

# ADDENDUM 1

**BID IDENTIFIER: MCSW-ERATE-2016-01**

**BID PACKAGE TITLE: MCSWAIN UNION ELEMENTARY SCHOOL DISTRICT E-RATE YEAR 2016 REQUEST FOR PROPOSAL**

**ADDENDUM DESCRIPTION: RESPONSES TO RFP, NETWORK EQUIPMENT, AND DATA CABLING QUESTIONS**

**The vendors shall submit ALL pages of ADDENDUM 1 with the bid response**

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1. Wireless Controller

- a. Are you looking for a physical or virtual appliance?

Answer:

- i. The part number AIR-CT5520-50-K9 listed in ADDENDUM 470-NW1A-16 is a physical appliance.

- b. The max # of access points for the controller options range from 75 – 6,000. What is the max # of APs you are looking to manage?

Answer:

- i. 85

- c. Each AP requires a license to be managed. How many licenses do you require initially?

Answer:

- i. 85

2. WAPs

- a. Do you have requirements for APs?

Answer: Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

- b. Indoor or Outdoor?

Answer: Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

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**SPECIAL NOTE**

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**I HAVE READ AND UNDERSTOOD ALL PAGES OF ADDENDUM 1 OF THE ABOVE BID: \_\_\_\_\_**

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c. Data Speed?

Answer: Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

3. Switches

a. Do you require 24 or 48 ports?

Answer:

i. Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

b. For uplink ports do you require 4 x 1G or 2 x 10G uplink ports? Modular or fixed?

Answer:

i. Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

c. Do you require POE? If so do you require full POE (30W)?

Answer:

i. Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

d. Do you require LAN Base (no routing), IP Base (basic routing), or IP Services (advanced routing) capabilities?

Answer:

i. Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

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e. Do you require stacking capabilities? Modular or fixed?

Answer:

i. Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

f. Do you require redundant power supply?

Answer:

i. Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

4. UPS

a. Plug type for the UPS?

Answer:

i. Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

b. Voltage desired

Answer:

i. Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

c. Single or 3 phase UPS?

Answer:

i. Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

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d. Runtime needed?

Answer:

i. Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

e. Items to be plugged into the UPS?

i. Plug type of the items

Answer: Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

ii. Wattage draw from the items

Answer: Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

f. Extra capabilities; Can be but not limited to?

i. Web management

Answer: Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

ii. Environment sensing

Answer: Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

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iii. Visual sensing

Answer: Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

iv. Visual display

Answer: Please refer to the Wired/Wireless Network Infrastructure Equipment lists that are included with the RFP

5. Cables

a. Cable type, Connection type, length, color, PVC or plenum?

Answer:

i. Please refer to the documents that are included with the RFP

a. Fiber & Copper Cabling Specifications

b. Fiber Cabling Scope of Work

c. Copper Cabling Scope of Work

ii. Per the RFP, "Vendors who are bidding on items under the INTERNAL CONNECTIONS section are REQUIRED to attend a MANDATORY BIDDERS MEETING to discuss detailed technical specifications."

iii. The district has checked with their HVAC vendor and the vendor has stated that the area above the ceiling tiles is not being used as a plenum space. It is the responsibility of any contractor to follow all national, state and local building/fire codes.

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6. For item 470-NW1-16 do you want installation and/or configuration of the equipment or just the hardware purchase?

Answer: Just hardware purchase. Installation & configuration is NOT needed for network equipment.

7. Are there any abatement issue on the District's sites?

Answer: Additional information may be provided at a future kick off meeting.



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## ADDENDUM 2

**BID NUMBER: MCSW-E-RATE 2016-01**

**BID PACKAGE TITLE: MCSWAIN UNION ELEMENTARY SCHOOL DISTRICT E-RATE YEAR 2016 REQUEST FOR PROPOSAL**

**ADDENDUM DESCRIPTION: UPDATES TO MCSW E-RATE YEAR 2016 RFP**

**The vendors shall submit ALL pages of ADDENDUM 2 with the bid response**

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**I. UPDATE: DATA COMMUNICATION SERVICES – HIGH SPEED TELECOM SERVICES (DARK FIBER / BROADBAND)**

Vendors who are bidding on the items 470 under the section **DATA COMMUNICATION SERVICES – HIGH SPEED TELECOM SERVICES (DARK FIBER / BROADBAND)** of the MCSW E-Rate Year 2016 RFP shall use the specifications as stated in this addendum.

**II. UPDATE: DATA COMMUNICATION SERVICES – SELF-PROVISIONED BROADBAND NETWORK (FIBER BASED)**

Vendors who are bidding on the items 470 under the section **DATA COMMUNICATION SERVICES – SELF-PROVISIONED BROADBAND NETWORK (FIBER BASED)** of the MCSW E-Rate Year 2016 RFP shall use the specifications as stated in this addendum.

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**SPECIAL NOTE**

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## ADDENDUM 2

### DATA COMMUNICATIONS – HIGH SPEED TELECOM SERVICES (LIT FIBER SERVICE / DARK FIBER)

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The McSwain Elementary School District (MCSW) plans to compare Lit Fiber services to Dark Fiber for the dedicated point-to-point circuits between the McSwain Union Elementary School West Campus (“A” location) and various endpoints (“Z” locations). The endpoints of each circuit (“A” location & “Z” location) are identified in each item 470 in this section. **Vendors may bid on one or both options.**

Any proposed fiber solution (lit service or dark fiber) and modulating electronics must be exclusive to the school district. The solution options should provide high availability, high bandwidth services that support student learning.

In the bid response to each item 470 in this section, the vendor shall enter the necessary information including the **one-time non-recurring charges, the monthly recurring charges, and the anticipated circuit ready date.** All charges should be all inclusive. All-inclusive in this case means, including all non-recurring costs (NRC) required by the vendor to commence service, and all monthly recurring costs (MRC) should be included in the requisite columns of each item 470 in this section.

The vendor shall provide the following supporting documentation for BOTH lit fiber service & dark fiber –

1. An itemized copy of the quotation indicating each non-recurring cost required by the vendor to commence service, monthly recurring charges, and terms of agreement. The itemized copy of the quotation shall clearly indicate all non-recurring charges (especially, the E-Rate eligible special construction charges related to construction of network facilities, design and engineering, and project management).
2. Any additional technical specifications to utilize the quoted service outside the stated “Technical Requirements” and “Service Description”. Include “best practices” if available.
3. A copy of the vendor Service Level Agreement. The SLA shall state the following –
  - a. provide 99.99% guaranteed uptime
  - b. provide response time for outages
  - c. mean Time-To-Repair for outages <4 hours
4. A list of references utilizing quoted service (lit fiber and/or dark fiber) – preferably from other K-12 Education agencies.
5. An estimated timeline that reflects from the time of order to the time of customer hand-off/turn-up.
6. Vendor’s billing terms and conditions as they pertain to E-Rate and CTF discounts.
7. Vendors shall indicate their eligibility as a CTF vendor where requested. If there is no indication, the vendor will be presumed as ineligible in administering CTF discounts.

[Note: "normal" business costs, such as, but not limited to, SURETY/BOND costs, overhead costs, etc. shall NOT be shown on the itemized quotation].



## **ADDENDUM 2**

### **DATA COMMUNICATIONS – HIGH SPEED TELECOM SERVICES (LIT FIBER SERVICE / DARK FIBER)**

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#### **REQUIREMENTS**

Vendors must be an eligible telecommunications services provider (common carriers) with a telecommunication services SPIN. Proposals from vendors not meeting this criterion may be automatically considered as non-responsive. Vendors shall assume responsibility for "stacking" of discounts. The proposal should include an option to continue with the service(s) on a month-to-month basis at the end of the service contract.

Following specific requirements shall apply for lit fiber services proposal -

1. Fully managed.
2. Guaranteed Lit Transport Bandwidth throughput (upload and download) 1000 Mbps with Service Level Agreement (SLA) guarantees.
3. Connections shall be full duplex, point-to-point.
4. Circuit shall be handed off to the customer via copper/fiber for 1000 Mbps services at sites located in Atwater, CA 95301.
5. All lit service circuits must support Quality of Service (QoS) and have the ability to apply rate limiting guarantees to specific packet types to ensure Quality of Service at each WAN link. The network must have the ability to support multiple QoS policies and prioritization queues across each link in the WAN to reduce latency and packet loss and guarantee throughput to support student learning.
6. There is no right to rate limit or throttle the capacity of the circuit at any time
7. Symmetrical upstream and downstream bandwidth to the required levels
8. Network Latency Commitment <20 milliseconds roundtrip
9. Network Jitter Commitment <5 milliseconds
10. Bit-Error Rate commitment <0.25% between circuit endpoints
11. Mean Time-To-Repair for outages <4 hours

## ADDENDUM 2

### DATA COMMUNICATIONS – HIGH SPEED TELECOM SERVICES (LIT FIBER SERVICE / DARK FIBER)

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As an alternative (i.e option 2 under the item 470 in this section), MCSW is requesting a bid for leased dark fiber between the McSwain Union Elementary School West Campus (“A” location) and the Wired Data Center in Merced, California (“Z” location). The fiber run between the “A” location and the “Z” location shall comprise of dedicated fiber. The term of the lease shall be 5 years. The contract for leased dark fiber MAY be in the form of an IRU (Indefeasible Right To Use).

The pricing for leased dark fiber shall consist of a one-time capital cost payment and an “all-in” recurring payments for operations and maintenance costs of the fiber facilities for the 5-year lease term. The district welcomes proposal with optional payment plans structure such as a monthly recurring cost (MRC) over the lease term. **Please note that MCSW will be unable to evaluate proposals that do not include at least one alternative for an up-front capital payment for the fiber combined with separately identified recurring maintenance payments.** In addition, MCSW requests that vendors provide installment payment options for the District’s non-discounted portion of any non-recurring costs related to special construction, with such payments to be made over 4 years.

If special construction charges are requested by the vendor for the fiber proposed to be IRU’d, MCSW expect significant reductions from prevailing market rates for the IRU fee and annual maintenance charges.

Following specific requirements shall apply for leased dark fiber proposal –

1. The response should include an **additional proposal option** for consideration that includes modulating electronics (such as, but not limited to Cisco Systems or compatible equipment) and required licensing, services and maintenance associated with lighting the proposed dark fiber. The proposal option should include -
  - a. The modulating electronics that provide a minimum of a 1 Gb or 10 Gb Ethernet connections for connectivity.
  - b. A separate itemized bill of materials showing, at minimum, the part number, description, quantities, unit pricing, and total pricing.
  - c. E-Rate eligible status and percentage of eligibility of all modulating electronics, licensing, services and maintenance provided within its proposal.
  - d. All required components for an operational system including all recommended equipment and materials listed for system, an estimated calendar for procurement per phase and per subproject, if applicable.
  - e. Vendor/manufacturer warranty and maintenance policies and procedures.
2. The response will provide a **separate detailed line item bill of materials, labor and costs** for the associated Ethernet transceivers and electronics to light the fiber based on bandwidth requirements of the site, fiber distance and db loss budget design estimates.
3. Handoff shall consist of Single Mode, duplex bulkhead, with SC/APC connectors.
4. MCSW prefers to lease dark fiber routes that contain a homogenous fiber type throughout the segment.

