

To: David Peterson, Superintendent
From: Peter Jurhs, Director of Information Technology
Scott Jacobsen, Budget/Purchasing Supervisor
Date: March 15, 2016
Re: Technology bid award recommendations

We recently completed the process of pursuing bids for a number of technology projects:

- Network switching equipment
- District fiber update
- Centennial Elementary School wiring update
- Greenhurst Elementary School wiring update
- Roosevelt, Sherman, and Iowa Elementary Schools wiring updates
- South Middle School wiring update

Included for your review are copies of the original, published bid notices; complete copies of the bid packets for each project; the district's Plant Data Cabling Specification; the Q&A form featuring questions submitted by interested parties, along with the answers provided; and a complete listing of all bids submitted, for each of the unique bid sections.

The four building wiring update bids and the district fiber update were evaluated according to:

1. Cost
2. Quality of the product proposed and conformity with specifications
3. Warranty and maintenance resources, capability, and capacity

The District Switching Equipment bid was evaluated according to:

1. Integration with our existing network infrastructure
2. Cost
3. Quality of the product proposed and conformity with specifications
4. Warranty and maintenance resources

Our recommendations for the award of each bid section is as follows:

Bid Section	Award Recommendation	Bid Amount	NSD Share
District Switching Equipment	Coeur d'com	\$684,482.97	\$136,896.59
District Fiber Update	Automated Cabling Technology	\$50,232.67	\$10,046.53
Centennial Wiring Update	Automated Cabling Technology	\$25,231.11	\$5,046.22
Greenhurst Wiring Update	System Tech Inc.	\$12,430.00	\$2,486.00
Roosevelt/Sherman/Iowa Update	Automated Cabling Technology	\$7,257.12	\$1,451.42
South Update	System Tech Inc.	\$55,800.00	\$11,160.00

The NSD Share columns lists the actual cost to the district of each bid. These purchases are substantially underwritten through E-Rate funding furnished by the Federal Communications Commission; FCC E-Rate funding pays 80% of the cost, with the district paying the remaining 20%.

A summary grid of pricing on all sections, from all bidders is provided on the last page of this recommendation.

Regarding the Centennial Wiring Update recommendation: ACS Systems provided the lowest bid price on the Centennial wiring update. Their bid, however, specified OM2 fiber, while the bid documents specified OM3 fiber. District electronics are such that OM3 fiber provides better connectivity. Given this bid deficiency, we recommend the second-lowest bidder—Automated Cabling Technology—be awarded that project.

The District Switching Equipment bid evaluation utilized a weighting formula that assigned the greatest weight to price; this greater-weight assignment to cost is a requirement of the E-Rate federal funding program from which this purchase will ultimately be made. The static scores and weighted scores for this section are included below.

The static score section is scored as follows:

- **Integration with existing network**—Bids featuring equipment that will integrate with our existing network are scored a 1.
- **Cost**—Static scores are assigned a score relative to the lowest, with the lowest score receiving 1; greater variance from the lowest score are amplified proportionally.
- **Quality of proposed solution**—The use of preferred equipment or approved alternatives, with consideration given to performance, configuration, and management requirements.
**See note below for details regarding this scoring*
- **Warranty & maintenance**—Non-HP equipment solutions and bidders were deemed to have warranty and maintenance qualifications equal to those of HP-quoting bidders, and all were assigned equivalent scores.

**Coeur d'com and Tek Hut each received a 1 because each quoted the requested HP equipment. CompuNet was marked lower for use of Cisco equipment, but not penalized further based on their submitted evidence of compatibility with HP equipment. Pine Cove was marked lower for the use of Brocade equipment, and further penalized for using a stacked-array solution (three unique devices interconnected) rather than a single-unit switch; the stacked array is deemed to deliver slower throughput speeds. CompuNet and Pine Cove each received deductions for non-HP equipment based on differing management requirements for non-HP equipment, should such be installed.*

Static scores	Integrates with existing network	Cost	Quality of proposed solution	Warranty & maintenance
Coeur d'com	1	0.95	1	1
CompuNet	1	0.73	0.8	1
Pine Cove Consulting	1	1.00	0.75	1
Tek Hut	1	0.54	1	1

Weighted scores	Integrates with existing network	Cost	Quality of proposed solution	Warranty & maintenance	Total weighted score
<i>Category weight</i>	25%	26%	25%	24%	100%
Coeur d'com	0.25	0.25	0.25	0.24	0.988
CompuNet	0.25	0.19	0.20	0.24	0.880
Pine Cove Consulting	0.25	0.26	0.19	0.24	0.938
Tek Hut	0.25	0.14	0.25	0.24	0.879

Summary Bid Pricing Grid

Bidders	Bid Section					
	District Switching Equipment	District Fiber Update	Centennial Wiring Update	Greenhurst Wiring Update	Roosevelt/Sherman/Iowa Wiring Updates	South Wiring Update
ACS Systems		\$39,395.00	\$32,945.00	\$17,841.00	\$9,236.00	\$67,366.00
Automated Cabling Technology		\$50,232.67	\$25,231.11	\$13,144.51	\$7,257.12	\$55,861.72
System Tech Inc.		\$57,693.00	\$28,620.00	\$12,430.00	\$8,350.00	\$55,800.00
Couer d'com	\$684,482.97					
CompuNet Inc	\$893,782.40					
Pine Cove Consulting	\$651,667.74					
Tek-Hut Inc	\$1,215,623.00					

Successful application for the E-Rate funding mentioned previously requires that we submit our purchase funding request to our E-Rate consultant no later than April 15. Given this timeline, your prompt attention to, and approval of, this award recommendation is appreciated.

Please contact us if you have any questions regarding any of these recommendations or the bid process.

Respectfully submitted,

Peter Jurhs
Director, Information Services

Scott Jacobsen
Budget/Purchasing Supervisor

Nampa School District No. 131
Call for Bids for Network Switching Equipment

NOTICE IS HEREBY GIVEN that sealed bids will be received by the Board of Trustees of Nampa School District No. 131, Idaho, for **Network Switching Equipment**.

All bid respondents must be registered, approved vendors with the USAC, have a Service Provider Identification Number (SPIN) and be capable of providing E-rate services including Service Provider Invoicing (SPI) billing.

Bid documents and detailed specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the district office. Questions regarding the bid may be directed to Scott Jacobsen, Budget/Purchasing Supervisor, 619 South Canyon Street, Nampa, Idaho 83686, Monday through Friday between the hours of 8:00 am and 3:30 pm.

Bids must be submitted on or before **1:00 pm Mountain Time, Monday, February 29, 2016** to the Clerk of the Board, District Office, 619 South Canyon Street, Nampa, Idaho 83686. Bids received after this stated date and time will not be considered. At this stated date, time, and location the bids will be publicly opened.

The Board of Trustees reserves the right to accept or reject any or all bids and to waive any technicality. No bidder may withdraw its bid after the opening of such bids unless the awarding of the bid is delayed for a period exceeding thirty (30) days.

Clerk, Board of Trustees
Nampa School District No. 131
619 S. Canyon Street
Nampa, Idaho 83686

Publish 2/8/2016 & 2/16/2016

Nampa School District No. 131
Call for Bids for Building Fiber Optic Cabling Updates

NOTICE IS HEREBY GIVEN that sealed bids will be received by the Board of Trustees of Nampa School District No. 131, Idaho, for **Building Fiber Optic Cabling Updates**.

All bid respondents must be registered, approved vendors with the USAC, have a Service Provider Identification Number (SPIN) and be capable of providing E-rate services including Service Provider Invoicing (SPI) billing.

Bid documents and detailed specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the district office. Questions regarding the bid may be directed to Scott Jacobsen, Budget/Purchasing Supervisor, 619 South Canyon Street, Nampa, Idaho 83686, Monday through Friday between the hours of 8:00 am and 3:30 pm.

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619 S. Canyon Street
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Publish 2/8/2016 & 2/16/2016

Nampa School District No. 131
Call for Bids for Centennial Elementary Building Wiring Update

NOTICE IS HEREBY GIVEN that sealed bids will be received by the Board of Trustees of Nampa School District No. 131, Idaho, for **Centennial Elementary Building Wiring Update**.

All bid respondents must be registered, approved vendors with the USAC, have a Service Provider Identification Number (SPIN) and be capable of providing E-rate services including Service Provider Invoicing (SPI) billing.

Bid documents and detailed specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the district office. Questions regarding the bid may be directed to Scott Jacobsen, Budget/Purchasing Supervisor, 619 South Canyon Street, Nampa, Idaho 83686, Monday through Friday between the hours of 8:00 am and 3:30 pm.

Bids must be submitted on or before **1:00 pm Mountain Time, Monday, February 29, 2016** to the Clerk of the Board, District Office, 619 South Canyon Street, Nampa, Idaho 83686. Bids received after this stated date and time will not be considered. At this stated date, time, and location the bids will be publicly opened.

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Publish 2/8/2016 & 2/16/2016

Nampa School District No. 131
Call for Bids for Greenhurst Elementary Building Wiring Update

NOTICE IS HEREBY GIVEN that sealed bids will be received by the Board of Trustees of Nampa School District No. 131, Idaho, for **Greenhurst Elementary Building Wiring Update**.

All bid respondents must be registered, approved vendors us the USAC, have a Service Provider Identification Number (SPIN) and be capable of providing E-rate services including Service Provider Invoicing (SPI) billing.

Bid documents and detailed specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the district office. Questions regarding the bid may be directed to Scott Jacobsen, Budget/Purchasing Supervisor, 619 South Canyon Street, Nampa, Idaho 83686, Monday through Friday between the hours of 8:00 am and 3:30 pm.

Bids must be submitted on or before **1:00 pm Mountain Time, Monday, February 29, 2016** to the Clerk of the Board, District Office, 619 South Canyon Street, Nampa, Idaho 83686. Bids received after this stated date and time will not be considered. At this stated date, time, and location the bids will be publicly opened.

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619 S. Canyon Street
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Publish 2/8/2016 & 2/16/2016

Nampa School District No. 131
Call for Bids for Roosevelt, Sherman, and Iowa Elementaries Building Wiring Update

NOTICE IS HEREBY GIVEN that sealed bids will be received by the Board of Trustees of Nampa School District No. 131, Idaho, for **Roosevelt, Sherman, and Iowa Elementaries Building Wiring Update**.

All bid respondents must be registered, approved vendors with the USAC, have a Service Provider Identification Number (SPIN) and be capable of providing E-rate services including Service Provider Invoicing (SPI) billing.

Bid documents and detailed specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the district office. Questions regarding the bid may be directed to Scott Jacobsen, Budget/Purchasing Supervisor, 619 South Canyon Street, Nampa, Idaho 83686, Monday through Friday between the hours of 8:00 am and 3:30 pm.

Bids must be submitted on or before **1:00 pm Mountain Time, Monday, February 29, 2016** to the Clerk of the Board, District Office, 619 South Canyon Street, Nampa, Idaho 83686. Bids received after this stated date and time will not be considered. At this stated date, time, and location the bids will be publicly opened.

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Clerk, Board of Trustees
Nampa School District No. 131
619 S. Canyon Street
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Publish 2/8/2016 & 2/16/2016

Nampa School District No. 131
Call for Bids South Middle School Building Wiring Update

NOTICE IS HEREBY GIVEN that sealed bids will be received by the Board of Trustees of Nampa School District No. 131, Idaho, for **South Middle School Building Wiring Update**.

