

<b>GOVERNMENT OF THE DISTRICT OF COLUMBIA</b> <b>TASK ORDER/DELIVERY ORDER FOR SERVICES</b> <b>OFFEROR TO COMPLETE BLOCKS 18 &amp; 29</b>				1. REQUISITION NUMBER  <b>RK149046</b>		PAGE  <b>1 of 30</b>	
2. TASK ORDER AGREEMENT NO.  <b>CW81657</b>		3. Award/Effective Date  <b>See Block 30c.</b>		4. CONTRACT NUMBER  <b>47QTCK18D0001</b>		5. SOLICITATION NUMBER  -----	
7. FOR SOLICITATION INFORMATION CONTACT Email: <b>georgette.johnson@dc.gov</b>		A. NAME  <b>Georgette Johnson</b>		B. TELEPHONE (No Collect Calls)  <b>202-727-1104</b>		8. OFFER DUE DATE:  -----	
9. ISSUED BY  <b>Office of Contracting and Procurement  Information Technology Group  441 4<sup>TH</sup> Street, N.W., Suite 330 South  Washington, D.C. 20001</b>			10. THIS ACQUISITION IS  <input type="checkbox"/> UNRESTRICTED <input type="checkbox"/> SET ASIDE %FOR <input type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> SMALL DISADV. BUS. <input checked="" type="checkbox"/> DCSS  SIC: SIZE STANDARD:		11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED <input checked="" type="checkbox"/> N/A		12. PAYMENT DISCOUNT TERMS  <b>Net 30 days</b>
					<input type="checkbox"/> 13. RESERVED		
					14. METHOD OF SOLICITATION  <input checked="" type="checkbox"/> RFTOP <input type="checkbox"/> RFQ <input type="checkbox"/> IFB <input type="checkbox"/> RFP <input type="checkbox"/> 2-STEP		
5. CONTRACTOR / OFFEROR  <b>Science Applications International Corporation  (SAIC)  12010 Sunset Hills Road  Reston, VA 20190</b>			16. PAYMENT WILL BE MADE BY CODE  <b>Office of the Chief Technology Officer/ Accounts Payable  200 I Street, S.E.,  Washington, D.C. 20003  www.vendorportal.dc.gov</b>				
15A DUNS NO.      15B TAX ID NO.			17. DELIVER TO <b>Office of the Chief Technology Officer  Attn: Tige Johnson  200 I Street, S.E., 5th Floor  Washington, D.C. 20003</b>				
18A. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER <input type="checkbox"/>			18B. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 16 UNLESS BLOCK BELOW IS CHECKED  <input type="checkbox"/> SEE ADDENDUM				
19 ITEM NO.	20 SCHEDULE OF SUPPLIES/SERVICES			21 QUANTITY	22 UNIT	23 UNIT PRICE	24 AMOUNT
0001	<b>MAN Based Telephony &amp; Data Services: Fiber and  Cable Installation, Wireless Installation, Electrical and  Telecommunications and Support Services</b>			1	Lot	-----	<b>\$900,000.00 NTE</b>
25. ACCOUNTING AND APPROPRIATION DATA  <b>PURCHASE ORDER NO.</b>				26. TOTAL AWARD (FOR GOVT. USE ONLY)  <b>\$900,000.00 NTE</b>			
27. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN ONE COPY TO THE ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL PAGES SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN. THIS ORDER IS ISSUED SUBJECT TO THE TERMS AND CONDITIONS OF THE DC SUPPLY SCHEDULE CONTRACT, FEDERAL SUPPLY SCHEDULE CONTRACT OR COOPERATIVE AGREEMENT IDENTIFIED IN BLOCK 4.				28. THE FOLLOWING DOCUMENTS ARE INCORPORATED BY REFERENCE INTO THIS TASK ORDER IN THE FOLLOWING PRIORITY: (1) CONTRACTOR'S Technical proposal THIS ORDER IS ISSUED SUBJECT TO THE TERMS AND CONDITIONS OF THE DC SUPPLY SCHEDULE CONTRACT, FEDERAL SUPPLY SCHEDULE CONTRACT OR COOPERATIVE AGREEMENT IDENTIFIED IN BLOCK 4.			
29A. SIGNATURE OF OFFEROR /CONTRACTOR Digitally signed by Ramona L <b>Ramona L Wilson</b> Wilson Date: 2020.04.21 12:33:52 -04'00'				30A. DISTRICT OF COLUMBIA (SIGNATURE OF CONTRACTING OFFICER)			
29B. NAME AND TITLE OF SIGNER (TYPE OR PRINT)  <b>Ramona L. Wilson, Contracts Principal</b>		29C. DATE SIGNED  <b>4/21/2020</b>		30B. NAME OF CONTRACTING OFFICER (TYPE OR PRINT)  <b>Chris Yi  Contracting Officer</b>		30C. DATE SIGNED	