## **ADDENDUM 2**

### **DATA COMMUNICATIONS – HIGH SPEED TELECOM SERVICES (LIT FIBER SERVICE / DARK FIBER)**

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5. Operations and Maintenance Practices - MCSW will require on-going maintenance and operations of the fiber for lease term. When pricing maintenance and operations, the vendors should include an overview of fiber maintenance practices including:
- a. Routine maintenance and inspection.
  - b. Scheduled maintenance windows and scheduling practices for planned outages.
  - c. Fiber monitoring including information on what fiber management software is used, what fiber monitoring system is used, and who performs the monitoring.
  - d. Handling of unscheduled outages and customer problem reports
  - e. What service level agreement is included, and what alternative service levels may be available at additional cost.
  - f. The agreements are in place with applicable utilities and utility contractors for emergency restoration.
  - g. Repair of fiber breaks.
  - h. Replacement of damaged fiber.
  - i. Replacement of fiber which no longer meets specifications.
  - j. Policies for customer notification regarding maintenance.
  - k. Process for changing procedures, including customer notification practices.

The pricing for dark fiber maintenance should include the annual cost per linear mile for dark fiber maintenance and operations.

## ADDENDUM 2

### DATA COMMUNICATIONS – HIGH SPEED TELECOM SERVICES (LIT FIBER SERVICE / DARK FIBER)

<b>470-HS1-16</b>		<b>McSwain Union Elementary School District</b>								
		<b>LIT / DARK FIBER – DEDICATED POINT-TO-POINT CONNECTION</b>								
		<b>All services shall begin 7/1/2016 and end 6/30/2017 (or beyond for contracts up to 5 years)</b>								
Option	From ("A") / To ("Z")	Speed & Service	Qty	Speed (Bid)	\$One-time (Non Recurring)	\$Monthly (Recurring)	\$Surchg & Fees	\$Govt Tx & Fees	Circuit Ready Date	E-Rate? (Y/N)
1	"A" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341	1000 Mbps Lit Fiber Service	1							
	"Z" location - Wired Data Center 450 West 18th St Merced, CA 95340	1000 Mbps Lit Fiber Service	1							
2	"A" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341	2-strand SINGLE MODE Dark Fiber	1							
	"Z" location - Wired Data Center 450 West 18th St Merced, CA 95340	2-strand SINGLE MODE Dark Fiber	1							

## ADDENDUM 2

### DATA COMMUNICATIONS – HIGH SPEED TELECOM SERVICES (LIT FIBER SERVICE / DARK FIBER)

<b>470-HS1-16</b>		<b>McSwain Union Elementary School District</b> <b>LIT / DARK FIBER – DEDICATED POINT-TO-POINT CONNECTION</b> <b>All services shall begin 7/1/2016 and end 6/30/2017 (or beyond for contracts up to 5 years)</b>								
Option	From ("A") / To ("Z")	Speed & Service	Qty	Speed (Bid)	\$One-time (Non Recurring)	\$Monthly (Recurring)	\$Surchg & Fees	\$Govt Tx & Fees	Circuit Ready Date	E-Rate? (Y/N)

**Notes**

1. \_\_\_\_\_
2. \_\_\_\_\_

CTF vendor (Yes/No): \_\_\_\_\_

## ADDENDUM 2

### DATA COMMUNICATIONS – HIGH SPEED TELECOM SERVICES (LIT FIBER SERVICE / DARK FIBER)

<b>470-HS2-16</b>		<b>McSwain Union Elementary School District</b> <b>LIT / DARK FIBER – DEDICATED POINT-TO-POINT CONNECTION</b> <b>All services shall begin 7/1/2016 and end 6/30/2017 (or beyond for contracts up to 5 years)</b>								
Option	From ("A") / To ("Z")	Speed & Service	Qty	Speed (Bid)	\$One-time (Non Recurring)	\$Monthly (Recurring)	\$Surchg & Fees	\$Govt Tx & Fees	Circuit Ready Date	E-Rate? (Y/N)
1	"A" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341	1000 Mbps Lit Fiber Service	24							
	"Z" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341	1000 Mbps Lit Fiber Service	24							
2	"A" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341	10 Gb Lit Fiber Service	12							
	"Z" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341	10 Gb Lit Fiber Service	12							

## ADDENDUM 2

### DATA COMMUNICATIONS – HIGH SPEED TELECOM SERVICES (LIT FIBER SERVICE / DARK FIBER)

<b>470-HS2-16</b>		<b>McSwain Union Elementary School District</b>								
		<b>LIT / DARK FIBER – DEDICATED POINT-TO-POINT CONNECTION</b>								
		<b>All services shall begin 7/1/2016 and end 6/30/2017 (or beyond for contracts up to 5 years)</b>								
Option	From ("A") / To ("Z")	Speed & Service	Qty	Speed (Bid)	\$One-time (Non Recurring)	\$Monthly (Recurring)	\$Surchg & Fees	\$Govt Tx & Fees	Circuit Ready Date	E-Rate? (Y/N)
3	"A" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341	72-strand SINGLE MODE dark fiber	1							
	"Z" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341	72-strand SINGLE MODE dark fiber	1							

**Notes**

1. \_\_\_\_\_
2. \_\_\_\_\_

**CTF vendor (Yes/No):** \_\_\_\_\_

## ADDENDUM 2

### DATA COMMUNICATION SERVICES – SELF-PROVISIONED BROADBAND NETWORK (FIBER BASED)

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McSwain Union Elementary School District (MCSW) is seeking proposals that provide a special construction project for a **district owned** fiber network, the modulating equipment, the maintenance, and the operations of high-speed self-provisioned broadband network. The purpose of the district owned fiber is to consolidate all the IDF's in the McSwain School East Campus to the McSwain School West Campus, thereby eliminating the need for core network equipment in the McSwain School East Campus.

**The MCSW owned fiber network shall consist of SINGLE MODE fiber.** MCSW will compare any proposals for self-provisioned broadband network against the cost of lit service to the total cost of ownership over the life of the facility for self-construction option. **Vendors may bid on one or both options.**

Proposals for a MCSW owned, self-provisioned broadband network on a special construction project shall include associated right away, easements, pole attachments, maintenance, repair and service of the network. The proposal must meet all construction requirements, insurance, performance and payment bonds of a MCSW construction project. If a self-provisioned broadband network proposal is determined to be the most cost effective solution, the staff of MCSW and methods of MCSW will be invoked to manage and lead the project.

MCSW request the option to pay up-front costs in installment payments over four years and E-rate to pay the full discounted share of up-front special construction charges in the first year.

In the bid response to each item 470 in this section, the vendor shall enter the necessary prices including the **TOTAL BID PRICE**. The vendor shall provide the following supporting documentation –

1. An itemized copy of bid indicating installation, special construction costs (such as construction of network facilities, design and engineering, and project management), on-going maintenance costs (e.g. the fiber infrastructure and modulating electronics), etc.
2. A **separate detailed line item bill of materials, labor and costs** associated with the modulating electronics to light the fiber. The bill of materials shall include, at minimum, the part number, description, quantities, unit price, and total price.
3. E-Rate eligible status and percentage of eligibility of all modulating electronics, licensing, services and maintenance provided within its proposal. Payment schedule of the up-front costs over four years.
4. Any additional technical specifications to utilize the quoted service outside the stated "Technical Requirements" and "Service Description". Include "best practices" if available.
5. A copy of the vendor Service Level Agreement associated with the on-going maintenance of the Self-Provisioned Broadband Network.
6. A list of references utilizing self-provisioned broadband networks - preferably from other K-12 education agencies.
7. An estimated timeline that reflects from the time of order to the time of customer hand-off/turn-up.
8. Vendor's billing terms and conditions as they pertain to E-Rate and CTF discounts.
9. Vendors shall indicate their eligibility as a CTF vendor where requested. If there is no indication, the vendor will be presumed as ineligible in administering CTF discounts.



## **ADDENDUM 2**

### **DATA COMMUNICATION SERVICES – SELF-PROVISIONED BROADBAND NETWORK (FIBER BASED)**

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[Note: "normal" business costs, such as, but not limited to, SURETY/BOND costs, overhead costs, etc. shall NOT be shown on the itemized quotation].

## **ADDENDUM 2**

### **DATA COMMUNICATION SERVICES – SELF-PROVISIONED BROADBAND NETWORK (FIBER BASED)**

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Vendors must be an eligible telecommunications services provider (common carriers) with a telecommunication services SPIN. Proposals from vendors not meeting this criterion may be automatically considered as non-responsive. Vendors shall assume responsibility for "stacking" of discounts.

The proposal shall include:

1. Fusion splicing as the fiber termination method at BOTH ends of the fiber.
2. An **additional proposed option** for consideration that includes modulating electronics (Cisco Systems or compatible SFP or SFP+), services and maintenance associated with lighting the proposed dark fiber. The modulating electronics should provide a minimum of a 1 Gb or 10 Gb Ethernet connections for connectivity to the MCSW equipment. The vendor shall provide a **separate detailed line item bill of materials, labor and costs** for the associated Ethernet transceivers and electronics to light the fiber based on bandwidth requirements of the site, fiber distance and db loss budget design estimates. The bill of materials shall include, at minimum, the part number, description, quantities, unit price, and total price.
3. The ongoing maintenance cost of the fiber infrastructure and modulating equipment required to light the fiber.
4. The Service Level Agreement (SLA) for the on-going maintenance of the fiber infrastructure and modulating equipment required to light the fiber
5. Specifications for customer handoff – SINGLE MODE fiber, duplex bulkhead, with SC/APC connectors along with fiber distances and db loss budget test information.

## ADDENDUM 2

### DATA COMMUNICATION SERVICES – SELF-PROVISIONED BROADBAND NETWORK (FIBER BASED)

<b>470-SP1-16</b>		<b>McSwain Union Elementary School District LIT / DARK FIBER – DEDICATED POINT-TO-POINT CONNECTION All services shall begin 7/1/2016</b>								
Option	From ("A") / To ("Z")	Qty	Minimum Capacity	Maximum Capacity	\$One-time (Non Recurring)	\$Monthly (Recurring)	\$Surchg & Fees	\$Govt Tx & Fees	Expected Ready Date	E-Rate? (Y/N)
1	"A" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341	72 strand SINGLE MODE dark fiber	1 Gb	1 Gb						
	"Z" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341		1 Gb	1 Gb						
2	"A" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341	72 strand SINGLE MODE dark fiber	10 Gb	10 Gb						
	"Z" location - McSwain Union Elementary School West Campus 785 N. Scott Road Merced, CA 95341		10 Gb	10 Gb						

## ADDENDUM 2

### DATA COMMUNICATION SERVICES – SELF-PROVISIONED BROADBAND NETWORK (FIBER BASED)

<b>470-SP1-16</b>		<b>McSwain Union Elementary School District</b> <b>LIT / DARK FIBER – DEDICATED POINT-TO-POINT CONNECTION</b> <b>All services shall begin 7/1/2016</b>								
Option	From ("A") / To ("Z")	Qty	Minimum Capacity	Maximum Capacity	\$One-time (Non Recurring)	\$Monthly (Recurring)	\$Surchg & Fees	\$Govt Tx & Fees	Expected Ready Date	E-Rate? (Y/N)

Notes

1. \_\_\_\_\_
2. \_\_\_\_\_

CTF vendor (Yes/No): \_\_\_\_\_

# **ADDENDUM 2**

## **DATA COMMUNICATION SERVICES – SELF-PROVISIONED BROADBAND NETWORK (FIBER BASED)**

### **NEW BUILD FIBER STATEMENT OF WORK**

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#### **Project Management**

1. Selected contractor and its subcontractors will provide all project management to accomplish the installation of all project work as outlined in the Statement of Work.
2. Provide engineer(s), certified on selected fiber system specifications and procedures to manage all phases of project as outlined in this proposal. This includes ordering and managing the bill of materials as outlined below, directing and managing cable placement and restoration, directing and managing splicing crews and providing detailed documentation at the end of the project.
3. Selected contractor and its subcontractors will develop a project management plan, which will include a milestone chart. The milestone chart will outline any critical path events and then track these with the appropriate agency/organization whether; selected contractor, a selected contractor subcontractor or (MCSW staff)

#### **Material Management**

1. Selected contractor and its subcontractors will provide all material management to ensure that the project remains on track according to the project milestones.
2. Selected contractor and its subcontractors will develop in conjunction with selected contractor plants and other suppliers a material management plan.