All bid respondents must be registered, approved vendors with the USAC, have a Service Provider Identification Number (SPIN) and be capable of providing E-rate services including Service Provider Invoicing (SPI) billing.

Bid documents and detailed specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the district office. Questions regarding the bid may be directed to Scott Jacobsen, Budget/Purchasing Supervisor, 619 South Canyon Street, Nampa, Idaho 83686, Monday through Friday between the hours of 8:00 am and 3:30 pm.

Bids must be submitted on or before **1:00 pm Mountain Time, Monday, February 29, 2016** to the Clerk of the Board, District Office, 619 South Canyon Street, Nampa, Idaho 83686. Bids received after this stated date and time will not be considered. At this stated date, time, and location the bids will be publicly opened.

The Board of Trustees reserves the right to accept or reject any or all bids and to waive any technicality. No bidder may withdraw its bid after the opening of such bids unless the awarding of the bid is delayed for a period exceeding thirty (30) days.

Clerk, Board of Trustees
Nampa School District No. 131
619 S. Canyon Street
Nampa, Idaho 83686

Publish 2/8/2016 & 2/16/2016

Invitation to Bid

Your company is hereby invited to submit a BID QUOTATION ON THE ITEMS AND QUANTITY AS FURTHER DESCRIBED IN THIS WRITTEN INVITATION. Please return your bid as prescribed in the accompanying specifications.

Bid documents and specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the District Office at 208-468-4600, between the hours of 8:00 am and 3:30 pm, Monday through Friday.

Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016 to the Clerk of the Board, Nampa School District, 619 South Canyon Street, Nampa, Idaho, 83686. Bids received after this date and time will not be considered. At the stated date, time, and place the bids will be publicly opened.

The Board of Trustees reserves the right to accept or reject any or all bids and to waive any technicality. No bidder may withdraw its bid after the opening of such bids unless the awarding of the bid is delayed for a period exceeding thirty (30) days.

General Bid Conditions and Requirements

1. The Nampa School District is requesting bids for Hewlett Packard switching equipment, or equivalent, to improve our distribution of internet bandwidth and network services throughout the district.
2. All bid respondents must be registered, approved vendors with USAC, have a Service Provider Identification Number (SPIN) and be capable of providing E-Rate services including Service Provider Invoicing (SPI) billing.
3. Proposals for network switching equipment shall meet or exceed the minimum equipment requirements as specified herein by the District's Network Engineer. Any substitutions must meet or exceed the specifications of compatibility and performance of the listed part.
4. All proposed equipment must be new (never used) devices.
5. Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016. Bids are to be submitted in a sealed envelope or other container and should be clearly marked "NETWORK SWITCHING EQUIPMENT BID." Bids may be submitted via generally accepted mail carrier or in person. Responsibility for ensuring the proper and timely arrival of any submitted bid shall rest solely with the bidder. The bid must be signed in ink by an authorized representative of the bidder.
6. Please submit a separate form for each facility listed as well as a single cover sheet summary.
7. No bid may be withdrawn after the time of opening. The School District may, at its option, require a Performance Bond of the successful bidder. The District reserves the right to accept or reject any and/or all bids, portions thereof, and waive any formality which is deemed to be in the best interest of Nampa School District No. 131.

8. Bids will be evaluated based on, in order of priority: (1) integration with our existing network infrastructure; (2) cost; (3) quality of the product proposed and conformity with specifications, capability, and capacity; and (4) warranty and maintenance resources.
9. All bid pricing should be delivered pricing, F.O.B. Nampa, Idaho.
10. Bid pricing is to be held firm for one (1) year from the date of bid opening.
11. At the discretion of the District, the project may be wholly or in part contingent upon successful E-Rate funding.
12. Questions regarding this bid must be submitted and received by Nampa School District NO LATER THAN Monday, February 15, 2016. Questions received after this date will not be addressed. Questions and the respective answers will be publicly posted on the District website at www.nsd131.org/District under the menu listing Purchasing/Bids. Questions submitted in writing may be mailed to:

Scott Jacobsen
 Budget/Purchasing Supervisor
 619 S. Canyon Street
 Nampa, ID 83686

Alternatively, questions may be submitted via email to:

bids@nsd131.org

13. All inquiries should be clearly marked as pertaining to this bid, either on the envelope/container or in the subject line.
14. Bids will be jointly evaluated by the Technology and Finance departments and a recommendation for the award of the contract will be made to the Board of Trustees. Notification of the award will be made subsequent to formal approval by the Board.
15. Bid item listing, by facility:

<i>Location: Centennial Elementary</i>		
Quantity	HP Model Number	Description
1	J9823A	5406R-44G-PoE+ Switch
2	J9546A	HP 8P 10GBase-T v2 Module
3	J9534A	HP 24P Gig-T PoE+ v2 Module
2	J9829A	5400R 1100w Power Supply
2	J9588A	3800-48G-PoE+ Switch

<i>Location: Central Elementary</i>		
Quantity	HP Model Number	Description
1	J9826A	5412R-92G-PoE+ v2 Switch
1	J9546A	HP 8P 10GBase-T v2 Module
5	J9534A	HP 24P Gig-T PoE+ v2 Module
2	J9829A	5400R 1100w Power Supply

<i>Location: Endeavor Elementary</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
1	J9546A	HP 8P 10GBase-T v2 Module
2	J9150A	HP X132 10G SFP+ LC SR Transceiver
6	J9534A	HP 24P Gig-T PoE+ v2 Module
4	J9829A	5400R 1100w Power Supply

<i>Location: Iowa Elementary</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
2	J9546A	HP 8P 10GBase-T v2 Module
6	J9534A	HP 24P Gig-T PoE+ v2 Module
4	J9829A	5400R 1100w Power Supply
1	J9588A	3800-48G-PoE+ Switch

<i>Location: Lake Ridge Elementary</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
1	J9546A	HP 8P 10GBase-T v2 Module
2	J9150A	HP X132 10G SFP+ LC SR Transceiver
6	J9534A	HP 24P Gig-T PoE+ v2 Module
4	J9829A	5400R 1100w Power Supply
16	J9773A	2530 24G-PoE+ Switch

<i>Location: New Horizons Elementary</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
1	J9546A	HP 8P 10GBase-T v2 Module
2	J9150A	HP X132 10G SFP+ LC SR Transceiver
6	J9534A	HP 24P Gig-T PoE+ v2 Module
4	J9829A	5400R 1100w Power Supply

<i>Location: Owyhee Elementary</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
2	J9546A	HP 8P 10GBase-T v2 Module
2	J9150A	HP X132 10G SFP+ LC SR Transceiver
6	J9534A	HP 24P Gig-T PoE+ v2 Module
4	J9829A	5400R 1100w Power Supply

<i>Location: Park Ridge Elementary</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
2	J9546A	HP 8P 10GBase-T v2 Module
6	J9534A	HP 24P Gig-T PoE+ v2 Module
4	J9829A	5400R 1100w Power Supply

<i>Location: Reagan Elementary</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
2	J9546A	HP 8P 10GBase-T v2 Module
2	J9150A	HP X132 10G SFP+ LC SR Transceiver
6	J9534A	HP 24P Gig-T PoE+ v2 Module
4	J9829A	5400R 1100w Power Supply

<i>Location: Roosevelt Elementary</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
2	J9546A	HP 8P 10GBase-T v2 Module
2	J9150A	HP X132 10G SFP+ LC SR Transceiver
6	J9534A	HP 24P Gig-T PoE+ v2 Module
4	J9829A	5400R 1100w Power Supply
1	J9588A	3800-48G-PoE+ Switch
32	J9774A	2530 24G-PoE+ Switch

<i>Location: Sherman Elementary</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
2	J9546A	HP 8P 10GBase-T v2 Module
6	J9534A	HP 24P Gig-T PoE+ v2 Module
4	J9829A	5400R 1100w Power Supply
1	J9588A	3800-48G-PoE+ Switch

<i>Location: Snake River Elementary</i>		
Quantity	HP Model Number	Description
1	J9826A	5412R-92G-PoE+ v2 Switch
1	J9546A	HP 8P 10GBase-T v2 Module
6	J9150A	HP X132 10G SFP+ LC SR Transceiver
9	J9534A	HP 24P Gig-T PoE+ v2 Module
6	J9829A	5400R 1100w Power Supply
2	J9823A	5406R-44G-PoE+ Switch

<i>Location: Willow Creek Elementary</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
1	J9546A	HP 8P 10GBase-T v2 Module
6	J9534A	HP 24P Gig-T PoE+ v2 Module
4	J9829A	5400R 1100w Power Supply
0	J9588A	3800-48G-PoE+ Switch
2	J9150A	HP X132 10G SFP+ LC SR Transceiver
16	J9774A	2530 24G-PoE+ Switch

<i>Location: East Valley Middle School</i>		
Quantity	HP Model Number	Description
1	J9546A	HP 8P 10GBase-T v2 Module
3	J9538A	HP 8-Port 10Gb SPF+ v2 zl Module
18	J9150A	HP X132 10G SFP+ LC SR Transceiver
9	J9574A	3800-48G-PoE+ 4P SFP+ Switch
1	J9588A	3800-48G-PoE+ Switch

<i>Location: Lone Star Middle School</i>		
Quantity	HP Model Number	Description
5	J9823A	5406R-44G-PoE+ Switch
10	J9150A	HP X132 10G SFP+ LC SR Transceiver
16	J9534A	HP 24P Gig-T PoE+ v2 Module
10	J9829A	5400R 1100w Power Supply

<i>Location: South Middle School</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
12	J9150A	HP X132 10G SFP+ LC SR Transceiver
8	J9534A	HP 24P Gig-T PoE+ v2 Module
4	J9829A	5400R 1100w Power Supply
2	J9574A	3800-48G-PoE+ 4P SFP+ Switch
2	J9588A	3800-48G-PoE+ Switch

<i>Location: West Middle School</i>		
Quantity	HP Model Number	Description
4	J9823A	5406R-44G-PoE+ Switch
8	J9150A	HP X132 10G SFP+ LC SR Transceiver
12	J9534A	HP 24P Gig-T PoE+ v2 Module
8	J9829A	5400R 1100w Power Supply
1	J9574A	3800-48G-PoE+ 4P SFP+ Switch

<i>Location: Columbia High School</i>		
Quantity	HP Model Number	Description
1	J9546A	HP 8P 10GBase-T v2 Module
3	J9538A	HP 8-Port 10Gb SPF+ v2 zl Module
26	J9150A	HP X132 10G SFP+ LC SR Transceiver
5	J9577A	HP 3800 4 Port Stacking Module
4	J9665A	3800/3810 1m Stacking Cable
19	J9574A	3800-48G-PoE+ 4P SFP+ Switch
2	J9588A	3800-48G-PoE+ Switch

<i>Location: Nampa High School</i>		
Quantity	HP Model Number	Description
2	J9823A	5406R-44G-PoE+ Switch
1	J9826A	5412R-92G-PoE+ v2 Switch
9	J9534A	HP 24P Gig-T PoE+ v2 Module
6	J9829A	5400R 1100w Power Supply
2	J9546A	HP 8P 10GBase-T v2 Module
1	J9538A	HP 8-Port 10Gb SPF+ v2 zl Module
21	J9150A	HP X132 10G SFP+ LC SR Transceiver
9	J9574A	3800-48G-PoE+ 4P SFP+ Switch
4	J9588A	3800-48G-PoE+ Switch

<i>Location: Skyview High School</i>		
Quantity	HP Model Number	Description
3	J9546A	HP 8P 10GBase-T v2 Module
1	J9538A	HP 8-Port 10Gb SPF+ v2 zl Module
8	J9150A	HP X132 10G SFP+ LC SR Transceiver
4	J9574A	3800-48G-PoE+ 4P SFP+ Switch
9	J9588A	3800-48G-PoE+ Switch

<i>Location: Union High School</i>		
Quantity	HP Model Number	Description
1	J9823A	5406R-44G-PoE+ Switch
1	J9546A	HP 8P 10GBase-T v2 Module
2	J9534A	HP 24P Gig-T PoE+ v2 Module
2	J9829A	5400R 1100w Power Supply
4	J9588A	3800-48G-PoE+ Switch

<i>Location: Gateways</i>		
Quantity	HP Model Number	Description
1	J9823A	5406R-44G-PoE+ Switch
4	J9534A	HP 24P Gig-T PoE+ v2 Module
2	J9829A	5400R 1100w Power Supply

Addendum to the Network Switching Equipment Bid Packet February 19, 2016

Part 1 – Changes in Manufacturer Part Numbers

1.1 Due to changes in manufacturer part numbers, item fifteen (15) entitled “Bid Item Listing, by Facility” shall include the following updated part numbers:

1.1.1 Part number J9823A shall be replaced with part number JL003A.

1.1.2 Part number J9826A shall be replaced with part number JL001A.

All specifications pertaining to these new part numbers shall be used as the definitive reference for all submittals.