## **1. Services Required**

The Office of Contracting and Procurement, on behalf, of the Office of the Chief Technology Officer (OCTO) as referenced within this document as the “District”, seeks a Contractor to provide services related to the construction, installation, maintenance, repair, improvement and expansion of OCTO’s extensive citywide fiber optic network. The technical scope of this contract includes the following categories:

1. Fiber and Cable Installation Services
2. Wireless Installations and Support Services
3. Electrical Services
4. Telecommunications Services

## **2. Contract Number**

47QTCK18D0001

## **3. Task Order Number**

CW81657

## **4. Term of Contract**

The period of performance shall be six months from the date of Award.

## **5. Contracting Officer (CO)**

Contracts may be entered into and signed on behalf of the District Government only by Contracting Officers. The name, address and telephone number of the Contracting Officer for this task order is:

Chris Yi  
Office of Contracting and Procurement  
441 4<sup>th</sup> Street N.W., Washington, D.C. 20001  
Telephone: 202.724.5069  
E-mail: [Chris.Yi@dc.gov](mailto:Chris.Yi@dc.gov)

**5.1** The CO is the only person authorized to approve changes in any of the requirements of this contract.

**5.2** The Contractor shall not comply with any order, directive or request that changes or modifies the requirements of this contract, unless issued in writing and signed by the CO.

**5.3** In the event the Contractor effects any change at the instruction or request of any person other than the CO, the change will be considered to have been made without authority and no adjustment

## **6. Contract Administrator (CA)**

The CA is responsible for the technical administration of the contract and advising the Contracting Officer as to the Contractor’s compliance or noncompliance with the contract. In addition, the

CA is responsible for the day-to-day monitoring and supervision of the contract, of ensuring that the work conforms to the requirements of this contract and such other responsibilities and authorities as may be specified in writing by the Contracting Officer. The CA for this task order is:

Tige Johnson  
Office of the Chief Technology Officer  
200 I Street S.E., Washington, D.C. 20003  
Telephone: 202.715. 3753  
E-mail: Tige.Johnson@dc.gov

- 6.1** It is understood and agreed that the CA shall not have the authority to make changes in the specifications/scope of work or terms and conditions of the contract.
- 6.2** Contractor shall be held fully responsible for any changes not authorized in advance, in writing, by the Contracting Officer, may be denied compensation or other relief for any additional work performed that is not so authorized, and may also be required, at no additional cost to the District, to take all corrective action necessitated by reason of the unauthorized changes.

## **7. Invoice Payment**

The District will make payments to the Contractor, upon the submission of proper invoices, at the prices stipulated in this contract, for supplies delivered and accepted or services performed and accepted, less any discounts, allowances or adjustments provided for in this contract.

- 7.1** The District will pay the Contractor on or before the 30th day after receiving a proper invoice from the Contractor.

## **8. Invoice Submittal**

The Contractor shall submit proper invoices on a monthly basis or as otherwise specified in the contract.

- 8.1** The Contractor shall submit payment requests in electronic format through the DC Vendor Portal [www.vendorportal.dc.gov](http://www.vendorportal.dc.gov) by selecting the applicable purchase order number which is listed on the Contractor's profile.
- 8.2** To constitute a proper invoice, the Contractor shall attach to all payment requests the invoice and all supporting documentation or information.

## **9. Ordering**

- 9.1** Any supplies and services to be furnished under this contract must be ordered by issuance of delivery orders or task orders by the CO. Such orders may be issued during the term of this contract.
- 9.2** All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of a conflict between a delivery order or task order and this contract, the contract shall control.

## **10. Attachments**

- 10.1** Attachment A – Statement of Work
- 10.2** Attachment B - Price Schedule & Price List

## **ATTACHMENT A**

### **Statement of Work**

#### **A.1 Scope**

The Office of Contracting and Procurement, on behalf, of the Office of the Chief Technology Officer (OCTO) as referenced within this document as the “District”, seeks a Contractor to provide services related to the construction, installation, maintenance, repair, improvement and expansion of OCTO’s extensive citywide fiber optic network. The technical scope of this contract includes the following categories:

1. Fiber and Cable Installation Services
2. Wireless Installations and Support Services
3. Electrical Services
4. Telecommunications Services

#### **A.2 Applicable Documents**

The following documents and standards which they reference are applicable to this procurement and are hereby incorporated.