#### **Property Restoration**

1. All cable routes, which are plowed / trenched, will be restored to as near to original condition as possible.
2. All highway shoulders, schoolyards, and ditch lines will be compacted and restored to satisfactory condition.
- 3.

#### **Fiber Cabling Specifications**

1. Indoor-Outdoor rated single mode fiber optic cables shall be used in all fiber optic installations. All fiber optic strands shall be terminated as specified.
2. The single mode fiber optic cables shall be pulled between each wiring closet, leaving a 15' slack loop, in addition to the fiber loop inside the enclosure, on both ends. The slack loop should be "dressed" in a fashion to fit inside the wiring closet

## **ADDENDUM 2**

### **DATA COMMUNICATION SERVICES – SELF-PROVISIONED BROADBAND NETWORK (FIBER BASED)**

#### **NEW BUILD FIBER STATEMENT OF WORK**

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3. The single mode fiber at the MDF shall be fusion-spliced to pre-polished SC pigtailed (part number F912D3-NM1Y) and terminated inside a Panduit 19" rack mount fiber enclosure (part number FRME4) on Panduit SC bulkheads (part number FAP6WBUDSCZ).
4. The single mode fiber at each IDF shall be fusion-spliced to pre-polished SC pigtailed (part number F912D3-NM1Y) and terminated inside a Panduit 19" rack mount fiber enclosure (part number FRME1) on Panduit SC bulkheads (part number FAP6WBUDSCZ).
5. Sufficient fiber splice tray kit(s) (part number FST24) shall be installed at the MDF to hold all fiber splices.
6. One (1) splice sleeve holder (part number FSC24) shall be installed in each IDF location.
7. Blank fiber adapter panels (part number FAPB) shall be installed to cover unused fiber adapter panels at the MDF and the IDF.
8. Prep closures, cables, fibers and splice fibers at all field locations
9. All plowed cables shall be placed at a depth of 36" along roadways and 24" on private property.
10. All road and driveway bores shall be at a depth of 36" and will have a 2" inner duct placed within.
11. Pull boxes shall –
  - a. sit on 6-inch gravel base.
  - b. be filled with 1-inch of concrete from the bottom to prevent destruction of cabling by burrowing animals.
  - c. be installed with extension rings (where required)
  - d. be installed with lockable covers -
    - i. traffic rated covers shall be installed where required
    - ii. all covers shall be labeled as "Communications"
    - iii. underside of cover shall be labeled with pull box number

## **ADDENDUM 2**

### **DATA COMMUNICATION SERVICES – SELF-PROVISIONED BROADBAND NETWORK (FIBER BASED)**

#### **NEW BUILD FIBER STATEMENT OF WORK**

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##### **Fiber Cabling Testing, Certification, & Documentation**

1. The vendor shall perform the required tests on the single mode fiber installation as identified in the TIA/EIA standard.
2. The vendor shall test each fiber strand in a fiber optic link at TWO (2) wavelengths as identified in the TIA/EIA standard. This testing process shall be executed in one test operation without making or breaking connections (i.e. without moving tested units).
3. The vendor shall perform Tier 1 and Tier 2 tests on the single mode fiber installation in strict accordance to TIA guidelines.
4. The vendor shall utilize launch and receive test cables in the OTDR test to measure the end-to-end loss of the optical fiber links.
5. The vendor shall provide a softcopy and a hardcopy of ALL fiber test results, the Power Meter Report, and the OTDR Report to MCSW upon completion of the job.
6. The vendor shall update a copy of the site drawing with information showing the fiber cabling paths and lengths, conduit paths and lengths. MCSW shall provide the vendor will a base drawing of the site in Visio or CAD format.
7. The fiber shall be labeled to easily identify location and quantity. Final labeling shall be determined during project kickoff meeting.
8. The customer reserves the right to have a representative present during all or a portion of the testing process. If the customer elects to be present during testing, test results will only be acceptable when conducted in the presence of the customer.

## **ADDENDUM 3**

**BID NUMBER: MCSW-E-RATE 2016-01**

**BID PACKAGE TITLE: MCSWAIN UNION ELEMENTARY SCHOOL DISTRICT E-RATE YEAR 2016 REQUEST FOR PROPOSAL**

**ADDENDUM DESCRIPTION: UPDATES TO MCSW E-RATE YEAR 2016 FIBER & COPPER CABLING SPECIFICATIONS AND SCOPE OF WORK (470-DW1x-16)**

**The vendors shall submit ALL pages of ADDENDUM 3 with the bid response**

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The Fiber & Copper Cabling Specifications and the Fiber & Copper Cabling Scope of Work in this addendum shall **REPLACE** the respective documents that were included in the McSwain Union Elementary School District E-Rate Year 2016 RFP, and/or any addenda that were distributed at the Bidders Meeting that was held on December 7, 2016 at the McSwain Union Elementary School District.

All other issues that were discussed, stipulated, and agreed upon during the first session of the Bidders Meeting that was held on December 7, 2016 at the McSwain Union Elementary School District, but not stated in this addendum, shall remain in full effect.

Vendors who are bidding for the McSwain Union Elementary School District E-Rate Year 2016 Data Cabling shall submit their bid based on the cabling specifications and scopes of work that are included in this addendum.

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**All other bidding/contract and construction drawing documents, stipulations, dates and times remain unchanged, in full effect and by reference become a part of this addendum.**

### **SPECIAL NOTE**

**It is the responsibility of each Bidder to acknowledge all addenda by signing below and submitting a copy of each addendum with their respective bid.**

**I HAVE READ AND UNDERSTOOD ALL PAGES OF ADDENDUM 3 OF THE ABOVE BID: \_\_\_\_\_**



## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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#### **- GENERAL CONDITIONS AND REQUIREMENTS -**

1. The installer shall attend a project kickoff meeting with Customer’s IT staff and the General Contractor prior to the commencement of work.
2. Any work that is disruptive to the learning environment shall be performed during non-school hours.
3. Vendor shall return the classroom to its original state prior to leaving the work site.
4. The customer shall provide the equipment stated under the - RACEWAY & CABLING ACCESSORIES FOR OUTSIDE WIRELESS – “- section of this document (hereafter called “Customer Supplied Equipment”).
5. With the exception of the Customer Supplied Equipment, the vendor shall supply the specific items that are stated in this document.
6. The vendor shall also provide all other necessary supplies to complete the installation of items specified in this document.
7. The vendor shall properly seal all outdoor connections and building penetrations against weather.
8. The vendor shall mend/repair/repaint all damages due to the installation of items specified in this document.
9. The vendor shall utilize Panduit certified installers in all copper and fiber cabling installations specified in this document.
10. All copper and fiber cabling shall have a certified 25-year warranty with the cabling manufacturer.
11. The vendor shall provide a hardcopy of the Panduit certification of their installers in the bid response.

#### **- RACEWAY & CABLING ACCESSORIES FOR DATA LOCATIONS -**

1. At locations that require NEW 3-channel raceway, the vendor shall install -
  - a. Wiremold 3-channel raceway with dividers (part number 5500BD3). The vertical Wiremold raceway shall connect to the horizontal raceway via Wiremold Flat 90 degree elbow (part numbers 5511FO).

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- b. ONE (1) Wiremold device bracket (part number 5550) on the horizontal 3-channel Wiremold raceway base (part number 5500BD3) at EACH location for DATA.
- c. ONE (1) Wiremold duplex faceplate (part number 5507D) and ONE (1) Panduit module frame on EACH Wiremold device bracket that covers the top-most channel of the 3-channel Wiremold raceway at locations requiring cables for DATA or TELEPHONE. The Panduit module frame part number shall be CF1064EIY or CF1062EIY depending on the number of DATA and/or TELEPHONE cables at each location.
- d. ONE (1) Wiremold blank faceplate (part number 5507B) shall be placed on EACH Wiremold device bracket that covers the middle channel of the 3-channel Wiremold raceway.
- e. ONE (1) Wiremold blank faceplate (part number 5507B) on EACH Wiremold device bracket that covers the bottom-most channel of the 3-channel Wiremold raceway.
- f. Appropriate data jacks
  - i. Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU) at locations requiring Category 6 cables for DATA
  - ii. Panduit Category 6A UTP BLUE DATA jacks (part number CJ6X88TGBU) at locations requiring Category 6A cables for DATA
- g. Panduit Category 3 UTP WHITE TELEPHONE jacks (part number CJ64WHY) at locations requiring cables for TELEPHONE.
- h. Panduit blank covers (part number CMBEI-X) shall be installed to cover ALL unused data and telephone receptacles.
- i. Wiremold covers (part number 5500C) to cover ALL opened sections of the 3-channel Wiremold raceway.
- j. Appropriate Wiremold base seam clips (part number 5506B) and/or Wiremold elbows (part numbers 5511, 5511FO, 5517, 5517FO, 5518, 5518FO) to join ALL sections of the 3-channel Wiremold raceway base.

Exact locations of the data jacks and telephone jacks shall be determined during the site walk PRIOR to start of cabling work.

2. At locations that require NEW 2-channel raceway, the vendor shall install -
  - a. Wiremold 2-channel raceway with dividers (part number 5400TB). The vertical Wiremold raceway shall connect to the horizontal raceway via Wiremold Flat Elbow (part number 5411FO) or Wiremold Tee (part number 5415FO).