Invitation to Bid

Your company is hereby invited to submit a BID QUOTATION ON THE MATERIALS AND LABOR AS FURTHER DESCRIBED IN THIS WRITTEN INVITATION. Please return your bid as prescribed in the accompanying specifications.

Bid documents and specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the District Office at 208-468-4600, between the hours of 8:00 am and 3:30 pm, Monday through Friday.

Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016 to the Clerk of the Board, Nampa School District, 619 South Canyon Street, Nampa, Idaho, 83686. Bids received after this date and time will not be considered. At the stated date, time, and place the bids will be publicly opened.

The Board of Trustees reserves the right to accept or reject any or all bids and to waive any technicality. No bidder may withdraw its bid after the opening of such bids unless the awarding of the bid is delayed for a period exceeding thirty (30) days.

General Bid Conditions and Requirements

1. The Nampa School District is requesting itemized bids for building wiring updates to several buildings. Each bid should be organized by building and include all materials and labor required to complete each building installation.
2. All bid respondents must be registered, approved vendors with USAC, have a Service Provider Identification Number (SPIN) and be capable of providing E-Rate services including Service Provider Invoicing (SPI) billing.
3. The bid should include an estimated time to complete each building installation.
4. Proposals should adhere to District network design standards as determined by the District's Network Engineer. This document is entitled "Nampa School District Data Cable Plant Specification" and may be found on the District website at www.nsd131.org/District under the menu listing Purchasing/Bids.
5. The updates will be to replace existing fiber optic cabling with 50µ fiber optic cabling or install new fiber optic cabling at the following ten locations:

Central Elementary	1 fiber run	Lone Star Middle School	4 fiber runs
Columbia High School	7 fiber runs	Owyhee Elementary	1 fiber run
East Valley Middle School	5 fiber runs	Reagan Elementary	1 fiber run
Endeavor Elementary	1 fiber run	West Middle School	3 fiber runs
Lake Ridge Elementary	1 fiber run	Willow Creek Elementary	1 fiber run

6. Interested bidders must attend a scheduled project review time. District personnel will review building plans and provide opportunities to walk through each building with the Network Engineer. The place and time for this review are:

Nampa School District Tech Center
1002 Front Street
Nampa, Idaho 83651

Friday, February 12, 2016
9:00 am Mountain Time

7. All proposed equipment, cabling, and hardware must be new (never used) items.
8. Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016. Bids are to be submitted in a sealed envelope or other container and should be clearly marked "FIBER UPDATES BID." Bids may be submitted via generally accepted mail carrier or in person. Responsibility for ensuring the proper and timely arrival of any submitted bid shall rest solely with the bidder. The bid must be signed in ink by an authorized representative of the bidder.
9. No bid may be withdrawn after the time of opening. The District reserves the right to accept or reject any and/or all bids, portions thereof, and waive any formality which is deemed to be in the best interest of Nampa School District No. 131.
10. Bids will be evaluated based on, in order of priority: (1) cost; (2) quality of the product proposed and conformity with specifications; and (3) warranty and maintenance resources, capability, and capacity.
11. All bid pricing should be delivered pricing, F.O.B. Nampa, Idaho.
12. Bid pricing is to be held firm for one (1) year from the date of bid opening.
13. At the discretion of the District, the project may be wholly or in part contingent upon successful E-Rate funding.
14. Questions regarding this bid must be submitted and received by Nampa School District NO LATER THAN Monday, February 15, 2016. Questions received after this date will not be addressed. Questions and the respective answers will be publicly posted on the District website at www.nsd131.org/District under the menu listing Purchasing/Bids. Questions submitted in writing may be mailed to:

Scott Jacobsen
Budget/Purchasing Supervisor
619 S. Canyon Street
Nampa, ID 83686

Alternatively, questions may be submitted via email to:

bids@nsd131.org

All inquiries should be clearly marked as pertaining to this bid, either on the envelope/container or in the subject line.

15. Bids will be jointly evaluated by the Technology and Finance departments and a recommendation for the award of the contract will be made to the Board of Trustees. Notification of the award will be made subsequent to formal approval by the Board.

Invitation to Bid

Your company is hereby invited to submit a BID QUOTATION ON THE MATERIALS AND LABOR AS FURTHER DESCRIBED IN THIS WRITTEN INVITATION. Please return your bid as prescribed in the accompanying specifications.

Bid documents and specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the District Office at 208-468-4600, between the hours of 8:00 am and 3:30 pm, Monday through Friday.

Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016 to the Clerk of the Board, Nampa School District, 619 South Canyon Street, Nampa, Idaho, 83686. Bids received after this date and time will not be considered. At the stated date, time, and place the bids will be publicly opened.

The Board of Trustees reserves the right to accept or reject any or all bids and to waive any technicality. No bidder may withdraw its bid after the opening of such bids unless the awarding of the bid is delayed for a period exceeding thirty (30) days.

General Bid Conditions and Requirements

1. The Nampa School District is requesting itemized bids for a building wiring update to Centennial Elementary School.
2. All bid respondents must be registered, approved vendors with USAC, have a Service Provider Identification Number (SPIN), and be capable of providing E-Rate services including Service Provider Invoicing (SPI) billing.
3. The bid should include all materials and labor required to complete the installation for the building.
4. The bid should include an estimated time to complete the building installation.
5. Proposals should adhere to District network design standards as determined by the District's Network Engineer. This document is entitled "Nampa School District Data Cable Plant Specification" and may be found on the District website at www.nsd131.org/District under the menu listing Purchasing/Bids.
6. The update will be to replace one (1) run of existing fiber optic cabling with 50µ fiber optic cabling, add two (2) Cat-6A cable runs, and add or replace up to 190 Cat5e drops at Centennial Elementary School.
7. Interested bidders must attend a scheduled building walk-through. The place and time for this review are:

Centennial Elementary School
522 Mason Lane
Nampa, Idaho 83686

Thursday, February 11, 2016
9:00 am Mountain Time

8. All proposed equipment, cabling, and hardware must be new (never used) items.
9. Installation work may not be performed during school hours.
10. Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016. Bids are to be submitted in a sealed envelope or other container and should be clearly marked "CENTENNIAL WIRING UPDATE BID." Bids may be submitted via generally accepted mail carrier or in person. Responsibility for ensuring the proper and timely arrival of any submitted bid shall rest solely with the bidder. The bid must be signed in ink by an authorized representative of the bidding company.
11. No bid may be withdrawn after the time of opening. The District reserves the right to accept or reject any and/or all bids, portions thereof, and waive any formality which is deemed to be in the best interest of Nampa School District No. 131.
12. Bids will be evaluated based on, in order of priority: (1) cost; (2) quality of the product proposed and conformity with specifications; and (3) warranty and maintenance resources, capability, and capacity.
13. All bid pricing should be delivered pricing, F.O.B. Nampa, Idaho.
14. Bid pricing is to be held firm for one (1) year from the date of bid opening.
15. At the discretion of the District, the project may be wholly or in part contingent upon successful E-Rate funding.
16. Questions regarding this bid must be submitted and received by Nampa School District NO LATER THAN Monday, February 15, 2016. Questions received after this date will not be addressed. Questions and the respective answers will be publicly posted on the District website at www.nsd131.org/District under the menu listing Purchasing/Bids. Questions submitted in writing may be mailed to:

Scott Jacobsen
Budget/Purchasing Supervisor
619 S. Canyon Street
Nampa, ID 83686

Alternatively, questions may be submitted via email to:

bids@nsd131.org

All inquiries should be clearly marked as pertaining to this bid, either on the envelope/container or in the subject line.

17. Bids will be jointly evaluated by the Technology and Finance departments and a recommendation for the award of the contract will be made to the Board of Trustees. Notification of the award will be made subsequent to formal approval by the Board.

Invitation to Bid

Your company is hereby invited to submit a BID QUOTATION ON THE MATERIALS AND LABOR AS FURTHER DESCRIBED IN THIS WRITTEN INVITATION. Please return your bid as prescribed in the accompanying specifications.

Bid documents and specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the District Office at 208-468-4600, between the hours of 8:00 am and 3:30 pm, Monday through Friday.

Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016 to the Clerk of the Board, Nampa School District, 619 South Canyon Street, Nampa, Idaho, 83686. Bids received after this date and time will not be considered. At the stated date, time, and place the bids will be publicly opened.

The Board of Trustees reserves the right to accept or reject any or all bids and to waive any technicality. No bidder may withdraw its bid after the opening of such bids unless the awarding of the bid is delayed for a period exceeding thirty (30) days.

General Bid Conditions and Requirements

1. The Nampa School District is requesting itemized bids for a building wiring update to Greenhurst Elementary School.
2. All bid respondents must be registered, approved vendors with USAC, have a Service Provider Identification Number (SPIN) and be capable of providing E-Rate services including Service Provider Invoicing (SPI) billing.
3. The bid should include all materials and labor required to complete the installation for the building.
4. The bid should include an estimated time to complete the building installation.
5. Proposals should adhere to District network design standards as determined by the District's Network Engineer. This document is entitled "Nampa School District Data Cable Plant Specification" and may be found on the District website at www.nsd131.org/District under the menu listing Purchasing/Bids.
6. The update will be to add or replace 100 Cat5e drops at Greenhurst Elementary School.
7. Interested bidders must attend a scheduled building walk-through. The place and time for this review are:

Greenhurst Elementary School
1701 Discovery Place
Nampa, Idaho 83686

Thursday, February 11, 2016
11:00 am Mountain Time

8. All proposed equipment, cabling, and hardware must be new (never used) items.

9. Installation work may not be performed during school hours.
10. Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016. Bids are to be submitted in a sealed envelope or other container and should be clearly marked "GREENHURST WIRING UPDATE BID." Bids may be submitted via generally accepted mail carrier or in person. Responsibility for ensuring the proper and timely arrival of any submitted bid shall rest solely with the bidder. The bid must be signed in ink by an authorized representative of the bidder.
11. No bid may be withdrawn after the time of opening. The District reserves the right to accept or reject any and/or all bids, portions thereof, and waive any formality which is deemed to be in the best interest of Nampa School District No. 131.
12. Bids will be evaluated based on, in order of priority: (1) cost; (2) quality of the product proposed and conformity with specifications; and (3) warranty and maintenance resources, capability, and capacity.
13. All bid pricing should be delivered pricing, F.O.B. Nampa, Idaho.
14. Bid pricing is to be held firm for one (1) year from the date of bid opening.
15. At the discretion of the District, the project may be wholly or in part contingent upon successful E-Rate funding.
16. Questions regarding this bid must be submitted and received by Nampa School District NO LATER THAN Monday, February 15, 2016. Questions received after this date will not be addressed. Questions and the respective answers will be publicly posted on the District website at www.nsd131.org/District under the menu listing Purchasing/Bids. Questions submitted in writing may be mailed to:

Scott Jacobsen
Budget/Purchasing Supervisor
619 S. Canyon Street
Nampa, ID 83686

Alternatively, questions may be submitted via email to:

bids@nsd131.org

All inquiries should be clearly marked as pertaining to this bid, either on the envelope/container or in the subject line.