<b>Item No.</b>	<b>Document Type</b>	<b>Title</b>	<b>Date</b>
<b>1</b>	<b>Regulations/ Codes</b>	DC Municipal Regulations ( <a href="https://codes.iccsafe.org/content/chapter/9172/?site_type=public">https://codes.iccsafe.org/content/chapter/9172/?site_type=public</a> )	<b>2014</b>
<b>2</b>	<b>Regulations/ Codes</b>	National Electrical Code ( <a href="https://catalog.nfpa.org/NFPA-70-National-Electrical-Code-NEC-2011-Edition-P16597.aspx">https://catalog.nfpa.org/NFPA-70-National-Electrical-Code-NEC-2011-Edition-P16597.aspx</a> )	<b>2011</b>
<b>3</b>	<b>Standards and Best Practices</b>	OCTO-DC-Net Standards and Practices for Communications Environments ( <a href="https://dcnet.dc.gov/publication/dc-net-structured-cabling-standards">https://dcnet.dc.gov/publication/dc-net-structured-cabling-standards</a> )	<b>2019</b>
<b>4</b>	<b>Standards and Best Practices</b>	BICSI IT Systems Installation Methods Manual (ITSIMM) ( <a href="https://www.bicsi.org/education-certification/education-@-bicsi-learning-academy/technical-publications/information-technology-systems-installation-methods">https://www.bicsi.org/education-certification/education-@-bicsi-learning-academy/technical-publications/information-technology-systems-installation-methods</a> )	<b>2019</b>
<b>5</b>	<b>Standards and Best Practices</b>	BICSI Telecommunications Distribution Methods Manual (TDMM) ( <a href="https://www.bicsi.org/education-certification/education-@-bicsi-learning-academy/technical-publications/telecommunications-distribution-methods-manual">https://www.bicsi.org/education-certification/education-@-bicsi-learning-academy/technical-publications/telecommunications-distribution-methods-manual</a> )	<b>2019</b>
<b>6</b>	<b>Standards and Best Practices</b>	BICSI Outside Plant Design Reference Manual ( <a href="https://www.bicsi.org/education-certification/education-@-bicsi-learning-academy/technical-publications/outside-plant-design">https://www.bicsi.org/education-certification/education-@-bicsi-learning-academy/technical-publications/outside-plant-design</a> )	<b>2019</b>

<b>7</b>	<b>Standards and Best Practices</b>	ANSI/BICSI Wireless Local Area Network (WLAN) Systems Design and Implementation Best Practices ( <a href="https://www.bicsi.org/standards/available-standards-store/single-purchase/ansi-bicsi-008-2018">https://www.bicsi.org/standards/available-standards-store/single-purchase/ansi-bicsi-008-2018</a> )	<b>2018</b>
<b>8</b>	<b>Standards and Best Practices</b>	ANSI/BICSI Information and Communication Technology Systems Design and Implementation Best Practices for Educational Institutions and Facilities ( <a href="https://www.bicsi.org/standards/available-standards-store/single-purchase/ansi-bicsi-001-2017">https://www.bicsi.org/standards/available-standards-store/single-purchase/ansi-bicsi-001-2017</a> )	<b>2017</b>

### A.3 Definitions

A.3.1 Catastrophic Incident – Incident that causes failure of DC-Net data, voice, and/or Wireless LAN service at multiple high priority sites (key public safety and core network sites) and/or multiple fiber loops. These may result from severe weather, natural disaster, or human precipitated events.

A.3.2 Emergency Incident – Incident that causes failure of DC-Net data, voice, and/or Wireless LAN service at one or more priority sites.

A.3.3 Standard Business Hours / Business Day – Monday to Friday 8:00 AM to 5:00 PM, excluding District holidays and administrative closings.