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- b. ONE (1) Wiremold device bracket (part number 5450) on the horizontal 2-channel Wiremold raceway base (part number 5400TB) at EACH location for DATA.
- c. ONE (1) Wiremold duplex faceplate (part number 5507D) and ONE (1) Panduit module frame on EACH Wiremold device bracket that covers the top-most channel of the 2-channel Wiremold raceway at locations requiring cables for DATA or TELEPHONE. The Panduit module frame part number shall be CF1064EIY or CF1062EIY depending on the number of DATA and/or TELEPHONE cables at each location.
- d. ONE (1) Wiremold blank faceplate (part number 5507B) on EACH Wiremold device bracket that covers the bottom-most channel of the 2-channel Wiremold raceway.
- e. Appropriate data jacks
  - i. Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU) at locations requiring Category 6 cables for DATA
  - ii. Panduit Category 6A UTP BLUE DATA jacks (part number CJ6X88TGBU) at locations requiring Category 6A cables for DATA
- f. Panduit Category 3 UTP WHITE TELEPHONE jacks (part number CJ64WHY) at locations requiring cables for TELEPHONE.
- g. Panduit blank covers (part number CMBEI-X) shall be installed to cover ALL unused data and telephone receptacles.
- h. Wiremold covers (part number 5400C) to cover ALL opened sections of the 2-channel Wiremold raceway.
- i. Wiremold cover clips (part number 5406A) to cover adjoining pieces of Wiremold covers (part number 5400C).
- j. Wiremold base seam clips (part number 5406TB) to join ALL sections of the 2-channel Wiremold raceway base that are on the same wall.
- k. Appropriate Wiremold elbows (part numbers 5417FO, 5418, 5418FO) to join ALL sections of the 2-channel Wiremold raceway base that are on adjacent walls.

Exact locations of the data jacks and telephone jacks shall be determined during the site walk PRIOR to start of cabling work.

- 3. At locations that require NEW Wiremold single-channel raceway, the vendor shall install -
  - a. Wiremold Eclipse single-channel raceway (part number PN10L10)

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- b. Wiremold transition fitting (part number 5474) to connect the Wiremold Eclipse single-channel raceway (part number PN10L10) to –
  - i. Wiremold 2-channel raceway (part number 5400TB)
  - ii. Wiremold 3-channel raceway with dividers (part number 5500BD3).
- c. Panduit single-gang low voltage surface mount box (part number JB1EI-A).
- d. The following types of vertical faceplates
  - i. Panduit single gang vertical faceplate (part number CFPE2EIY) at locations requiring TWO (2) cables for DATA.
  - ii. Panduit single gang vertical faceplate (part number CFPE4EIY) at locations requiring THREE (3) or FOUR (4) cables for DATA.
  - iii. Panduit single gang vertical faceplate (part number CFPE6EIY) at locations requiring SIX (6) cables for DATA.
  - iv. Panduit single gang vertical faceplate (part number CFPE4EIY) at locations requiring TWO (2) cables for DATA and ONE (1) cable for TELEPHONE cable.
- e. Appropriate data jacks
  - i. Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU) at locations requiring Category 6 cables for DATA
  - ii. Panduit Category 6A UTP BLUE DATA jacks (part number CJ6X88TGBU) at locations requiring Category 6A cables for DATA
- f. Panduit Category 3 UTP WHITE TELEPHONE jacks (part number CJ64WHY) at locations requiring cables for TELEPHONE.
- g. Panduit blank covers (part number CMBEI-X) to cover unused receptacles.

Exact locations shall be determined during the site walk PRIOR to start of cabling work.

- 4. At locations that require NEW Tyton single-channel raceway, the vendor shall install -
  - a. Single-gang junction box (part number TSRI-JB2) for locations requiring DATA and TELEPHONE.
  - b. Tyton single-channel surface mount raceway (part number TSR2I-8A) from the suspended ceiling to the single-gang junction box TSRI-JB2
  - c. Tyton ceiling cap (part number TSR2I-36) at the transition point between the ceiling and the surface mount raceway.
  - d. Tyton splice cover (part number TSR2I-14) at adjoining sections of surface mount raceway.

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- e. The following types of vertical faceplates
  - i. Panduit single gang vertical faceplate (part number CFPE2EIY) at locations requiring TWO (2) cables for DATA.
  - ii. Panduit single gang vertical faceplate (part number CFPE4EIY) at locations requiring THREE (3) or FOUR (4) cables for DATA.
  - iii. Panduit single gang vertical faceplate (part number CFPE6EIY) at locations requiring SIX (6) cables for DATA.
  - iv. Panduit single gang vertical faceplate (part number CFPE4EIY) at locations requiring TWO (2) cables for DATA and ONE (1) cable for TELEPHONE cable.
- f. Appropriate data jacks
  - i. Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU) at locations requiring Category 6 cables for DATA
  - ii. Panduit Category 6A UTP BLUE DATA jacks (part number CJ6X88TGBU) at locations requiring Category 6A cables for DATA
- g. Panduit Category 3 UTP WHITE TELEPHONE jacks (part number CJ64WHY) at locations requiring cables for TELEPHONE.
- h. Panduit blank covers (part number CMBEI-X) to cover unused receptacles.

Exact locations of the data jacks and telephone jacks shall be determined during the site walk PRIOR to start of cabling work.

- 5. At locations where EXISTING multi-channel raceway (2-channel and/or 3-channel) is AVAILABLE, the vendor shall install -
  - a. The appropriate device bracket, if necessary, on the EXISTING multi-channel at EACH location.
  - b. The appropriate faceplate and Panduit module frame on the device bracket that covers the top-most channel of the multi-channel raceway.
  - c. The appropriate blank faceplate to cover unused / opened sections of the device bracket.
  - d. Appropriate data jacks
    - i. Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU) at locations requiring Category 6 cables for DATA
    - ii. Panduit Category 6A UTP BLUE DATA jacks (part number CJ6X88TGBU) at locations requiring Category 6A cables for DATA

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- e. Panduit Category 3 UTP WHITE TELEPHONE jacks (part number CJ64WHY) at locations requiring cables for TELEPHONE.
- f. Panduit blank covers (part number CMBEI-X) to cover ALL unused data and telephone receptacles.
- g. The appropriate covers to cover ALL opened sections of the multi-channel raceway.

All device brackets, faceplates, module frames, covers, accessories, fittings, etc. shall be installed to make a fully functional system and MATCH EXISTING. The exact data locations shall be determined during the site walk PRIOR to start of cabling work.

- 6. At locations where in-wall conduit IS AVAILABLE, the vendor shall install –
  - a. ONE (1) Panduit module frame (part number CF1062EIY or CF1064EIY depending on the number of DATA and/or TELEPHONE cables at the location) in the recessed low voltage junction box, with a faceplate that matches the existing electrical receptacles.
  - b. Appropriate data jacks
    - i. Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU) at locations requiring Category 6 cables for DATA
    - ii. Panduit Category 6A UTP BLUE DATA jacks (part number CJ6X88TGBU) at locations requiring Category 6A cables for DATA
  - c. Panduit Category 3 UTP WHITE TELEPHONE jacks (part number CJ64WHY) at locations requiring cables for TELEPHONE.
  - d. Panduit blank covers (part number CMBEI-X) to cover ALL unused DATA and TELEPHONE receptacles.

Exact locations of the data jacks and telephone jacks shall be determined during the site walk PRIOR to start of cabling work.

- 7. At locations specified at the CEILING, the vendor shall install –
  - a. ONE (1) Panduit surface mount box
    - i. Part number CBX1EI-AY at locations requiring ONE (1) cable for DATA.
    - ii. Part number CBX2EI-AY at locations requiring TWO (2) cables for DATA.
    - iii. Part number CBX4EI-AY at locations requiring THREE (3) or FOUR (4) cables for DATA.
    - iv. Part number CBXD6EI-AY at locations requiring SIX (6) cables for DATA.

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- b. Appropriate data jacks
  - i. Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU) at locations requiring Category 6 cables for DATA.
  - ii. Panduit Category 6A UTP BLUE DATA jacks (part number CJ6X88TGBU) at locations requiring Category 6A cables for DATA.
- c. Panduit blank covers (part number CMBEI-X) to cover ALL unused receptacles.

Exact locations of the data jacks and telephone jacks shall be determined during the site walk PRIOR to start of cabling work.

**ALL NEW SURFACE MOUNTED RACEWAY, RACEWAY FITTINGS, MODULE FRAMES, FACEPLATES, AND COVERS SHALL BE THE SAME COLOR AND MATCH THE COLOR OF THE EXISTING RACEWAY AND RACEWAY ACCESSORIES.**

#### **- RACEWAY & CABLING ACCESSORIES FOR OUTSIDE WIRELESS –**

At locations with OUTSIDE WIRELESS, the vendor shall install –

1. One (1) Panduit 2-port surface mount box (part number UICBX2IW-A).
2. Appropriate data jacks
  - a. Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU) at locations requiring Category 6 cables for DATA
  - b. Panduit Category 6A UTP BLUE DATA jacks (part number CJ6X88TGBU) at locations requiring Category 6A cables for DATA
3. Two (2) Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU).
4. Panduit blank covers (part number CMBEI-X) shall be installed to cover unused receptacles
5. Tyton single-channel surface mount raceway (part number TSR2I-8A) from the suspended ceiling to the Panduit 2-port surface mount box UICBX2IW-A.
6. Tyton ceiling cap (part number TSR2I-36) at the transition point between the ceiling and the single-channel surface mount raceway TSR2I-8A.

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

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7. Tyton splice cover (part number TSR2I-14) shall be installed at adjoining sections of surface mount raceway.
8. At locations where the Category 6/6A penetrates the wall, vendor shall install -
  - a. ONE (1) 6 x 6 x 6 inch (HxWxD) NEMA-3R screw-covered wall mount lockable outdoor enclosure with 3 knockouts of ½”- ¾”, ¾”- 1”, and ½” – ¾” in size.
  - b. TWO (2) 2-inch conduits penetrating the back of the NEMA 3-R enclosure into the building attic space
9. ONE (1) NEW 2-inch diameter mast, securely attached to building, with a minimum of 1 foot of clearance between the bottom of the TerraWave Solutions enclosure assembly (customer provided) and the roof line.
10. TerraWave Solutions enclosure (provided by customer) shall be securely mounted on the mast (provided by the vendor) using the TerraWave Solutions 2-inch pole mount kit (part number PMK-210, provided by customer) per manufacturer’s specifications.
11. ONE (1) ¾ - inch sealtite flex conduit between 6 x 6 x 6 inch NEMA-3R enclosure and TerraWave Solutions enclosure. Sealtite flex conduit shall be properly secured and sealed at BOTH ends.
12. ONE (1) Category 6 Outside Plant (OSP) patch cable between the network device located inside the TerraWave Solutions enclosure and the Category 6 DATA jack located inside the NEMA-3R enclosure.

**ALL NEW SURFACE MOUNTED RACEWAY, RACEWAY FITTINGS, MODULE FRAMES, FACEPLATES, AND COVERS SHALL BE THE SAME COLOR AND MATCH THE COLOR OF THE EXISTING RACEWAY AND RACEWAY ACCESSORIES.**

#### **- FLOOR BOXES -**

1. At locations with floor mounted boxes, the vendor shall install the following inside the floor box -
  - a. Panduit module frames (part number CF1064EIIY) for data receptacles –
    - i. Part number CF1062EIIY at floor boxes requiring TWO (2) cables for DATA.
    - ii. Part number CF1064EIIY at floor boxes requiring THREE (3) or FOUR (4) cables for DATA.
  - b. Appropriate data jacks
    - i. Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU) at locations requiring Category 6 cables for DATA
    - ii. Panduit Category 6A UTP BLUE DATA jacks (part number CJ6X88TGBU) at locations requiring Category 6A cables for DATA



## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

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- c. Panduit blank covers (part number CMBEI-X) to cover unused receptacles.
- d. FULL complement of mounting hardware and fittings to make a FULLY functional system.