17. Bids will be jointly evaluated by the Technology and Finance departments and a recommendation for the award of the contract will be made to the Board of Trustees. Notification of the award will be made subsequent to formal approval by the Board.

Invitation to Bid

Your company is hereby invited to submit a BID QUOTATION ON THE MATERIALS AND LABOR AS FURTHER DESCRIBED IN THIS WRITTEN INVITATION. Please return your bid as prescribed in the accompanying specifications.

Bid documents and specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the District Office at 208-468-4600, between the hours of 8:00 am and 3:30 pm, Monday through Friday.

Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016 to the Clerk of the Board, Nampa School District, 619 South Canyon Street, Nampa, Idaho, 83686. Bids received after this date and time will not be considered. At the stated date, time, and place the bids will be publicly opened.

The Board of Trustees reserves the right to accept or reject any or all bids and to waive any technicality. No bidder may withdraw its bid after the opening of such bids unless the awarding of the bid is delayed for a period exceeding thirty (30) days.

General Bid Conditions and Requirements

1. The Nampa School District is requesting itemized bids for building wiring updates to Roosevelt, Sherman, and Iowa Elementary Schools.
2. All bid respondents must be registered, approved vendors with USAC, have a Service Provider Identification Number (SPIN) and be capable of providing E-Rate services including Service Provider Invoicing (SPI) billing.
3. The bid should include all materials and labor required to complete the installation for the building.
4. The bid should include an estimated time to complete each building installation.
5. Proposals should adhere to District network design standards as determined by the District’s Network Engineer. This document is entitled “Nampa School District Data Cable Plant Specification” and may be found on the District website at www.nsd131.org/District under the menu listing Purchasing/Bids.
6. The updates will be to replace one (1) run of existing fiber optic cabling with 50μ fiber at Roosevelt Elementary and add two (2) Cat-6a cable runs at each of three (3) locations:

Roosevelt Elementary
Sherman Elementary

Iowa Elementary

7. Interested bidders must attend a scheduled building walk-through. The place and time for this review are:

Sherman Elementary School
1521 E. Sherman Avenue
Nampa, Idaho 83686

Thursday, February 11, 2016
10:00 am Mountain Time

8. All proposed equipment, cabling, and hardware must be new (never used) items.
9. Installation work may not be performed during school hours.
10. Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016. Bids are to be submitted in a sealed envelope or other container and should be clearly marked "SHERMAN/ROOSEVELT/IOWA WIRING UPDATES BID." Bids may be submitted via generally accepted mail carrier or in person. Responsibility for ensuring the proper and timely arrival of any submitted bid shall rest solely with the bidder. The bid must be signed in ink by an authorized representative of the bidder.
11. No bid may be withdrawn after the time of opening. The District reserves the right to accept or reject any and/or all bids, portions thereof, and waive any formality which is deemed to be in the best interest of Nampa School District No. 131.
12. Bids will be evaluated based on, in order of priority: (1) cost; (2) quality of the product proposed and conformity with specifications; and (3) warranty and maintenance resources, capability, and capacity.
13. All bid pricing should be delivered pricing, F.O.B. Nampa, Idaho.
14. Bid pricing is to be held firm for one (1) year from the date of bid opening.
15. At the discretion of the District, the project may be wholly or in part contingent upon successful E-Rate funding.
16. Questions regarding this bid must be submitted and received by Nampa School District NO LATER THAN Monday, February 15, 2016. Questions received after this date will not be addressed. Questions and the respective answers will be publicly posted on the District website at www.nsd131.org/District under the menu listing Purchasing/Bids. Questions submitted in writing may be mailed to:

Scott Jacobsen
Budget/Purchasing Supervisor
619 S. Canyon Street
Nampa, ID 83686

Alternatively, questions may be submitted via email to:

bids@nsd131.org

All inquiries should be clearly marked as pertaining to this bid, either on the envelope/container or in the subject line.

17. Bids will be jointly evaluated by the Technology and Finance departments and a recommendation for the award of the contract will be made to the Board of Trustees. Notification of the award will be made subsequent to formal approval by the Board.

Invitation to Bid

Your company is hereby invited to submit a BID QUOTATION ON THE MATERIALS AND LABOR AS FURTHER DESCRIBED IN THIS WRITTEN INVITATION. Please return your bid as prescribed in the accompanying specifications.

Bid documents and specifications are available on the Nampa School District website at www.nsd131.org/District, under the menu listing Purchasing/Bids or may be acquired by contacting the District Office at 208-468-4600, between the hours of 8:00 am and 3:30 pm, Monday through Friday.

Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016 to the Clerk of the Board, Nampa School District, 619 South Canyon Street, Nampa, Idaho, 83686. Bids received after this date and time will not be considered. At the stated date, time, and place the bids will be publicly opened.

The Board of Trustees reserves the right to accept or reject any or all bids and to waive any technicality. No bidder may withdraw its bid after the opening of such bids unless the awarding of the bid is delayed for a period exceeding thirty (30) days.

General Bid Conditions and Requirements

1. The Nampa School District is requesting itemized bids for a building wiring update to South Middle School.
2. All bid respondents must be registered, approved vendors with USAC, have a Service Provider Identification Number (SPIN) and be capable of providing E-Rate services including Service Provider Invoicing (SPI) billing.
3. The bid should include all materials and labor required to complete the installation for the building.
4. The bid should include an estimated time to complete each building installation.
5. Proposals should adhere to District network design standards as determined by the District's Network Engineer. This document is entitled "Nampa School District Data Cable Plant Specification" and may be found on the District website at www.nsd131.org/District under the menu listing Purchasing/Bids.
6. The updates will be to replace four (4) runs of existing fiber optic cabling with 50µ fiber optic cable and add or replace up to 450 Cat5e drops at South Middle School.
7. Interested bidders must attend a scheduled building walk-through. The place and time for this review are:

South Middle School
229 W. Greenhurst Road
Nampa, Idaho 83686

Thursday, February 11, 2016
12:00 pm Mountain Time

8. All proposed equipment, cabling, and hardware must be new (never used) items.
9. Installation work may not be performed during school hours.
10. Bids must be submitted on or before 1:00 pm Mountain Time, Monday, February 29, 2016. Bids are to be submitted in a sealed envelope or other container and should be clearly marked "SOUTH WIRING UPDATE BID." Bids may be submitted via generally accepted mail carrier or in person. Responsibility for ensuring the proper and timely arrival of any submitted bid shall rest solely with the bidder. The bid must be signed in ink by an authorized representative of the bidder.
11. No bid may be withdrawn after the time of opening. The District reserves the right to accept or reject any and/or all bids, portions thereof, and waive any formality which is deemed to be in the best interest of Nampa School District No. 131.
12. Bids will be evaluated based on, in order of priority: (1) cost; (2) quality of the product proposed and conformity with specifications; and (3) warranty and maintenance resources, capability, and capacity.
13. All bid pricing should be delivered pricing, F.O.B. Nampa, Idaho.
14. Bid pricing is to be held firm for one (1) year from the date of bid opening.
15. At the discretion of the District, the project may be wholly or in part contingent upon successful E-Rate funding.
16. Questions regarding this bid must be submitted and received by Nampa School District NO LATER THAN Monday, February 15, 2016. Questions received after this date will not be addressed. Questions and the respective answers will be publicly posted on the District website at www.nsd131.org/District under the menu listing Purchasing/Bids. Questions submitted in writing may be mailed to:

Scott Jacobsen
Budget/Purchasing Supervisor
619 S. Canyon Street
Nampa, ID 83686

Alternatively, questions may be submitted via email to:

bids@nsd131.org

All inquiries should be clearly marked as pertaining to this bid, either on the envelope/container or in the subject line.

17. Bids will be jointly evaluated by the Technology and Finance departments and a recommendation for the award of the contract will be made to the Board of Trustees. Notification of the award will be made subsequent to formal approval by the Board.

Nampa School District Data Cable Plant Specification

Specification for the implementation of voice and data
network cable plants in the Nampa School District

Revision 3, January 22, 2016

Technical Specification

PART 1 – GENERAL SPECIFICATIONS

1.1 SCOPE

- A. This document describes the products and execution requirements relating to furnishing and installing Telecommunications Cabling at any new or remodeled building. Vertical and horizontal backbone cabling comprised of copper and fiber cabling and support systems are covered under this document.
- B. The Horizontal (workstation) cabling system shall consist of a minimum of (2) 4-pair Unshielded Twisted Pair (UTP) copper cables to each work area outlet unless otherwise noted for specific locations. The cables shall 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.
- C. All cables and related terminations, support and grounding hardware shall be furnished, installed, wired, tested, labeled, and documented by the Telecommunications contractor as detailed in this document.
- D. Product 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 shall take precedence. The successful vendor shall meet or exceed all requirements for the cable system described in this document.

1.2 REGULATORY REFERENCES:

- A. All work and materials shall conform in every detail to the rules and requirements of the National Fire Protection Association, the local Electrical Code and present manufacturing standards.
- B. All materials shall be UL listed and shall be marked as such. If UL has no published standards for a particular item, then other national independent testing standards shall apply and such items shall bear those labels. Where UL has an applicable system listing and label, the entire system shall be so labeled.
- C. All materials shall be ETL Verified (not just tested) to be category 5e component and channel compliant or better.
- D. The cabling system described in this document is derived from the recommendations made in recognized telecommunications industry standards. The TIA/EIA-568-C family of cabling standards are incorporated by reference:
 - a. ANSI/TIA/EIA-568-C.0 – Generic Telecommunications Cabling for Customer Premises
 - b. ANSI/TIA/EIA-568-C.1 – Commercial Building Telecommunications Cabling Standard
 - c. ANSI/TIA/EIA-568-C.2 – Twisted-Pair Telecommunication Cabling Components Standard
 - d. ANSI/TIA/EIA-568-C.3 – Optical Fiber Cabling Components Standard
 - e. ANSI/TIA/EIA-568-C.4 – Broadband Coaxial Cabling and Components Standard

1.3 APPROVED CONTRACTOR

- A. The Telecommunications contractor must be an approved Ortronics Certified Installer at a Plus tier (CIP, CIP-GOLD, CIP-PLATINUM), a multi-site national contractor, and a Berk-Tek Certified OASIS Integrator. A copy of certification documents must be submitted with the quote in order for such quote to be valid. The Telecommunications contractor is responsible for workmanship and installation practices in accordance with the Ortronics CI/CIP Program and the Berk-Tek OASIS Program (See addendum “Berk-Tek Oasis Program” at the end of this document). At least 30 percent of the copper installation and termination crew must be certified by BICSI, Berk-Tek, and Ortronics, with a Technicians Level of training. Also, at least 10 percent of the optical fiber installation and termination crew must be LANscape certified (or equivalent) by Corning in Optical Fiber installation and termination practices.

