____, whose address is _____ hereinafter called "Escrow Agent."

For the consideration hereinafter set forth, the AUHSD, Contractor, and Escrow Agent agree as follows:

- (1) Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by AUHSD pursuant to the Construction Contract entered into between the AUHSD and Contractor for _____ in the amount of _____, dated _____, 20__ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the AUHSD shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agency shall notify the AUHSD within ten (10) days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the AUHSD and Contractor. Securities shall be held in the name of _____, and shall designate the Contractor as the beneficial owner.
- (2) The AUHSD shall make progress payments to the Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.
- (3) When the AUHSD makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until such time as the escrow created under this Agreement is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the AUHSD pays the Escrow Agent directly.

- (4) Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the AUHSD. These expenses and payment terms shall be determined by the AUHSD, Contractor, and Escrow Agent.
- (5) The interest earned on the securities or the money market accounts held in Escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the AUHSD.
- (6) Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the AUHSD to the Escrow Agent that AUHSD consents to the withdrawal of the amount sought to be withdrawn by Contractor.
- (7) The AUHSD shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven days' written notice to the Escrow Agent from the AUHSD of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the AUHSD.
- (8) Upon receipt of written notification from the AUHSD certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less Escrow fees and charges of the Escrow Account. The Escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payments of fees and charges.
- (9) Escrow Agent shall rely on the written notification from the AUHSD and the Contractor pursuant to Sections (5) to (8), inclusive, of this Agreement and the AUHSD and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.
- (10) The names of the persons who are authorized to give written notice or to receive written notice on behalf of the AUHSD and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as set forth on the following page:

On behalf of AUHSD:

Title

Name

Signature

Address

On behalf of Escrow Agent:

Title

Name

Signature

Address

On behalf of Contractor:

Title

Name

Signature

Address

At the time the Escrow Account is opened, the AUHSD and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

AUHSD

Title

Name

Signature

Escrow Agent

Name Title

Signature

Contractor

Title

Name

Signature

GUARANTEE

Guarantee for _____ . We hereby guarantee that the _____ which we have installed at _____ has been installed in accordance with the drawings and specifications and that the work as installed will fulfill the requirements included in the specifications. The undersigned agrees to repair or replace any or all of such work, together with any other adjacent work which may be displaced in connection with such replacement, that may prove to be defective in workmanship or material within a period of _____ () year(s) from the date of acceptance of the above-mentioned item by the Anderson Union High School District District AUHSD, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of the undersigned's failure to comply with the above mentioned conditions within a reasonable period of time, as determined by the AUHSD, but not later than ____ () days after being notified in writing by the AUHSD, the undersigned authorizes the AUHSD to proceed to have said defects repaired or replaced and made good at the expense of undersigned, which will pay the costs and charges therefore upon demand.

Countersigned

(Proper Name)

(Proper Name)

By _____

By _____

(Signature of Subcontractor or
General Contractor)

(Signature of General Contractor
if for Subcontractor)

Representatives to be contacted for service:

Name: _____

Address: _____

Phone No.: _____

SHOP DRAWING TRANSMITTAL FORM

Pursuant to Article 23 of the General Conditions, the Contractor shall use this transmittal form for submittal of shop drawings to the AUHSD. The procedure governing shop drawings submittal is contained in the General Conditions of the Contract Documents.

Failure to comply with all requirements specified therein will constitute grounds for return of the shop drawings for proper resubmittal. The Contractor shall sequentially number each submittal.

Date: _____ Submittal No.: _____

From: _____ To: _____

Attention: _____

Project Name: _____ Check One: _____

Owner: _____

This is: An original submittal _____
 A second submittal _____
 A [] submittal _____

Subject of Submittal:	Equipment Designation:	Specification Section (s):
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Complete either (a) or (b) as follows: Check One: _____

(a) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown (no exceptions). _____

(b) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown, except for the following deviations (List deviations on attached sheet) _____

Contractor's or Supplier's
Authorized Signature:

Printed Name

SUPPLEMENTAL CONDITIONS

Contractor is hereby notified that the AUHSD is not employing the use of an Architect for the purposes of this contract.