#### **- DATA POLES -**

1. At locations that require NEW DATA POLES, the vendor shall install -
  - a. Dual channel Panduit Pan-Pole Screw-On pole in electrical ivory color. Panduit Pan-Pole Snap-On pole shall be installed from floor to ceiling. Both channels shall accept Panduit module frames (part number CF1064EIY).
  - b. ONE (1) standard faceplate bracket (part number T70SDB-X) with EACH Panduit module frame.
  - c. Panduit module frames (part number CF1064EIY) for data receptacles –
    - i. Part number CF1062EIY at floor boxes requiring TWO (2) cables for DATA.
    - ii. Part number CF1064EIY at floor boxes requiring THREE (3) or FOUR (4) cables for DATA.
  - d. Appropriate data jacks
    - i. Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU) at locations requiring Category 6 cables for DATA
    - ii. Panduit Category 6A UTP BLUE DATA jacks (part number CJ6X88TGBU) at locations requiring Category 6A cables for DATA
  - e. Panduit blank covers (part number CMBEI-X) to cover unused receptacles.
  - f. Appropriate fasteners and hardware to secure data poles to floor and ceiling.
  - g. FULL complement of mounting hardware and fittings to make a FULLY functional system.
2. At locations with EXISTING data poles, the vendor shall install -
  - a. Standard faceplate bracket(s).
  - b. Panduit module frames (part number CF1064EIY) for data receptacles –
    - i. Part number CF1062EIY at floor boxes requiring TWO (2) cables for DATA.
    - ii. Part number CF1064EIY at floor boxes requiring THREE (3) or FOUR (4) cables for DATA.
  - c. Appropriate data jacks
    - i. Panduit Category 6 UTP BLUE DATA jacks (part number CJ688TGBU) at locations requiring Category 6 cables for DATA

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- ii. Panduit Category 6A UTP BLUE DATA jacks (part number CJ6X88TGBU) at locations requiring Category 6A cables for DATA
- d. Panduit blank covers (part number CMBEI-X) to cover unused receptacles.
- e. Appropriate fasteners and hardware to secure data poles to floor and ceiling.
- f. FULL complement of mounting hardware and fittings to make a FULLY functional system.

**ALL NEW SURFACE MOUNTED RACEWAY, RACEWAY FITTINGS, DATA POLES, MODULE FRAMES, FACEPLATES, AND COVERS SHALL BE THE SAME COLOR AND MATCH THE COLOR OF THE EXISTING RACEWAY AND RACEWAY ACCESSORIES.**

#### **- CONDUIT INSTALLATION SPECIFICATIONS -**

1. Where required, 2” conduit sleeves to be placed through any firewalls or existing walls located between rooms to allow the cabling to be pulled back to the IDF located within the building. Fire resistant material shall be used to insulate around the 2” conduit and in the remaining air space within the conduit to plug the holes.
2. Where required, NEW exterior pathways shall be installed
  - a. NEW exterior pathways shall consist of TWO (2) 2-inch conduits
3. All conduits installed shall have full sweeps -
  - a. Where applicable; new exposed exterior conduit shall be metal.
  - b. Where applicable; new exterior conduit shall be secured using appropriate fasteners to secure conduit to appropriate surface.
  - c. Where applicable; new NEMA 3R junction pull boxes or Christy boxes shall be placed every 100 feet.
  - d. New conduits going underground shall be PVC with minimum rating of Schedule 40.
  - e. All underground runs shall be continuous, without splices or taps. Underground boxes shall be used for pulling purposes only.
  - f. Where applicable; new saw cuts in concrete or asphalt shall be filled, packed, and resurfaced to match existing surface.
  - g. Each end of the conduit shall be labeled with the location (e.g, building, pull box number) of the opposite end.

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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4. Pull boxes and/or Christy boxes shall –
  - a. sit on 6-inch gravel base.
  - b. be filled with 1-inch of concrete from the bottom to prevent destruction of cabling by burrowing animals.
  - c. be installed with extension rings (where required)
  - d. be installed with lockable covers -
    - i. traffic rated covers shall be installed where required
    - ii. all covers shall be labeled as “Communications”
    - iii. underside of cover shall be labeled with pull box number
5. Vendor shall install 18” x 18” x 6” or larger terminal cans to terminate conduits sweeping below ground up the exterior wall of buildings.
6. Vendor shall utilize a minimum quantity of TWO (2) 2-inch conduit sleeves to penetrate from the terminal cans into the building.

#### **- CABINETS, RACKS, & ACCESSORIES SPECIFICATIONS -**

1. ALL 2-post relay racks shall
  - a. be bolted or screwed to the existing floor
  - b. be seismically braced at the top of the relay rack to the nearest wall(s) using
    - i. ladder rack (part number 10250-712)
    - ii. cable runway-to-wall rack kit (part number 11911-712)
    - iii. protective end caps (part number 10642-001)
  - c. be grounded/bonded to the nearest earth
    - i. provide grounding of LAN equipment racks with one (1) #6 copper ground in metal conduit. Metal ground conductor to be run from LAN rack to nearest continuous cold water pipe or existing ground, ground resistance shall be 25 ohms or less and shall be verified by ground resistance test.
  - d. include ONE (1) package of mounting screws (part number 40605-005)
  - e. include ONE (1) 75 ft. roll of Hook & Loop cable ties (part number HLM-75R0)
  - f. include ONE (1) 7 ft Panduit VERTICAL cable management unit (part number WMPVHC45E) on EITHER SIDE of the 2-post relay rack.

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- g. include ONE (1) 2U Panduit HORIZONTAL cable management unit (part number WMP1E) at the TOP of the 2-post relay rack.
  - h. include ONE (1) 2U Panduit HORIZONTAL cable management unit (part number WMP1E) at the BOTTOM of the 2-post relay rack.
2. ALL NetShelter enclosures shall -
- a. include ONE (1) plywood backboard. The plywood backboard shall be installed inside the Netshelter AR3140 enclosure to IF 25-pair Category 5 feeder cables are specified
  - b. include ONE (1) 75 ft. roll of Hook & Loop cable ties (part number HLM-75R0)
  - c. include ONE (1) 2U Panduit HORIZONTAL cable management unit (part number WMP1E) at the TOP of the NetShelter enclosure.
  - d. include ONE (1) 2U Panduit HORIZONTAL cable management unit (part number WMP1E) at the BOTTOM of the NetShelter enclosure.
  - e. be grounded/bonded to the nearest earth ground
    - i. provide grounding of LAN equipment racks with one (1) #6 copper ground in metal conduit. Metal ground conductor to be run from LAN rack to nearest continuous cold water pipe or existing ground, ground resistance shall be 25 ohms or less and shall be verified by ground resistance test.
  - f. be keyed the same.
3. ALL wall-mounted enclosures (WME) shall -
- a. include ONE (1) fan kit (part number E2-FA-2H-210-AC FAN)
  - b. include ONE (1) filter kit (part number E2WMFK)
  - c. include ONE (1) bushing kit (part number 79903821893)
  - d. include ONE (1) ¾” x 24” x 36” or larger fire-rated plywood. The plywood shall be painted to match the existing wall and secured to the studs to support each wall mount enclosure (WME), and/or Telco 66-Blocks (IF specified)
  - e. be dual hinged, vented on four sides, smoke Plexiglas front, and lockable.
  - f. be secured to the plywood and studs to support a minimum of 150 pounds of weight

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- g. be grounded/bonded to the nearest earth ground
  - i. provide grounding of LAN equipment racks with one (1) #6 copper ground in metal conduit. Metal ground conductor to be run from LAN rack to nearest continuous cold water pipe or existing ground, ground resistance shall be 25 ohms or less and shall be verified by ground resistance test.
- h. be keyed the same.

#### **- GENERAL CABLING GUIDELINES -**

1. Caddy “J” hooks shall be installed every 5 feet, above suspended ceiling, to support all cabling.
2. All cabling above suspended ceiling shall be properly secured, but not attached to the support wire of T-bar ceiling, and not laid across ceiling boards.
3. All copper cabling shall be installed away from electrical interference.
4. All copper and fiber cabling shall be installed in strict accordance to the cable manufacturer installation best practices.
5. Vendor shall relocate the existing wireless access points to new access point cable location. Vendor shall work with District IT staff to verify that the access point has reconnected to the Wireless LAN Controller.

#### **- FIBER CABLING SPECIFICATIONS -**

1. Indoor-Outdoor rated single mode fiber optic cables shall be used in all fiber optic installations. All fiber optic strands shall be terminated as specified.
2. The single mode fiber optic cables shall be pulled from the MDF to each respective IDF leaving a 15’ slack loop, in addition to the fiber loop inside the enclosure, on both ends. The slack loop should be “dressed” in a fashion to fit inside the MDF or IDF location.
3. Inside conduits may be filled with existing cables and/or water. An additional quote will be required as an option if any additional underground work is required. Vendor shall be responsible for any/all repairs to damage caused by underground work.

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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4. The single mode fiber at MDF shall be fusion-spliced to pre-polished SC pigtails (part number F912D3-NM1Y) and terminated inside a Panduit 19” rack mount fiber enclosure (part number FRME4) on Panduit SC bulkheads (part number FAP6WBUDSCZ).
5. The single mode fiber at each IDF shall be fusion-spliced to pre-polished SC pigtails (part number F912D3-NM1Y) and terminated inside a Panduit 19” rack mount fiber enclosure (part number FRME1) on Panduit SC bulkheads (part number FAP6WBUDSCZ).
6. Sufficient fiber splice tray kit(s) (part number FST24) shall be installed at the MDF to hold all fiber splices.
7. One (1) splice sleeve holder (part number FSC24) shall be installed in each IDF location.
8. Blank fiber adapter panels (part number FAPB) shall be installed to cover unused fiber adapter panels at the MDF and the IDF.

#### **- FIBER CABLING TESTING, CERTIFICATION, & DOCUMENTATION -**

1. The vendor shall perform the required tests on the single mode fiber installation as identified in the TIA/EIA 568-B standard. Specifically,
2. The vendor shall test each fiber strand in a fiber optic link at TWO (2) wavelengths as identified in the TIA/EIA 568-B standard. This testing process shall be executed in one test operation without making or breaking connections (i.e. without moving tested units).
3. The vendor shall perform Tier 1 and Tier 2 tests on the single mode fiber installation in strict accordance to TIA TSB-140 guidelines.
4. The vendor shall utilize launch and receive test cables in the OTDR test to measure the end-to-end loss of the optical fiber links.
5. The vendor shall provide a softcopy and a hardcopy of ALL fiber test results, the Power Meter Report, and the OTDR Report to GUSD upon completion of the job.
6. The vendor shall update a copy of the site drawing with information showing the fiber cabling paths and lengths, conduit paths and lengths. GUSD shall provide the vendor will a base drawing of the site in Visio or CAD format.

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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7. The fiber shall be labeled to easily identify location and quantity. Final labeling shall be determined during project kickoff meeting.
8. The customer reserves the right to have a representative present during all or a portion of the testing process. If the customer elects to be present during testing, test results will only be acceptable when conducted in the presence of the customer.