1.4 APPROVED PRODUCTS

- A. Approved 4 pair UTP Cable: Berk-Tek Lanmark 350 Enhanced Category 5e Plenum Cable.
- B. Approved high pair count UTP Cable manufacturer: Berk-Tek
- C. Approved fiber optic cable manufacture: Corning
- D. Approved UTP connector product manufacturer: Ortronics
- E. Approved Fiber Optic cabinet product manufacturer: Ortronics
- F. Approved Fiber Optic connectors/splices/couplers: Ortronics
- G. Approved Rack and Cabinet manufacturer: Ortronics
- H. Approved Patch Panel manufacturer: Ortronics

1.5 WORK INCLUDED

- 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.
- B. The work shall include, but not be limited to the following:
 - 1. Furnish and install a complete telecommunications wiring infrastructure.
 - 2. Furnish, install, and terminate all UTP and Optical Fiber cable.
 - 3. Furnish and install all wall plates, jacks, patch panels, and patch cords.
 - 4. Furnish and install all required cabinets and/or racks as required and as indicated.
 - 5. Furnish any other material required to form a complete system.
 - 6. Perform link or channel testing (100% of horizontal and/or backbone links/channels) and certification of all components.
 - 7. Furnish test results of all cabling to the owner in both electronic and paper format, listed by each closet, then by cable ID.
 - 8. Adhere and comply with all requirements of Ortronics CI/CJP and/or Berk-Tek OASIS programs.
 - 9. Conduct a walk-through with owner and provide "As-Built" drawings and documentation.

1.6 SUBMITTALS

- A. Under the provisions of this request for proposal, prior to the start of work, the telecommunication contractor shall:
 - 1. 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.
 - 2. Submit proof from manufacturer of contractor's good standing in manufacturer's program.
 - 3. Submit appropriate cut sheets and samples for all products, hardware and cabling.
- B. Work shall not proceed without the Owner's approval of the submitted items.
- C. The Telecommunications contractor shall receive approval from the Owners on all substitutions of material. No substituted materials shall be installed except by written approval from the Owner.

1.7 QUALITY ASSURANCE

- A. The Ortronics CIP/Berk-Tek OASIS telecommunications contractor shall be a company specializing in communication cabling installation. At least 30 percent of the copper installation and termination crew must be certified by BICSI, Berk-Tek and Ortronics with a Technicians Level of Training. At least 10 percent of the optical fiber installation and termination crew must be certified by BICSI and Corning in optical fiber installation and termination practices.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Delivery and receipt of products shall be at the site described in the Scope Section.
- B. Cable shall 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 temperature at cable storage location will be below 40 degrees F., the cable shall be moved to a heated (50 degrees F. minimum) location. If necessary, cable shall be stored off site at the contractor's expense.
- C. If the telecommunications contractor wishes to have a trailer on site for storage of materials, arrangements shall be made with the Owner.

1.9 DRAWINGS

- A. It shall 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 on the job. The telecommunications contractor shall make allowance in the bid proposal to cover whatever work is required to comply with the intent of the plans and specifications.
- B. The telecommunications contractor shall verify all dimensions at the site and be responsible for their accuracy.
- C. Prior to submitting the bid, the telecommunications contractor shall 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.

PART 2- PRODUCTS

2.1 EQUIVALENT PRODUCTS

- A. Due to the nature and type of communications all products, including but not limited to faceplates, jacks, patch panels, fiber optic connectors, racks, 110 blocks, and patch cords, for the purpose of this document, shall be manufactured by Ortronics. All copper cable products shall be manufactured by Berk-Tek. All fiber optic products shall be manufactured by Corning. There will be no substitutions allowed.

2.2 WORK AREA OUTLETS

- A. Work area cables shall each be terminated at their designated work area location in the connector types described in the subsection below. Included are modular telecommunication jacks. These connector assemblies shall snap into a faceplate.
- B. The Telecommunications Outlet Assembly shall accommodate:
 - 1. A minimum of two (2) modular jacks.
 - 2. Additional accommodations for specific locations as noted in the plans for optical fiber and/or additional copper cables as necessary.
 - 3. A blank filler will be installed when extra ports are not used.
 - 4. A dust cap shall be provided on all modular jacks with the circuit number on the identifier strip.
 - 5. 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 shall be responsible for determining the optimum compliant configuration based on the products proposed.
 - 6. The same orientation and positioning of jacks and connectors shall be utilized throughout the installation. Prior to installation, the telecommunications contractor shall submit the proposed configuration for each outlet assembly for review by the Owner.

7. The modular jack shall incorporate printed label strip on the dust cap module for identifying the outlet. Printed labels shall be permanent and compliant with ANSI/TIA/EIA-606-A standard specifications. Labels shall be printed using Ortronics label program (Label-Mo) or using a printer such as a Brady hand held printer. Hand printed labels shall not be accepted.

C. Faceplates: The faceplates shall:

1. be Ortronics TracJack or Series II style as appropriate to fit the modular jack used.
2. be UL listed and CSA certified.
3. be constructed of high impact, ABS plastic UL 94V-0 construction (except where noted otherwise).
4. match the faceplate color used for other utilities in the building or match the color of the raceway if installed in surface raceway.
5. be compliant with the above requirements along with the following when incorporating optical fiber:
 - i. Be a low profile assembly.
 - ii. Incorporate a mechanism for storage of cable and fiber slack needed for termination.
 - iii. Position the fiber optic couplings to face downward or at a downward angle to prevent contamination.
 - iv. Incorporate a shroud that protects the optical couplings from impact damage.
6. be available as single-gang or dual-gang.
7. provide easy access for adds, moves, and changes by front removal of jack modules.
8. possess recessed designation windows to facilitate labeling and identification.
9. shall include a clear plastic cover to protect labels in the designation window.
10. have mounting screws located under recessed designation windows.
11. comply with ANSI/TIA/EIA 606-A work area labeling standard.
12. allow for the UTP modules to be inverted in place for termination purposes.
13. be manufactured by an ISO 9001 registered company.

D. Voice/Data Jacks

1. Voice/Data Jacks shall be 8-position modular jacks and shall be Category 5e or higher performance as defined by the references in this document including ANSI/TIA/EIA 568-B.2. All pair combinations must be considered, with worst case measurement being the basis for compliance. Modular jack performance shall be third-party verified by a nationally recognized independent testing laboratory.
2. The modular jack shall be one of the following:

Part Number	Description
OR-TJ5E00-43	Clarity 5E TracJack Orange
OR-TJ5E00-99	Clarity 5E TracJack Fog White

3. Dust covers shall be used on each termination.

2.3 110 COPPER TERMINATION BLOCK

The voice cross connect shall be a passive connection between the horizontal termination blocks and the backbone termination blocks. The wall mount frames shall be field terminated kits including all blocks, connecting blocks, and designation strips. Management rings shall be mounted between vertical columns of blocks to provide management of cross-connect wire. Backbone and horizontal blocks shall use 4 or 5-pair connecting blocks on each 25-pair row. Blocks shall be oriented so that backbone terminations are located on the left and horizontal frames are located on the right of the termination field when facing the frame assembly.

A. 110 Connecting Blocks shall:

1. be manufactured using fire retardant molded plastic.
2. be used with 4 pair 110C connecting blocks for field termination.
3. support termination of 22, 24, and 26 AWG solid conductor.
4. be capable of accommodating a minimum of 200 repeated insertions without resulting in permanent deformation.
5. have color-coded tips for installation identification.

6. Termination hardware shall maintain the paired construction of the cable to facilitate minimum untwisting of the wires.
7. be labeled in compliance with ANSI/TIA/EIA 606-A labeling specifications using permanent labels and Label/Mo software (or other labeling software/printer).
8. be manufactured by an ISO 9001 registered company.

B. 110 Wiring Blocks Shall:

1. be Ortronics part number OR-30203506.
2. be manufactured using fire retardant molded plastic.
3. be available in 100 pair and 300 pair sizes.
4. be rack mountable.
5. be used with 4 pair 110C connecting blocks for field termination.
6. support termination of 22, 24, and 26 AWG solid conductor.
7. be capable of accommodating a minimum of 200 repeated insertions without resulting in permanent deformation.
8. 110 wiring block and 110C connecting block shall have color-coded tips for installation identification.
9. Termination hardware shall maintain the paired construction of the cable to facilitate minimum untwisting of the wires.
10. 110 wiring block and 110C connecting block shall be compliant with ANSI/TIA/EIA 606-A labeling specifications.
11. be manufactured by an ISO 9001 registered company.

C. 110 Cross-Connect System Backboard Channels shall:

1. be available in 300 and 900 pair sizes.
2. allow the mounting of 110 100-pair blocks without legs.
3. include bottom trough and grounding bar.
4. be wall mountable.
5. be of cold roll steel construction.
6. be manufactured by an ISO 9001 registered company.

D. Wall Mount Vertical Trough Shall:

1. be available in single channel or dual channel configurations.
2. in dual channel configuration, be used to provide separation for different wiring media.
3. be available in 300 pair or 900 pair sizes.
4. be wall mountable.
5. be used with wall mountable backboard channels. Acceptable configurations include a 300 pair and a 900 pair.
6. Be of cold roll steel construction.
7. Be manufactured by an ISO 9001 registered company.

2.4 MODULAR PATCH PANELS

A. The modular patch panels shall be one of the following:

Part Number	Description
OR-PHD5E6U24	Clarity 5E Cat5e 24-Port Patch Panel
OR-PHD5E6U48	Clarity 5E Cat5e 48-Port Patch Panel

2.5 RACKS

All racks and wire management shall be Ortronics specific. The equipment rack shall 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. Waterfall cable management shall be provided at the top of the rack for patch cords and for horizontal cables entering the rack channels for protection and to maintain proper bend radius and cable support. Wire management shall also be mounted above each patch panel and/or piece of equipment on the rack. The rack shall include mounting brackets for cable tray ladder rack to mount to the top of the rack. Velcro cable ties shall be provided inside the rack channels to support the horizontal cable. Rack shall be black in color to match the patch panels and cable management.

A. A Free-Standing Rack Shall:

1. provide the necessary strain relief, bend radius and cable routing for proper installation of high performance cross-connect products meeting all specifications of ANSI/TIA/EIA 568-B
2. have a top cable trough with waterfall and build-in patch and horizontal cable distribution separator.
3. have EIA hole pattern on front and rear.
4. be available with 6.5" (165 mm) channel depth.
5. be available with hook and loop straps for securing bulk cables inside vertical U-channels.
6. assemble as a 19" (483 mm) rack with no additional hardware.
7. be available with three styles of vertical patch cord management
 - i. Interbay with latches
 - ii. Cable management rings
 - iii. Finger duct with covers
8. provide floor and ceiling access for cable management and distribution.
9. provide pre-drilled base for floor attachment of rack.
10. be available in standard color of black.
11. be manufactured by an ISO 9001 registered company

B. A Wall Mount Rack Shall:

1. provide the necessary strain relief, bend radius and cable routing for proper installation of high performance cross connect products, meeting all specifications of ANSI/TIA/EIA-568-B.
2. have top cable trough to route patch and distribution cables between racks.
3. have EIA hole pattern on front and rear.
4. be specified as 4.0 ft (1.22 m) with 22 rack units).
5. be available with a 6.5" (165 mm) or 14" (356 mm) channel depth.
6. be available with hook and loop straps for securing cables inside the vertical U-channels.
7. be available with vertical cable management rings for cord routing, organization and strain relief.
8. be available with vertical U-channels to protect and conceal distribution cables.
9. provide floor and ceiling access for cable management and distribution.
10. have wall mount braces With locator posts for easy wall mounting.
11. have side access points that allow for access to manage/install distribution cables in the vertical channels.
12. be available in standard color of black.
13. be manufactured by an ISO 9001 registered company.