#### **- CATEGORY 6 CABLING SPECIFICATIONS -**

1. All Category 6 cabling shall be terminated to BLUE Panduit Mini-Com Category 6 T568B data jacks (part number CJ688TGBU).
2. All Category 6 cabling terminations at the MDF or IDF shall be mounted onto Panduit 48-port switch patching kit(s) with blue patch cords and strain relief bar. The Panduit part number for the switch patching kit is CPP48KFVPCBU. Each switch patching kit includes ONE (1) Panduit 48-port flush mount patch panel (part number CPP48FMVNSWBL), Forty-Eight (48) 8-inch Cat 6 small diameter BLUE patch cords (part number UTP28SP8INBU), and ONE (1) Strain Relief Bar (part number SRB19D5BL).
3. All Category 6 cabling terminations at the specified locations shall be mounted on the appropriate faceplates or surface mount boxes as specified in this document.
4. All INSIDE Category 6 cabling shall be BLUE in color and shall be either General (part number 7133800 for riser cabling or part number 7131800 for plenum cabling) or Panduit cabling (part number PUR6004BU-UY for riser cabling and/or PUP6004BU-UY for plenum cabling).
5. All OUTSIDE Category 6 cabling shall be BLACK in color and shall be General cabling (part number 7136100).
6. Vendor shall provide ONE (1) 8-foot Category 6 patch cable (WHITE color) for each Category 6 cable drop that is specified under the “- **NEW COPPER CABLING INSTALLATION SCOPE OF WORK** -“ section.

#### **- CATEGORY 6A CABLING SPECIFICATIONS -**

1. All Category 6A cabling shall be terminated to BLUE Panduit Mini-Com Category 6A T568B data jacks (part number CJX688TGBU).
2. All Category 6A cabling terminations at the MDF or IDF shall be mounted onto Panduit 48-port switch patching kit(s) with blue patch cords and strain relief bar. The Panduit part number for the switch patching kit is

## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

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CPP48KFVPCBU. Each switch patching kit includes ONE (1) Panduit 48-port flush mount patch panel (part number CPP48FMVNSWBL), Forty-Eight (48) 8-inch Cat 6 small diameter BLUE patch cords (part number UTP28SP8INBU), and ONE (1) Strain Relief Bar (part number SRB19D5BL).

3. All Category 6A cabling terminations at the specified locations shall be mounted on the appropriate faceplates or surface mount boxes as specified in this document.
4. All INSIDE Category 6A cabling shall be BLUE in color and shall be either General (part number 7133849 for riser cabling or part number 7133849 for plenum cabling) or Panduit cabling (part number PUR6A04BU-UG for riser cabling and/or PUP6004BU-UY for plenum cabling).
5. All OUTSIDE Category 6A cabling shall be BLACK in color.
6. Vendor shall provide ONE (1) 8-foot Category 6 patch cable (WHITE color) for each Category 6 cable drop that is specified under the “– **NEW COPPER CABLING INSTALLATION SCOPE OF WORK** –“ section.

#### **- CATEGORY 5 CABLING SPECIFICATIONS -**

1. Category 5 telephone station cabling shall be WHITE in color and use either General (part number 5133255E for riser cabling and/or part number 5131361E for plenum cabling) or Panduit (part number PUR5504WH-UY for riser cabling and/or part number PUP5504WH-UY for plenum cabling) cabling
2. Category 5 telephone station cabling at the IDF shall be terminated to 66 type telephone blocks mounted on Allen Tel Blue Backboard inside the NetShelter AR3100 cabinet with appropriately sized Allen Tel White Mushroom boards above and below the Allen Tel Blue Backboard.
3. Each Category 5 telephone cable at the workstation shall be terminated in the following manner
  - a. Blue and Orange pairs shall be terminated to one (1) WHITE RJ-11 Panduit Mini-Com jacks (part number CJ64WHY)
  - b. Green and Brown pairs shall be terminated to one (1) WHITE RJ-11 Panduit Mini-Com jacks (part number CJ64WHY)
4. All Category 5 telephone station cabling terminations at the specified locations shall be mounted on the appropriate faceplates as specified in this document.



## ADDENDUM 3 – 470-DW1-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT Fiber & Copper Cabling Specifications (470-DW1-16) E-Rate Year 19 (2016)

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#### **- FEEDER CABLING SPECIFICATIONS -**

1. Vendor shall install fused building entrance terminals to terminate both ends of the 25-pair feeder cables. The new fused building entrance terminals MUST match the existing installed terminals in the MDF/IDF.
2. Vendor shall install the appropriately sized Allen Tel White Mushroom boards above and below each fused building entrance terminal.
3. Vendor shall properly ground and/or bond all racks, cabinets, and fused protectors located in the MDF and IDF to the nearest earth ground.
4. **NO** 1000' spool of cross connect, one pair, 24 AWG, WHITE/BLUE, twisted pair cabling to be mounted at the MDF and each IDF.
5. **NO** 25-pair RJ-21 cable with RJ-21 MALE connector shall be installed inside the MDF. The RJ-21 cable shall run between the voice gateway and the 66-block that connects to the telephone wiring closet.

#### **- COPPER CABLING TESTING, CERTIFICATION, & DOCUMENTATION -**

1. All Category 6/6A cabling shall be tested and cleared of all defects.
2. Category 6/6A cabling installations shall be tested and certified to meet TIA Category 6/6A per TIA/EIA-568-B.2-1 (Addendum #1 to TIA/EIA-568B.2).
3. Category 6/6A cabling installations shall be tested for wiremap, length, propagation delay, delay skew, DC loop resistance, insertion loss (IL), return loss (RL), NEXT, PSNEXT, ACR, PSACR, ELFEXT and PSELFEXT.
4. Soft and hard copy of the copper test results shall be provided to GUSD upon completion of the job.
5. All Category 6/6A cabling shall be labeled to easily identify location and port number.
6. The vendor shall update a copy of the site drawing with information showing the locations of the DATA cable terminations and station labels. The updated document shall be posted at the MDF/IDF and provided to GUSD in hardcopy and softcopy. GUSD shall provide the vendor will a base drawing of the site in Visio or CAD format.
7. The customer reserves the right to have a representative present during all or a portion of the testing process. If the customer elects to be present during testing, test results will only be acceptable when conducted in the presence of the customer.

## ADDENDUM 3 – 470-DW1A-16

McSWAIN UNION ELEMENTARY SCHOOL DISTRICT  
**McSwain Union Elementary School East Campus  
Fiber Cabling Scope of Work (470-DW1A-16)  
E-Rate Year 19 (2016)**

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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**- CONTINGENCY COST –**

Vendor shall include a contingency for this cabling project 470-DW1A-16. The contingency shall be **10% of the total actual cost of the project**. The contingency shall be stated as a separate line item in the quotation. If work is needed to complete the project, it will be charged on a Time and Material basis. Funds remaining in the contingency account at the end of the project will be returned to the McSwain Union Elementary School District

**- CABINETS, RACKS, & ACCESSORIES –**

1. Black Chatsworth 7' aluminum 2-post relay racks (part number 55053-703) shall be installed in the following locations
  - a. MDF – ONE (1) unit.
2. 24”W x 24”D x 48”H BLACK wall mounted enclosure (WME) (part number E2WM482424PB) shall be installed in the following locations
  - a. Women’s Locker Office Gym IDF – ONE (1) unit

# ADDENDUM 3 – 470-DW1A-16

## McSWAIN UNION ELEMENTARY SCHOOL DISTRICT McSwain Union Elementary School East Campus Fiber Cabling Scope of Work (470-DW1A-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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### **- FIBER CABLING INSTALLATION SCOPE OF WORK -**

1. Fiber to be pulled at the following locations:
  - a. 12-strand (6-pair) single mode shall be pulled from the MDF to Room 9 IDF.
  - b. 12-strand (6-pair) single mode shall be pulled from the MDF to Room 5 IDF
  - c. 12-strand (6-pair) single mode shall be pulled from the MDF to Room 1 IDF.
  - d. 12-strand (6-pair) single mode shall be pulled from the MDF to the IDF next to the Board Room.
  - e. 12-strand (6-pair) single mode shall be pulled from the MDF to Room P16 IDF.
  - f. 12-strand (6-pair) single mode shall be pulled from the MDF to Gymnasium IDF.
  - g. 12-strand (6-pair) single mode shall be pulled from the MDF to IDF between Room 21 & 22.
  - h. 12-strand (6-pair) single mode shall be pulled from the MDF to Room 13 IDF.
  - i. 12-strand (6-pair) single mode shall be pulled from the MDF to Room 17 IDF.

### **- FIBER PATCH CABLES -**

1. **108** – 2m SC-LC duplex 9um single mode fiber patch cords.

## ADDENDUM 3 – 470-DW1B-16

McSWAIN UNION ELEMENTARY SCHOOL DISTRICT  
**McSwain Union Elementary School East Campus**  
**Copper Cabling Scope of Work (470-DW1B-16)**  
**E-Rate Year 19 (2016)**

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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**- CONTINGENCY COST –**

Vendor shall include a contingency for this cabling project 470-DW1B-16. The contingency shall be **10% of the total actual cost of the project**. The contingency shall be stated as a separate line item in the quotation. If work is needed to complete the project, it will be charged on a Time and Material basis. Funds remaining in the contingency account at the end of the project will be returned to the McSwain Union Elementary School District

**- CONDUIT INSTALLATION SCOPE OF WORK –**

1. Where required, 2” conduit sleeves to be placed through any firewalls or existing walls located between rooms to allow the cabling to be pulled back to the IDF located within the building. Fire resistant material shall be used to insulate around the 2” conduit and in the remaining air space within the conduit to plug the holes.

Specifically –

- a. **Sufficient quantities** of 2” seal tight flex conduit sleeve(s) shall be installed at the following locations to enclose the copper cabling
  - i. between classroom P19 and classroom P18
  - ii. between classroom P18 and classroom P17
  - iii. between classroom P17 and classroom P16
  - iv. between classroom P16 and classroom P15
  - v. between classroom P15 and classroom P14

# ADDENDUM 3 – 470-DW1B-16

## McSWAIN UNION ELEMENTARY SCHOOL DISTRICT McSwain Union Elementary School East Campus Copper Cabling Scope of Work (470-DW1B-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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### **- COPPER CABLING INSTALLATION SCOPE OF WORK -**

#### **I. McSWAIN UNION ELEMENTARY SCHOOL EAST CAMPUS**

1. Classroom 9 to **Classroom 9 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cable total
2. Classroom 10 to **Classroom 9 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
3. Classroom 11 to **Classroom 9 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
4. Classroom 12 to **Classroom 9 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
5. Classroom 5 to **Classroom 5 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
6. Classroom 6 to **Classroom 5 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
7. Classroom 7 to **Classroom 5 (IDF)**

## ADDENDUM 3 – 470-DW1B-16

McSWAIN UNION ELEMENTARY SCHOOL DISTRICT  
**McSwain Union Elementary School East Campus**  
**Copper Cabling Scope of Work (470-DW1B-16)**  
**E-Rate Year 19 (2016)**

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cable total
- 8. Classroom 8 to **Classroom 5 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
- 9. Classroom K1 to **Classroom 5 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – **Category 6A Outside Plant (OSP) cables** per location for DATA
      - a. 2 – **Category 6A Outside Plant (OSP) cables** total
- 10. Classroom K2 to **Classroom 5 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – **Category 6A Outside Plant (OSP) cables** per location for DATA
      - a. 2 – **Category 6A Outside Plant (OSP) cables** total
- 11. Classroom 1 to **Classroom 1 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
- 12. Classroom 2 to **Classroom 1 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
- 13. Classroom 3 to **Classroom 1 (IDF)**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
- 14. Classroom 4 to Classroom **1 (IDF)**
  - A. 1 – Location at the ceiling

## ADDENDUM 3 – 470-DW1B-16

McSWAIN UNION ELEMENTARY SCHOOL DISTRICT  
**McSwain Union Elementary School East Campus**  
**Copper Cabling Scope of Work (470-DW1B-16)**  
**E-Rate Year 19 (2016)**

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- i. 2 – Category 6A cables per location for DATA
  - a. 2 – Category 6A cables total

15. Classroom P6 to **Classroom 1 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

16. Classroom P14 to **Classroom P16 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

17. Classroom P15 to **Classroom P16 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

18. Classroom P16 to Classroom **P16 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

19. Classroom P17 to Classroom **P16 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

20. Classroom P18 to Classroom **P16 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

21. Classroom P19 to Classroom **P16 (IDF)**

- A. 1 – Location at the ceiling

## ADDENDUM 3 – 470-DW1B-16

McSWAIN UNION ELEMENTARY SCHOOL DISTRICT  
**McSwain Union Elementary School East Campus**  
**Copper Cabling Scope of Work (470-DW1B-16)**  
**E-Rate Year 19 (2016)**

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
  
  - 22. Classroom 14 to **Classroom 16 (IDF)**
    - A. 1 – Location at the ceiling
      - i. 2 – Category 6A cables per location for DATA
        - a. 2 – Category 6A cables total
  
  - 23. Classroom 15 to **Classroom 16 (IDF)**
    - A. 1 – Location at the ceiling
      - i. 2 – Category 6A cables per location for DATA
        - a. 2 – Category 6A cables total
  
  - 24. Classroom 17 to **Classroom 16 (IDF)**
    - A. 1 – Location at the ceiling
      - i. 2 – Category 6A cables per location for DATA
        - a. 2 – Category 6A cables total
  
  - 25. Classroom 18 to **Classroom 16 (IDF)**
    - A. 1 – Location at the ceiling
      - i. 2 – Category 6A cables per location for DATA
        - a. 2 – Category 6A cables total
  
  - 26. Classroom 19 to **Classroom 16 (IDF)**
    - A. 1 – Location at the ceiling
      - i. 2 – Category 6A cables per location for DATA
        - a. 2 – Category 6A cables total
  
  - 27. Computer Lab to **Computer Lab (IDF)**
    - A. 1 – Location at the ceiling
      - i. 2 – Category 6A cables per location for DATA
        - a. 2 – Category 6A cables total
  
  - 28. Library to **Computer Lab (IDF)**
    - A. 2 – Locations at the ceiling
-



# ADDENDUM 3 – 470-DW1B-16

## McSWAIN UNION ELEMENTARY SCHOOL DISTRICT McSwain Union Elementary School East Campus Copper Cabling Scope of Work (470-DW1B-16) E-Rate Year 19 (2016)

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- i. 2 – Category 6A cables per location for DATA
  - a. 4 – Category 6A cables total

29. Gymnasium to **Gymnasium (IDF)**

- A. 2 – Locations at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 4 – Category 6A cables total

30. Classroom 22 to **Classroom 22 (IDF)**

- A. 1 – Locations at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

31. Classroom 21 to **Classroom 22 (IDF)**

- A. 1 – Locations at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

32. Classroom 13 to **Classroom 13 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

33. Classroom 14 to **Classroom 13 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

34. Classroom 15 to **Classroom 13 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

35. Classroom 16 to **Classroom 13 (IDF)**

- A. 1 – Location at the ceiling

## ADDENDUM 3 – 470-DW1B-16

McSWAIN UNION ELEMENTARY SCHOOL DISTRICT  
**McSwain Union Elementary School East Campus**  
**Copper Cabling Scope of Work (470-DW1B-16)**  
**E-Rate Year 19 (2016)**

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- i. 2 – Category 6A cables per location for DATA
  - a. 2 – Category 6A cables total

36. Classroom 17 to **Classroom 17 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

37. Classroom 18 to **Classroom 17 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

38. Classroom 19 to **Classroom 17 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

39. Classroom 20 to **Classroom 17 (IDF)**

- A. 1 – Location at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 2 – Category 6A cables total

40. Cafeteria Building to **Classroom 13 (IDF)**

- A. 2 – Locations at the ceiling
  - i. 2 – Category 6A cables per location for DATA
    - a. 4 – Category 6A cables total

41. OUTSIDE WIRELESS

- A. 6 – Locations throughout school site
  - i. 2 – Category 6A cables per location for DATA
    - a. 12 – Category 6A cables total

- B. Install 5 Terrawave Enclosures per specifications stated in - **RACEWAY & CABLING ACCESSORIES FOR OUTSIDE WIRELESS** – section

## ADDENDUM 3 – 470-DW1B-16

McSWAIN UNION ELEMENTARY SCHOOL DISTRICT  
**McSwain Union Elementary School East Campus**  
**Copper Cabling Scope of Work (470-DW1B-16)**  
**E-Rate Year 19 (2016)**

**Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”**

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- i. Enclosures are supplied by customer

# ADDENDUM 3 – 470-DW1C-16

## McSWAIN UNION ELEMENTARY SCHOOL DISTRICT McSwain Union Elementary School West Campus Fiber Cabling Scope of Work (470-DW1C-16)

### PROVIDE SEPARATE QUOTATION

Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”

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#### - CONTINGENCY COST –

Vendor shall include a contingency for this cabling project 470-DW1C-16. The contingency shall be **10% of the total actual cost of the project**. The contingency shall be stated as a separate line item in the quotation. If work is needed to complete the project, it will be charged on a Time and Material basis. Funds remaining in the contingency account at the end of the project will be returned to the McSwain Union Elementary School District

#### - FIBER CABLING INSTALLATION SCOPE OF WORK –

1. Fiber to be pulled at the following locations:
  - a. 12-strand (6-pair) single mode shall be pulled from the MDF to the IDF between Room A2 and Room A3.
  - b. 12-strand (6-pair) single mode shall be pulled from the MDF to the IDF between Room B1 and Room B2.
  - c. 12-strand (6-pair) single mode shall be pulled from the MDF to the IDF between Room C1 and Room C2.
  - d. 12-strand (6-pair) single mode shall be pulled from the MDF to Room D4 (Computer Lab) IDF.
  - e. 12-strand (6-pair) single mode shall be pulled from the MDF to Cafeteria IDF.

#### - FIBER PATCH CABLES –

1. **60** – 2m SC-LC duplex 9um single mode fiber patch cords

# ADDENDUM 3 – 470-DW1D-16

## McSWAIN UNION ELEMENTARY SCHOOL DISTRICT McSwain Union Elementary School West Campus Copper Cabling Scope of Work (470-DW1D-16)

### PROVIDE SEPARATE QUOTATION

Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”

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#### - CONTINGENCY COST -

Vendor shall include a contingency for this cabling project 470-DW1D-16. The contingency shall be **10% of the total actual cost of the project**. The contingency shall be stated as a separate line item in the quotation. If work is needed to complete the project, it will be charged on a Time and Material basis. Funds remaining in the contingency account at the end of the project will be returned to the McSwain Union Elementary School District

#### - COPPER CABLING INSTALLATION SCOPE OF WORK -

##### I. McSWAIN UNION ELEMENTARY SCHOOL WEST CAMPUS

1. Library to MDF
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
2. Classroom A2 to the IDF **between Room A2 & Room A3**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
3. Classroom A3 to the IDF **between Room A2 & Room A3**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
4. Classroom A1 to the IDF **between Room A2 & Room A3**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total

# ADDENDUM 3 – 470-DW1D-16

## McSWAIN UNION ELEMENTARY SCHOOL DISTRICT McSwain Union Elementary School West Campus Copper Cabling Scope of Work (470-DW1D-16)

### PROVIDE SEPARATE QUOTATION

Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”

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5. Classroom A4 to the IDF **between Room A2 & Room A3**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
  
6. Classroom A5 to the IDF **between Room A2 & Room A3**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
  
7. Classroom A6 to the IDF **between Room A2 & Room A3**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
  
8. Classroom B1 to the IDF **between Room B1 & Room B2**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
  
9. Classroom B2 to the IDF **between Room B1 & Room B2**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
  
10. Classroom B3 to the IDF **between Room B1 & Room B2**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total

# ADDENDUM 3 – 470-DW1D-16

## McSWAIN UNION ELEMENTARY SCHOOL DISTRICT McSwain Union Elementary School West Campus Copper Cabling Scope of Work (470-DW1D-16)

### PROVIDE SEPARATE QUOTATION

Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”

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11. Classroom B4 to the IDF **between Room B1 & Room B2**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
  
12. Classroom C1 to the IDF **between Room C1 & Room C2**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
  
13. Classroom C2 to the IDF **between Room C1 & Room C2**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
  
14. Classroom C3 to the IDF **between Room C1 & Room C2**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
  
15. Classroom C4 to the IDF **between Room C1 & Room C2**
  - A. 1 – Location at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 2 – Category 6A cables total
  
16. Cafeteria to the **Cafeteria IDF**
  - A. 2 – Locations at the ceiling
    - i. 2 – Category 6A cables per location for DATA
      - a. 4 – Category 6A cables total

## ADDENDUM 3 – 470-DW1D-16

McSWAIN UNION ELEMENTARY SCHOOL DISTRICT  
**McSwain Union Elementary School West Campus  
Copper Cabling Scope of Work (470-DW1D-16)**

### PROVIDE SEPARATE QUOTATION

Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”

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#### 17. OUTSIDE WIRELESS

- A. 6 – Locations throughout school site
  - i. 2 – Category 6A cables per location for DATA
    - a. 12 – Category 6A cables total
  
- B. Install 5 Terrawave Enclosures per specifications stated in - **RACEWAY & CABLING ACCESSORIES FOR OUTSIDE WIRELESS** – section
  - i. Enclosures are supplied by customer



## ADDENDUM 3 – 470-DW1E-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT McSwain Union Elementary School East Campus – District Board Room Fiber Cabling Scope of Work (470-DW1E-16)

#### PROVIDE SEPARATE QUOTATION

Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”

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#### - CONTINGENCY COST –

Vendor shall include a contingency for this cabling project 470-DW1E-16. The contingency shall be **10% of the total actual cost of the project**. The contingency shall be stated as a separate line item in the quotation. If work is needed to complete the project, it will be charged on a Time and Material basis. Funds remaining in the contingency account at the end of the project will be returned to the McSwain Union Elementary School District

#### - FIBER CABLING INSTALLATION SCOPE OF WORK –

1. Fiber to be pulled at the following locations:
  - a. 12-strand (6-pair) single mode shall be pulled from the Board Room to the MDF.

#### - FIBER PATCH CABLES –

1. **12** – 2m SC-LC duplex 9um single mode fiber patch cords

#### - Labor –

1. Relocate IDF Cabinet from P16 to new District Office building and re-terminate existing data cables
2. Gym IDF re-terminate cooper data cables from existing IDF location to new WME.