2.6 HORIZONTAL DISTRIBUTION CABLE

All horizontal data station cable and voice cable shall terminate on modular patch panels (copper or fiber), 110 cross-connecting blocks (copper), or patch/splice cabinets (fiber) in their respective Telecommunications Room or Equipment Room as specified on the drawings.

A. 100 Ohm Enhanced Category 5e Unshielded Twisted Pair (UTP) Cable

1. Physical Characteristics:
 - i. (For Plenum) Shall be plenum rated and meet applicable requirements of ANSI/ICEA S-80-576. All 4 pairs must be insulated with F.E.P. No 2x2 or 3x1 construction will be allowed.
 - ii. The diameter of the insulated conductor shall be .020 in nominal.
 - iii. Shall consist of (4) 24 AWG twisted pairs.
 - iv. Shall be suitable for the environment in which they are to be installed.
 - v. The color coding of pairs shall be:

Pair 1	Pair 2	Pair 3	Pair 4
W-BL; BL	W-O; O	W-G; G	W-BR; BR

- vi. The overall diameter of the cable shall be 0.165 inches.
- vii. The ultimate breaking strength measured in accordance with ASTM D 4565 shall be 400 N maximum,
- viii. The cable shall withstand a bend radius of 2 inches at -20 degrees Celsius without jacket or insulation cracking.

- ix. Cable shall be third party verified to meet ANSI/TIA/EIA – 568-B1, Category 5e Specifications
- x. Plenum rated cable shall be UL certified to conform to UL 910, CMP and shall be marked as such.
- xi. Riser rated cable shall be third party certified to conform to UL 1666, CMR, CMG, and IEC 332-1 and shall be marked as such.

2. Transmission Characteristics

- i. DC resistance of any conductor shall not exceed 9.4 ohms per 100m maximum at 20 degrees Celsius measured in accordance with ASTM D 4566.
- ii. The mutual capacitance of any pair at 1 kHz for 100m of cable shall not exceed 4.4 nF.
- iii. The capacitance unbalance to ground at 1kHz of any pair shall not exceed 330 pF per 100m,
- iv. Structural return loss swept measurement for 100m or longer shall meet or exceed the following:

Frequency (MHz)	1.0	4.0	10.0	16.0	20.0	31.25	62.5	100	155	200	300	350
Max. SRL(dB)	25.5	25.5	25.5	25.5	25.5	24.4	22.7	21.5	20.4	19.8	18.8	18.4

- v. The maximum attenuation of any pair shall be less than the following:

Frequency (MHz)	1.0	4.0	10.0	16.0	20.0	31.25	62.5	100	155	200	300	350
Max. Attenuation (dB)	2.0	4.0	6.4	8.1	9.2	11.6	16.8	21.7	27.7	32.1	40.5	44.4

- vi. The NEXT coupling loss between pairs shall be greater than or equal to the following:

Frequency (mHz)	1.0	4.0	10.0	16.0	20.0	31.25	62.5	100	155	200	300	350
NEXT Loss Worst Pair (dB)	70.3	61.9	55.3	52.3	50.8	47.9	45.4	40.3	37.5	35.8	33.2	32.2

- vii. The PSNEXT loss at 20 degrees Celsius \pm 3 degrees (68 degrees F \pm 5.5 degrees) between pairs in a cable for a length of 100m (328 ft) shall meet or exceed the following:

Frequency (mHz)	1.0	4.0	10.0	16.0	20.0	31.25	62.5	100	155	200	300	350
PSNEXT Loss Worst Pair (dB)	68.3	59.9	53.3	50.3	48.8	45.9	41.4	38.3	35.5	33.8	31.2	30.2

- viii. The ELFEXT loss at 20 degrees Celsius \pm 3 degrees (68 degrees F \pm 5.5 degrees) between pairs in a cable for a length of 100m (328 ft) shall meet or exceed the following:

Frequency (mHz)	1.0	4.0	10.0	16.0	20.0	31.25	62.5	100	155	200
ELFEXT Loss Worst Pair (dB)	66.8	54.7	46.8	42.7	40.7	36.9	30.8	26.8	23.0	20.7

- ix. The PSELFEXT loss at 20 degrees Celsius \pm 3 degrees (68 degrees F \pm 5.5 degrees) between pairs in a cable for a length of 100m (328 ft) shall meet or exceed the following:

Frequency (mHz)	1.0	4.0	10.0	16.0	20.0	31.25	62.5	100	155	200
PSELFEXT Loss Worst Pair (dB)	63.8	52.7	44.8	40.7	38.7	34.9	28.8	24.8	20.0	17.7

- x. The return loss at 20 degrees Celsius \pm 3 degrees (68 degrees F \pm 5.5 degrees) between pairs in a cable for a length of 100m (328 ft) shall meet or exceed the following:

Frequency (mHz)	1.0	4.0	10.0	16.0	20.0	31.25	62.5	100	155	200	300	350
Return Loss Worst Pair (dB)	20.0	23.3	25.5	25.5	25.5	24.4	22.7	21.5	20.4	19.8	18.8	18.4

3. Design Make

- i. Berk-Tek LANMark 350, Enhanced Category 5e (CMP Plenum-PVC Alloy)

Color	Box	Reel
Blue	10032065	10032064

- ii. Berk-Tek LANMark 350, Enhanced Category 5e (CMR Riser-PVC)

Color	Box	Reel
Blue	10032426	10032425

2.7 BACKBONE CABLE

A. Indoor/Outdoor Optical Fiber Non-Conductive Plenum (OFNP) loose tube with 10Gb laser optimized 50/125 optical fibers.

1. Each multimode fiber shall be:
 - a. Graded-index optical fiber wave-guide with nominal OM3 50/125 μ m-core/cladding diameter.
 - b. The fiber shall comply with the latest revision of ANSI/EIA/TIA-492000.
 - c. Attenuation shall be measured in accordance with ANSI/EIA/TIA-455-46, 53, or 61.
 - d. Information transmission capacity shall be measured in accordance with the latest revision of ANSI/EIA/TIA-455 – 204.
 - e. The measurements shall be performed at 23 degrees Celsius +/- 5 degrees.
 - f. Maximum attenuation dB/Km @ 850/1300nm: 3.5/1.5
 - g. Bandwidth: >1500MHz-km @ 850nm for overfilled launch.
 - h. Bandwidth 500MHz-km @ 1300nm.
 - i. Bandwidth 2000MHz-km characterized using FOTP 220
 - j. Optical fiber shall be laser optimized and guaranteed for 10Gb Ethernet distances of 300m/300m for 850nm and 1300nm respectively.
 - k. Optical fiber shall be laser optimized and guaranteed for 1Gb Ethernet distances of 1000m/550m for 850nm and 1300nm respectively.
2. Physical Characteristics
 - a. Shall be suitable for use in both outdoor and indoor applications without the use of a transition at the building entrance.
 - b. Shall be suitable for use in risers, plenums, and horizontal applications.
 - c. Shall have a dry water blocking system for cable core and buffer tubes.
 - d. Shall be available with a fiber strand count range from 6 to 144.
 - e. Shall have a 3.0 nm sub unit diameter.
 - f. Shall have and be marked with a UL-OFNP and OFN FT6 flame rating.

- g. Shall comply with the requirements of ICEA S-83-596 and ANSI/ICEA S-87-640.
- h. Strength members shall be dielectric and may be either fiberglass or aramid yarn.
- i. Suitable for underground or above-ground conduits.
- j. Loose tube fibers shall be color coded in accordance with EIA/TIA 598.
- k. Suitable for operation between -40 to +75 C.
- l. Shall be UV resistant.
- m. Shall be of an all dielectric design.
- n. Shall have a maximum installation tension of 300 lbs for cables without dielectric strength member, and 600 lbs for cables with dielectric strength members.

3. Design Make

- a. Corning Part Number: 012TUF-T4180DA1 – FREEDM Loose Tube Interlocking Armored Cable.

2.8 COPPER CABLE PROTECTION UNITS

- A. All copper circuits shall be provided with protection between each building with an entrance cable protector panel. All building-to-building circuits shall be routed through this protector. The protector shall be connected with a #6 AWG copper bonding conductor between the protector ground lug and the TR ground point. Approved manufacturer of protection units is Porta Systems.

2.9 GROUNDING AND BONDING

- A. The facility shall be equipped with a Telecommunications Bonding Backbone (TBB). This backbone shall 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 shall be installed independent of the building's electrical and building ground and shall be designed in accordance with the recommendations contained in the ANSI/TIA/EIA-607 Telecommunications Bonding and Grounding Standard.
- B. The main entrance facility/equipment room in each building shall be equipped with a telecommunications main grounding bus bar (TMGB). Each telecommunications room shall be provided with a telecommunications ground bus bar (TGB). The TMGB shall 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.
- C. All racks, metallic backboards, cable sheaths, metallic strength members, splice cases, cable trays, etc. entering or residing in the TR or ER shall be grounded to the respective TGB or TMGB using a minimum #6 AWG stranded copper bonding conductor and compression connectors.
- D. All wires used for telecommunications grounding purposes shall be identified with a green insulation. Non-insulated wires shall be identified at each termination point with a wrap of green tape. All cables and bus bars shall be identified and labeled in accordance with the System Documentation Section of this specification.

2.10 FIRESTOP

- 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.
- B. All penetrations through fire-rated building structures (walls and floors) shall 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. shall be properly fire-stopped.

- C. Firestop systems shall be UL Classified to ASTM E814 (UL 1479) and shall 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 or embossed by the PE shall be provided to the Owner's Technical Representative prior to installing the firestop system(s).

Part 3 – Execution

3.1 WORK AREA OUTLETS

- A. Cables shall 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 12" of UTP slack shall be stored in an in-wall box, modular furniture raceway, or insulated walls. Excess slack shall 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.
- B. Cables shall be dressed and terminated in accordance with the recommendations made in the ANSI/TIA/EIA-568-B.1 document, manufacturer's recommendations and best industry practices.
- C. Pair untwist at the termination shall not exceed 12 mm (one-half inch).
- D. Bend radius of the horizontal cable shall not be less than 4 times the outside diameter of the cable.
- E. The cable jacket shall be maintained to within 25mm (one inch) of the termination point.
- F. Data jacks, unless otherwise noted in drawings, shall be located in the bottom position(s) of each faceplate. Data jacks in horizontally oriented faceplates shall occupy the right-most position(s).
- G. Voice jacks shall occupy the top position(s) on the faceplate. Voice Jacks in horizontally oriented faceplates shall occupy the left-most position(s).