## ADDENDUM 3 – 470-DW1F-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT McSwain Union Elementary School East Campus - MOT Fiber Cabling Scope of Work (470-DW1F-16)

#### PROVIDE SEPARATE QUOTATION

Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”

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#### - CONTINGENCY COST –

Vendor shall include a contingency for this cabling project 470-DW1F-16. The contingency shall be **10% of the total actual cost of the project**. The contingency shall be stated as a separate line item in the quotation. If work is needed to complete the project, it will be charged on a Time and Material basis. Funds remaining in the contingency account at the end of the project will be returned to the McSwain Union Elementary School District

#### - FIBER CABLING INSTALLATION SCOPE OF WORK –

1. Fiber to be pulled at the following locations:
  - a. 12-strand (6-pair) single mode shall be pulled from the MDF to the MOT IDF.

#### - FIBER PATCH CABLES –

1. **12** – 2m SC-LC duplex 9um single mode fiber patch cords

## ADDENDUM 3 – 470-DW1G-16

### McSWAIN UNION ELEMENTARY SCHOOL DISTRICT McSwain Union Elementary School West Campus Fiber Cabling Scope of Work (470-DW1G-16)

#### PROVIDE SEPARATE QUOTATION – NON E-RATE ELIGIBLE

Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section “APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR “FUNCTIONALLY EQUIVALENT” ITEMS” of the RFP for guidelines on “FUNCTIONAL EQUIVALENT”

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#### - CONTINGENCY COST –

Vendor shall include a contingency for this cabling project 470-DW1G-16. The contingency shall be **10% of the total actual cost of the project**. The contingency shall be stated as a separate line item in the quotation. If work is needed to complete the project, it will be charged on a Time and Material basis. Funds remaining in the contingency account at the end of the project will be returned to the McSwain Union Elementary School District

#### - FIBER CABLING INSTALLATION SCOPE OF WORK –

1. Fiber to be pulled at the following locations:
  - a. 72-strand (36-pair) single mode shall be pulled from the MDF in the West Campus to the MDF in the East Campus.

#### - FIBER PATCH CABLES –

1. 72 – 2m SC-LC duplex 9um single mode fiber patch cords

# **ADDENDUM 4**

**BID NUMBER: MCSW-E-RATE 2016-01**

**BID PACKAGE TITLE: MCSWAIN UNION ELEMENTARY SCHOOL DISTRICT E-RATE YEAR 2016 REQUEST FOR PROPOSAL**

**ADDENDUM DESCRIPTION: UPDATES TO MCSW E-RATE YEAR 2016 NETWORK EQUIPMENT SPECIFICATIONS (470-NW1x-16)**

**The vendors shall submit ALL pages of ADDENDUM 4 with the bid response**

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The Wired/Wireless network equipment list that is listed on this addendum shall **REPLACE** the documents that were included in the McSwain Union Elementary School District E-Rate Year 2016 RFP, and/or any addenda that were distributed at the first session of the Bidders Meeting that was held on December 7, 2016 at the McSwain Union Elementary School District.

All other issues that were discussed, stipulated, and agreed upon during the first session of the Bidders Meeting that was held on December 7, 2016 at the McSwain Union Elementary School District, but not stated in this addendum, shall remain in full effect.

Vendors who are bidding for the McSwain Union Elementary School District E-Rate Year 2016 RFP Wired/Wireless Network Equipment shall submit their bid based on the equipment list that is included in this addendum.

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**All other bidding/contract and construction drawing documents, stipulations, dates and times remain unchanged, in full effect and by reference become a part of this addendum.**

### **SPECIAL NOTE**

**It is the responsibility of each Bidder to acknowledge all addenda by signing below and submitting a copy of each addendum with their respective bid.**

**I HAVE READ AND UNDERSTOOD ALL PAGES OF ADDENDUM 4 OF THE ABOVE BID: \_\_\_\_\_**

**ADDENDUM 4**

**MCSWAIN UNION ELEMENTARY SCHOOL DISTRICT (MCSW)**  
**E-Rate Year 2016 Internal Connections**  
**Wired/Wireless Network Infrastructure Equipment - East Campus**  
**ADDENDUM 470-NW1A-16**

Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section "APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR "FUNCTIONALLY EQUIVALENT" ITEMS" of the RFP for guidelines on "FUNCTIONAL EQUIVALENT"

Item	QTY	Part Number	Description	Proposed Functional Equivalent *	Unit Price Bid	Total Price Bid	%Discount
<b>Switches</b>							
1	1	WS-C4500X-40X-ES	Catalyst 4500-X 40 Port 10G Ent. Services, Frt-to-Bk, No P/S				
1	1	EX4600-40F-AFO	EX4600, 24 SFP+/SFP ports, 4 QSFP+ ports, 2 expansion slots, redundant fans, 2 AC power supplies, front to back airflow	X			
1	2	EX4600-EM-8F	8 port SFP+/SFP expansion module for EX4600, QFX5100-24Q, QFX5100-24Q-AA	X			
2	1	C4KX-PWR-750AC-R	Catalyst 4500-X 750W AC Front-to-Back Cooling Power Supply				
3	12	WS-C2960X-48LPD-L	Catalyst 2960-X 48 GigE PoE 370W, 2 x 10G SFP+ LAN Base				
3	12	EX3300-48P	EX3300, 48-port 10/100/1000BaseT (48-ports PoE+) with 4 SFP+ 1/10G uplink ports (optics not included)	X			
<b>Optics (SFP/SFP+)</b>							
4	26	SFP-10G-LR=	10GBASE-LR SFP Module				
4	24	EX-SFP-10GE-SR	SFP+ 10GBase-SR 10 Gigabit Ethernet Optics, 8SONm for up to 300m transmission on MMF	X			
5	14	GLC-T=	1000BASE-T SFP				
5	14	EX-SFP-10GE-T	SFP 1000Base-T 10/100/1000 Copper Transceiver Module for up to 100m transmission on Cat5	X			
6	4	SFP-H10GB-CU3M=	10GBASE-CU SFP+ Cable 3 Meter, passive				
6	4	EX-SFP-10GE-DAC-3M	SFP+ 10 Gigabit Ethernet Direct Attach Copper (twinax copper cable) 3m	X			
<b>Wireless Controller</b>							
7	1	AIR-CT5520-50-K9	Cisco 5520 Wireless Controller supporting 50 access points				
7	1	P01-S124-US00	SmartZone 100 with 2x10GigE and 4 GigE	X			
2		902-0190-0000	10GBASE-SR SFP+ optical transceiver module for SmartZone 100				
7	46	S41-S104-1000	SUP SZ100 W 4GIG1 YEAR	X			
<b>Wireless Access Points</b>							
8	5	AIR-CAP3702E-A-K9	802.11ac Ctrlr AP 4x4:3SS w/CleanAir; Ext Ant: A Reg Domain				
8	5	901-T300-US01	ZoneFlex T300, omni, outdoor access point, 802.11ac 2x2:2 internal BeamFlex+, dual band concurrent, one ethernet port, PoE input, includes mounting bracket and one year warranty. Does not include PoE injector.	X			
4	24	901-R710-US00	R710 Dual Band 802.11ac 4x4:4US model Wa	X			
<b>Enclosures</b>							
9	5	12106C6004H00	TerraWave 12x10x6 Polycarbonate Enclosure - network device enclosure				
<b>UPS</b>							
10	1	SRT10KRMXLT	APC Smart-UPS RT 10000VA Rack Tower				
11	2	SRT192RMBP2	APC Smart-UPS RT 192V RM Battery Pack				
12	11	SMX1500RM2U	APC Smart-UPS X 1500VA Rack/Tower LCD 120V				
<b>BD) for each device/component as separate line items.</b>							

	<b>Total Equipment</b>			
	<b>Sales Tax</b>			
	<b>Shipping</b>			
	<b>Sales Tax</b>			
	<b>Total Project</b>			

**ADDENDUM 4**

**MCSWAIN UNION ELEMENTARY SCHOOL DISTRICT (MCSW)**

E-Rate Year 2016 Internal Connections

Wired/Wireless Network Infrastructure Equipment - West Campus

ADDENDUM 470-NW1B-16

Due to E-Rate bidding rules, we will accept bids that specify items / components that are FUNCTIONAL EQUIVALENT to the part numbers listed in this document. Please refer to the section "APPROVAL OF SUBSTITUTIONS AND ALTERNATIVES FOR "FUNCTIONALLY EQUIVALENT" ITEMS" of the RFP for guidelines on "FUNCTIONAL EQUIVALENT"

Item	QTY	Part Number	Description	Proposed Functional Equivalent *	Unit Price Bid	Total Price Bid	%Discount
<b>Switches</b>							
1	6	WS-C2960X-48LPD-L	Catalyst 2960-X 48 GigE PoE 370W, 2 x 10G SFP+ LAN Base				
1	6	EX3300-48P	EX3300, 48-port 10/100/1000BaseT (48-ports PoE+) with 4 SFP+ 1/10G uplink ports (optics not included)	X			
1	6	SVC-ND-EX3300-48P	Juniper Care Next Day Support for EX3300-48P	X			
<b>Optics (SFP/SFP+)</b>							
2	12	SFP-10G-LR=	10GBASE-LR SFP Module				
2	12	EX-SFP-IOGE-SR	SFP+ IOGBase-SR 10 Gigabit Ethernet Optics, 8SONm for up to 300m transmission on MMF	X			
3	7	GLC-T=	1000BASE-T SFP				
3	7	EX-SFP-IGE-T	SFP 1000Base-T 10/100/1000 Copper Transceiver Module for up to 100m transmission on Cat5	X			
<b>Wireless Access Points &amp; Licenses</b>							
4	25	AIR-CAP3702I-A-K9	802.11ac Ctrlr AP 4x4:3SS w/CleanAir; Int Ant; A Reg Domain				
4	12	901-R710-USOO	R710 Dual Band 802.11ac 4x4:4US model Wa	X			
5	35	LIC-CT5520-1A	WAP Licenses				
5	46	L09-0001-SGOO	AP UC UPGRADE FOR SZIOO ANDVSCG -1 AP	X			
6	5	AIR-CAP3702E-A-K9	802.11ac Ctrlr AP 4x4:3SS w/CleanAir; Ext Ant; A Reg Domain				
6	5	901-T300-US01	ZoneFlex T300, omni, outdoor access point, 802.11ac 2x2:2 internal BeamFlex+, dual band concurrent, one ethernet port, PoE input, includes mounting bracket and one year warranty. Does not include PoE injector.	X			
<b>Enclosures</b>							
7	5	12106C6004HOO	TerraWave 12x10x6 Polycarbonate Enclosure - network device enclosure				
<b>UPS</b>							
8	1	SMX2000RMLV2U	APC Smart-UPS X 2000VA Rack/Tower LCD 100-127V				
9	2	SMX120RMBP2U	APC Smart-UPS X 120V External Battery Pack Rack/Tower				
10	5	SMX1500RM2U	APC Smart-UPS X 1500VA Rack/Tower LCD 120V				
<b>BD) for each device/component as separate line items.</b>							

	<b>Total Equipment</b>						
	<b>Sales Tax</b>						
	<b>Shipping</b>						
	<b>Sales Tax</b>						
	<b>Total Project</b>						