3.2 HORIZONTAL DISTRIBUTION CABLE INSTALLATION

- A. Cable shall be installed in accordance with manufacturer's recommendations and best industry practices.
- B. A pull cord (nylon; 1/8" minimum) shall be co-installed with all cable installed in any conduit.
- C. Cable raceways shall not be filled greater than the TIA/EIA-569-A maximum fill for the particular raceway type or 40%.
- D. Cables shall be installed in continuous lengths from origin to destination (no splices).
- E. The cable's minimum bend radius and maximum pulling tension shall not be exceeded.
- F. If a J-hook or trapeze system is used to support cable bundles all horizontal cables shall be supported at a maximum of 48 to 60 inch {1.2 to 1.5 meter) intervals. At no point shall cable(s) rest on acoustic ceiling grids or panels.
- G. Horizontal distribution cables shall 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.
- H. Cable shall be installed above fire-sprinkler systems and shall not be attached to the system or any ancillary equipment or hardware. The cable system and support hardware shall be installed so that it does not obscure any valves, fire alarm conduit, boxes, or other control devices.

- I. Cables shall not be attached to ceiling grid or lighting fixture wires. Where support for horizontal cable is required, the contractor shall install appropriate carriers to support the cabling.
- J. Any cable damaged or exceeding recommended installation parameters during installation shall be replaced by the contractor prior to final acceptance at no cost to the Owner.
- K. Cables shall be identified by a self-adhesive label in accordance with the System Documentation Section of this specification and ANSI/TIA/EIA-606. The cable label shall be applied to the cable behind the faceplate on a section of cable that can be accessed by removing the cover plate.
- L. Unshielded twisted pair cable shall be installed so that there are no bends smaller than four times the cable outside diameter at any point in the run and at the termination field.
- M. Pulling tension on 4-pair UTP cables shall not exceed 25-lbf for a four-pair UTP cable.

3.3 HORIZONTAL CROSS CONNECT INSTALLATION

- A. Cables shall be dressed and terminated in accordance with the recommendations made in the TIA/EIA-568-B standard, manufacturer's recommendations and best industry practices.
- B. Pair untwist at the termination shall not exceed 13 mm (0.5 inch).
- C. Bend radius of the cable in the termination area shall not exceed 4 times the outside diameter of the cable.
- D. Cables shall be neatly bundled and dressed to their respective panels or blocks. Each panel or block shall be fed by an individual bundle separated and dressed back to the point of cable entrance into the rack or frame.
- E. The cable jacket shall be maintained as close as possible to the termination point.
- F. Each cable shall 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 shall not be acceptable.

3.4 BACKBONE CABLE INSTALLATION

- A. Backbone cables shall be installed separately from horizontal distribution cables.
- B. A pull cord (nylon; 1/8" minimum) shall be co-installed with all cable installed in any conduit.
- C. Where cables are housed in conduits, the backbone and horizontal cables shall be installed in separate conduits.
- D. Where backbone cables are installed in an air return plenum, riser rated cable shall be installed in metallic conduit.
- E. Where backbone cables and distribution cables are installed in a cable tray or wire raceway, backbone cables shall be installed first and bundled separately from the horizontal distribution cables.
- F. All backbone cables shall be securely fastened to the side wall of the TR on each floor.
- G. Backbone cables spanning more than three floors shall 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.
- H. Vertical runs of cable shall be supported to messenger strand, cable ladder, or other method to provide proper support for the weight of the cable.

- I. Large bundles of cables and/or heavy cables shall be attached using metal clamps and/or metal banding to support the cables.

3.5 COPPER TERMINATION HARDWARE

- A. Cables shall be dressed and terminated in accordance with the recommendations made in the ANSI/TIA/EIA-568-B standard, manufacturer's recommendations and best industry practice.
- B. Pair untwist at the termination shall not exceed 12 mm (one-half inch).
- C. Bend radius of the cable in the termination area shall not exceed 4 times the outside diameter of the cable.
- D. Cables shall be neatly bundled and dressed to their respective panels or blocks. Each panel or block shall be fed by an individual bundle separated and dressed back to the point of cable entrance into the rack or frame.
- E. The cable jacket shall be maintained to within 25 mm (one inch) of the termination point.
- F. Each cable shall 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 shall not be acceptable.

3.6 OPTICAL FIBER TERMINATION HARDWARE

- A. Fiber slack shall be neatly coiled within the fiber splice tray or enclosure. No slack loops shall be allowed external to the fiber panel.
- B. Each cable shall be individually attached to the respective splice enclosure by mechanical means. The cable's strength member shall be securely attached to the cable strain relief bracket in the enclosure.
- C. Each fiber bundle shall be stripped upon entering the splice tray and the individual fibers routed in the splice tray.
- D. Each cable shall be clearly labeled at the entrance to the splice enclosure. Cables labeled within the bundle shall not be acceptable.
- E. A maximum of 12 strands of fiber shall be spliced in each tray.
- F. All spare strands shall be installed into spare splice trays.

3.7 RACKS

- A. Racks shall be securely attached to the concrete floor using a minimum 3/8" hardware or as required by local codes.
- B. Racks shall be placed with a minimum of 36 inch clearance from the walls on all sides of the rack. When mounted in a row, maintain a minimum of 36 inches from the wall behind and in front of the row of racks and from the wall at each end of the row.
- C. All racks shall be grounded to the telecommunications ground bus bar in accordance with Section 9.0 of this document.
- D. Rack mount screws not used for installing patch panels and other hardware shall be bagged and left with the rack upon completion of the installation.

- E. Wall mounted termination block fields shall be mounted on 4' x 8' x .75" void free plywood. The plywood shall be mounted vertically 12" above the finished floor. The plywood shall be painted with two coats of white fire retardant paint.
- F. Wall mounted termination block fields shall be installed with the lowest edge of the mounting frame 18" from the finished floor.

3.8 FIRESTOP SYSTEM

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

3.9 GROUNDING SYSTEM

- A. The TBB shall be designed and/or approved by a qualified PE, licensed in the state that the work is to be performed. The TBB shall adhere to the recommendations of the TIA/EIA-607 standard, and shall be installed in accordance with industry best practices.
- B. Installation and termination of the main bonding conductor to the building service entrance ground shall be performed by a licensed electrical contractor.

3.10 IDENTIFICATION AND LABELING

- A. The contractor shall develop and submit for approval a labeling system for the cable installation. The Owner will negotiate an appropriate labeling scheme with the successful contractor. At a minimum, the labeling system shall clearly identify all components of the system: racks, cables, panels and outlets and follow the guidelines set forth in TIA/EIA-606-A. The labeling system shall designate the cables origin and destination and a unique identifier for the cable within the system. Racks and patch panels shall be labeled to identify the location within the cable system infrastructure. All labeling information shall be recorded on the as-built drawings and all test documents shall reflect the appropriate labeling scheme.
- B. All label printing will be machine generated by Ortronics Label/Mo software using indelible ink ribbons or cartridges. Self-laminating labels will be used on cable jackets, appropriately sized to the OD of the cable, and placed within view at the termination point on each end. Outlet, patch panel, and wiring block labels shall be installed on, or in, the space provided on the device.

3.11 TESTING AND ACCEPTANCE

- A. General
 1. All cables and termination hardware shall 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 (B.1, B.2, B.3) and Ortronics Certification Program Information Manual. All pairs of each installed cable shall 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 shall be repaired or replaced in order to ensure 100% useable conductors in all cables installed.
 2. All cables shall be tested in accordance with this document, the ANSI/TIA/EIA standards, the Ortronics Certification Program Information Manual, and industry best practices. If any of these are in conflict, the Contractor shall bring any discrepancies to the attention of the project team for clarification and resolution.

B. Copper Channel Testing

1. All twisted-pair copper cable links shall be tested for continuity, pair reversals, shorts, opens and performance as indicated below. Additional testing is required to verify Category performance. Horizontal cabling shall be tested using a level IIE or better test unit for category 5e compliance.
2. Continuity- Each pair of each installed cable shall be tested using a test unit that shows opens, shorts, polarity and pair-reversals, crossed pairs and split pairs. Shielded/screened cables shall be tested with a device that verifies shield continuity in addition to the above stated tests. The test shall be recorded as pass/fail as indicated by the test unit in accordance with the manufacturers' recommended procedures, and referenced to the appropriate cable identification number and circuit or pair number. Any faults in the wiring shall be corrected and the cable re-tested prior to final acceptance.
3. Length- Each installed cable link shall be tested for installed length using a TDR type device. The cables shall be tested from patch panel to patch panel, block to block, patch panel to outlet or block to outlet as appropriate. The cable length shall conform to the maximum distances set forth in the ANSI/TIA/EIA-568-B Standard. Cable lengths shall be recorded, referencing the cable identification number and circuit or pair number. For multi-pair cables, the shortest pair length shall be recorded at the length for the cable.
4. Category 5e performance – A Level IIE or better test unit is required to verify Category 5e performance. The basic tests required are:
 - i. Wire Map
 - ii. Length
 - iii. Attenuation
 - iv. NEXT (Near end Crosstalk)
 - v. Return Loss
 - vi. ELFEXT Loss (Equal Level Far-end Crosstalk Loss)
 - vii. Propagation Delay
 - viii. Delay Skew
 - ix. PSNEXT (Power Sum Near end Crosstalk)
 - x. PSELFEXT (Power Sum Equal Level Far-end Crosstalk Loss)

C. Fiber Testing

1. All fiber testing shall be performed on all fibers in the completed end-to-end system. There shall be no splices unless clearly identified in an RFP. Testing shall consist of an end-to-end power meter test, performed per EIA/TIA-455-53A. The system loss measurements shall be provided at 850 and/or 1300 nanometers for multimode fibers and 1310 and/or 1550 nanometers for single mode fibers. These tests shall also include continuity checking of each fiber.
2. Backbone multimode fiber cabling shall be tested at both 850 and 1300 nm (1310 and 1550 nm for single mode) in one direction.
3. Test setup and performance shall be conducted in accordance with ANSI/EIA/TIA-526-14 Standard, method B.
4. Where links are combined to complete a circuit between devices, the contractor shall test each link from end to end to ensure the performance of the system. The test method shall be the same used for the test described above. The values for calculating loss shall be those defined in the ANSI/EIA/TIA Standard.
5. Attenuation testing shall be performed with a stable launch condition using two-meter jumpers to attach the test equipment to the cable plant. The light source shall be left in place after calibration and the power meter moved to the far end to take measurements.

3.12 SYSTEM DOCUMENTATION

- A. Upon completion of the installation, the telecommunications contractor shall provide three (3) full documentation sets to the Engineer for approval. Documentation shall include the items detailed in the sub-sections below.
- B. Documentation shall 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 result and draft as-built drawings. Draft drawings may include annotations done by hand. Machine generated (final) copies of all drawings shall be submitted within 30 working days of the

completion of each testing phase. At the request of the engineer the telecommunications contractor shall provide copies of the original test results.

- 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 shall 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 shall be at no additional cost to the Owner.

3.13 TEST RESULTS

- A. Test documentation shall be provided on disk within three weeks after the completion of the project. The disk shall 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 shall 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 shall 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.
- B. The field test equipment shall meet the requirements of ANSI/TIA/EIA-568-B including applicable TSB's and amendments. The appropriate level IIE tester shall be used to verify Category 5e cabling systems.
- C. Printouts generated for each cable by the wire test instrument shall be submitted as part of the documentation package. The telecommunications contractor must furnish this information in electronic form on CD-ROM media.
- D. When repairs and re-tests are performed, the problem found and corrective action taken shall be noted, and both the failed and passed test data shall be documented.

3.14 AS-BUILT DRAWINGS

- A. The drawings are to include cable routes and outlet locations. Outlet locations shall be identified by their sequential number as defined elsewhere in this document. Numbering, icons, and drawing conventions used shall be consistent throughout all documentation provided. These documents will be modified accordingly by the telecommunications contractor to denote as-built information as defined above and returned to the Owner.
- B. The Contractors shall annotate the base drawings and return a hard copy (same plot size as originals) and electronic form.

PART 4 - WARRANTY AND SERVICES

4.1 WARRANTY

- A. The contractor shall provide a 90 Day warranty on the physical installation.

4.2 CONTINUING MAINTENANCE

- A. The contractor shall furnish an hourly rate with the proposal submittal, which shall be valid for a period of one year from the date of acceptance. This rate will be used when cabling support is required to affect moves, adds, and changes to the system (MACs).

4.3 FINAL ACCEPTANCE & SYSTEM CERTIFICATION

- A. Completion of the installation, in-progress and final inspections, receipt of the test and as-built documentation, and successful performance of the cabling system for a two week period will constitute acceptance of the system.

ADENDUM: Berk-Tek Oasis Program

1.0 Relationship between Berk-Tek and Ortronics.

On March 4th 2013 the Presidents Paul Trunk of Berk-Tek and Mark Panico of Legrand\Ortronics announced that on May 19th of the same year the companies will end their NetClear marketing alliance. This alliance was part of the basis of Berk-Tek's Oasis program. Berk-Tek has since formed a similar alliance with Leviton, and its Oasis Program now includes Leviton's data cabling solutions.

1.1 Substitution of Part Vendors.

With regard to the Berk-Tek Oasis Program; it is at the discretion and preference of the Nampa School District that the Leviton data termination hardware specified in the program, shall be substituted with the equivalent Ortronics solutions, based on experience and previous performance.

**Nampa School District No. 131
Technology Bids January 2016 Q&A**

All questions should be submitted:

via email to bids@nsd131.org

or via mail: Nampa School District
619 S. Canyon St.
Nampa, ID 83686
Attn: Scott Jacobsen.

All questions and answers will be posted on this form in as expedient a time as possible. No answers will be provided solely to any bidder, though NSD may respond directly to inquiries to ask for clarification from a question-posing bidder.

Re: Cabling bids

2/4/2016

#1

Q: I see that you have a lot out for cabling bids but I see 1 piece on this that says 1G of internet but no other info is available on this (that I can find). I'm wondering where I can find that? Is this a new service or is this an existing service that you are looking to get a bid for? What is the address & where can I find out info on the internet access?

A: We would want a fiber optic connection terminated at 1002 Front Street Nampa, ID 83651. We currently have 2 providers providing us with 1 Gbps service for internet. One is on a 1 year contract that ends on June 30th. We would want a pool of 6 usable IP Addresses with the service.

Re: Follow up to #1

2/3/2016

#2

Q: Can I ask who current carriers are?

A: Zayo and Syringa.

Re: Follow up to #1/#2

2/3/2016

#3

Q: Are you keeping 2 providers for redundancy? I'm guessing you have a WAN to serve other schools?

A: Zayo is our wan provider. It isn't for redundancy but funding methods. K-8 schools has one funding source and 9-12 schools had another.

Re: Internet RFP/Walk through

2/4/2016

#4

Q: The 1g of internet is tucked into this Form 470 with a lot of cabling. There is an RFP for the cabling & the invitation for bid for cabling must be submitted by 2-29 & bidders must be present for walk through. The RFP doesn't appear to mention the internet at all. Is there something that I am missing or is there a separate RFP for the internet? Do bidders for the internet need to be present at walk through?

A: I would recommend following up with our e-Rate consultant, John Hughes (john@newhopetech.org). My understanding of the process is the new 470 format is causing some confusion. I hope he can clarify information need to help you with your first question.

Is there a separate RFP for the internet? No, there is not an RFP for internet. We expect the annual price will be under the annual limits for a formal bid requirement under Idaho law.

Do bidders for the internet need to be present at walk through? No, they do not.

Re: Internet bid **2/4/2016** **#5**

Q: (For John Hughes) Is the 1G of internet up for bid?

A: Yes, feel free to submit a bid.

Re: Internet transport to entities **2/4/2016** **#6**

Q: The 470 says 1Gbps at 28 entities, quantity of 1. Would be dropping off 1G at 1002 Front Street Nampa, ID 83651 & then Nampa Schools takes it from there or do we need to transport it to the 28 entities as well?

A: We will distribute the connection via our WAN from 1002 Front St. No need to worry about transport to the other entities.

Re: Internet quote clarification **2/8/2016** **#7**

Q: Before I send over my bid: I have 1G DIA, on a GE port that includes loop, at 1002 Front St, Nampa ID. 12, 24, and 36 month term pricing, and we include a (/) 29-IP Block = 5 useable.

Is that what you wanted?

A: That is correct.

Re: Hardware only bid? **2/11/2016** **#8**

Q: Will you consider a hardware only bid for just the network switch piece?

A: We do not need any installation or setup services.

Re: HP equivalent? **2/11/2016** **#9**

Q: Will you consider 1RU stackable layer 3 switches as equivalent to the HP5400 series chassis?

A: No, we want all of the connections on the same switch backplane.

Re: Clarification of Addendum 1.1 Substitution of Part Vendors **2/15/2016** **#10**

Q: In reviewing the requirements for the Network Switching Equipment Project specification entitled "Nampa School District Data Cable Plant Specification" I see that an addendum has been added at the end which allows the substitution of Leviton products for Ortronics products at the discretion of the school district. Is this substitution authorized?

If the Leviton product substitution is allowed this would then appear to negate the requirement for the Contractor to be Ortronics certified as stated in para 1.3. Is this correct?

Further the specification referenced identifies in para 1.2 sub para D that the Cabling System must meet the list of TIA/EIA family of standards 568-C. Does the school district also authorize other equivalent products meeting this family of standards to be substituted for the named products? If not is there a justification for the named products only requirement?

A: Clarification for Addendum: Berk-Tek Oasis Program – Item 1.1 underlined in Red:

1.1 Substitution of Part Vendors.

"With regard to the Berk-Tek Oasis Program; it is at the discretion and preference of the Nampa School District that the Leviton data termination hardware specified in the program, shall be substituted with the equivalent Ortronics solutions, based on experience and previous performance."

This means that the Leviton data termination hardware specified in the Berk-Tek Oasis program **shall be “substituted” or in other words, replaced by or with** Ortronics data termination hardware. The Ortronics data termination hardware is the desired product by the Nampa School District and **shall not be substituted**. Since the substitution is not allowed, the Ortronics certification requirement stands.

Justification:

The Berk-Tek Ortronics solution is the desired and preferred product by the Nampa School District. It is a high quality solution that has a proven performance record. This solution is available for resale to any telecommunications contractor, as is the required certification as stated in this specification. It is the intention of this specification to maintain the quality and uniformity of the data cable plants that exist in the Nampa School District. It is not expedient or timely for the Nampa School District to take the time to qualify and vet another solution. The products named in this specification shall stand as the required solution.

Re: Purchasing of materials? **2/15/2016** **#11**

Q: Will the district be purchasing the material or will the contractors be purchasing?

A: The vendors/contractor will be providing the materials for the RFP bids.

Re: 10G fiber connectivity/options **2/18/2016** **#12**

Q: Is 10GBase-T connectivity between switches a requirement for switch uplinks? Would Multimode and/or Single mode 10G fiber options be accepted and still meet the requirements?

A: 10GBase-T connections are required. The systems and switch gear we are connecting to these interfaces do not include fiber optic connections.

Re: Port counts/Interface speeds & types **2/18/2016** **#13**

Q: Can you provide a breakdown of port counts and interface speeds/ types required for each IDF and MDF at each school. It's unclear if all equipment will be contained within a single or multiple IDFs/MDFs

A: Switch gear specified for each building will be installed in multiple IDF's and MDF's. In most locations the new switch gear must interface with existing infrastructure. In other cases the switch gear specified (modules GBics, etc.) will be added to existing equipment. In every case the specified switch gear will either add to, or replace existing equipment.

Many of the switches that will be replaced have 10/100 port counts that range from 48 to 72 per switch (modular) with 1G uplinks. Other switches that are being replaced have 10/100/1G ports (non-modular) that are 24 or 48 ports each with 1G uplinks. In addition, we will have some additional growth capacity at each location. The speeds, port counts and interface types are in the product specifications listed in the manufacture's website, for the items listed in the RFP.

Re: NSD technical specs & requirements **2/18/2016** **#14**

Q: Are there any technical specs and/or requirements available based on NSD's implementation requirements? The only technical details we can base the proposals off currently are based on the HP vendors datasheets. Datasheets do not typically include every feature in detail.

A: Detailed specifications must include:

1. SDN and OpenFlow support.
2. HPE SmartRate Technology or equivalent.
3. Support for integration with the HPE IMC Platform.
4. Seamless integration with existing infrastructure.

In addition, the form factors of the proposed switch gear must not be such that will require major overhaul or rearranging of NSD equipment racks.

Re: Follow up to Question 9

2/18/2016 #15

Q: Will you consider a Stackable layer 3 switch that has a dedicated redundant switch backplane with redundant power supplies as long as it meets the same port counts and performance specs as the HP 5400. The switch stack would have the same dedicated backplane and redundant management modules as a HP 5400 chassis would that contains multiple independent line card modules.

A: As stated in item three (3) under General Bid Conditions and Requirements, “Any substitutions must meet or exceed the specifications of compatibility and performance of the listed part.” Also, as stated in item eight (8) under the same heading, “Bids will be evaluated based on, in order of priority: (1) integration with our existing network infrastructure; (2) cost; (3) quality of the product proposed and conformity with specifications, capability, and capacity; and (4) warranty and maintenance resources.”

As such, we will consider any bid, evaluate it, and award a contract based on the criteria stated in the RFP.

Re: Change in HP switch availability/part numbers

2/22/2016 #16

Q: HP appears to be discontinuing the sale of a number of switches and among them are two listed in your network switching equipment RFP—part numbers J9823A and J9826A. Will you approve use of the replacement items as suggested by HP?

A: Given this change in availability, we will publish the following addendum:

**Addendum to the Network Switching Equipment Bid Packet
February 19, 2016**

Part 1 – Changes in Manufacturer Part Numbers

1.1 Due to changes in manufacturer part numbers, item fifteen (15) entitled “Bid Item Listing, by Facility” shall include the following updated part numbers:

- 1.1.1 Part number J9823A shall be replaced with part number JL003A.
- 1.1.2 Part number J9826A shall be replaced with part number JL001A.

All specifications pertaining to these new part numbers shall be used as the definitive reference for all submittals.

This will also be available in its own pdf file in the Tech Bids folder.

Re: Quantity, part number confirmations

2/23/2016 #17

Q: I am putting together all of my quotes for the Erate networking but need to confirm quantities of 3800’s for Willow Creek (I think you said 2 when we spoke) and J9774A (you have quantity 16) also for Lake Ridge (J9773A you have quantity 16), for Roosevelt (J9774A you have 32). Are these quantities correct?

A: 3800’s for Willow Creek.....Quantity should be zero per the posted RFP
Willow creek J9774A (you have qty 16).....This quantity and part # are correct.
Also for Lake Ridge (J9773A you have qty 16).....This quantity and part # are correct.
For Roosevelt (J9774A you have 32).....This quantity and part # are correct.