A.3.4 Acronyms:

1. AHJ - Authority Having Jurisdiction
2. ANSI - American National Standards Institute
3. ASA - American Standards Association
4. ASTM - American Society for Testing Materials
5. BICSI - Building Industry Consulting Service International
6. CA – Contract Administrator
7. EIA - Electronic Industries Alliance
8. EMI - Electromagnetic Interference
9. EMT - Electrical Metallic Tubing
10. ER – Equipment Room
11. HVAC - Heating Ventilation and Air Conditioning
12. IEEE - Institute of Electrical and Electronic Engineers
13. LAN – Local Area Network
14. NEC - National Electrical Code
15. NEMA - National Electrical Manufacturers Association
16. NESC - National Electrical Safety Code
17. OSHA - Occupational Safety and Health Act
18. OTDR - Optical Time Domain Reflectometry
19. RCDD - Registered Communications Distribution Designer
20. TDMM - BICSI Telecommunications Distribution Methods Manual
21. TIA - Telecommunications Industry Association
22. TC – Telecommunications Closet, also called Intermediate Distribution Frame (IDF)
23. TR – Telecommunications Room, also called Main Distribution Frame (MDF)
24. UL – Underwriters Laboratory
25. UPS – Uninterrupted Power Source
26. WAO – Work Area Outlet
27. WAP – Work Area Protection or Wi-Fi/Wireless Access Point

## **A.4 Background**

DC-Net, a network program managed by OCTO, provides wired and wireless voice, data, and video services to all government entities utilizing a secure, redundant, high capacity fiber optic platform spanning over 700 miles of aerial and underground fiber infrastructure. This state-of-the-art telecommunications network lays the foundation for all next generation government, education, and public safety access to information and communications throughout the nation's capital. As the contract nears termination, OCTO's District is seeking a vendor to support these operations for the next three to six months.

## **A.5 Requirements**

### **A.5.1 Fiber and Cable Installation Services**

**A.5.1.1** The District has approximately 700 Points of Presence (POPs) and more than 700 total miles of optical fiber cable, including the core rings and laterals to sites throughout the District. Fiber is a combination of dedicated District optical fiber (approximately 95%) and leased fiber. Fiber is both underground and aerial. Fiber cable is up to 432 strands, and less than 1% is armored. 85% of fiber is loose tube, and the rest is ribbon. The Contractor shall be capable of installing and extending District's optical fiber network, which includes the core fiber structure, node sites, and physical, transport, optical and switching layer devices. Contractor shall provide all staff and equipment (vehicles, tools, safety systems, test equipment, etc.) necessary to continue the installation of District's Fiber Optic Communications Network. All work shall be to BICSI standards. The Contractor shall be equipped with all necessary tools and devices to properly identify and remove both underground and aerial legacy lead and copper cabling and replace with protective inner duct and fiber cabling of various sizes and sheath counts. Installers will be fully versed in duct "washes", obstruction removals, any and all aspects of splicing technologies, and required testing to ensure connectivity is within loss tolerance performance levels.

**A.5.1.2** The Contractor shall install and extend the District's optical fiber network, which includes the core fiber structure, node sites, and physical, transport, optical and switching layer devices. The Contractor shall provide all staff and equipment (vehicles, tools, safety systems, test equipment, etc.) necessary to continue installation of the District's Fiber Optic Communications Network. The Contractor shall perform all work in accordance with BICSI standards.

**A.5.1.3** The Contractor shall utilize historical construction information, documented within the pricing table presented herein, as a benchmark for anticipated aerial and underground expansion/growth to the District's fiber construction program connecting government and non-profit voice, data, video, and wireless end users.

**A.5.1.4** Existing inventory already on-hand consists of the following:

1. Sumitomo Pure band "0" water peak single mode fiber is used – Max Attenuation .35dB/km at 1310nm and .25dB/km at 1550nm
2. Armored cable is less than 1% of the total fiber
3. Predominantly all cables are dielectric
4. Current fiber deployment by cable size (approximate):  
A. 288 – 5%

- B. 144 - 10%
- C. 96 - 30%
- D. 48 - 45%
- E. 24- 5%
- F. 12-5%
- 5. 85% loose tube/15% Ribbon
- 6. DWDM is used on a portion of the system
- 7. Approximately 40% is underground, and
- 8. Approximately 60% is aerial fiber;
- 9. Armored cable is less than 1% of the total fiber
- 10. Predominantly all cables are dielectric

**A.5.1.5** The Contractor shall perform the following associated functions and provide the following detailed items reference below:

- 1. ISP
- 2. Manhole Survey c) Aerial Placement
- 3. New Conduit Installation
- 4. New Underground Placement
- 5. Obstruction Digs
- 6. Manhole Duct Washes

#### **A.5.1.6 Construction**

**A.5.1.6.1** The Contractor shall perform and provide documentation in accordance with the following Construction-related requirements.

- 1. The Contractor shall only perform work which the District authorizes and issues via Job Order that describes work to be performed in accordance with the contract.
- 2. The Contractor shall notify the Contract Administrator (CA) or assigned Construction Manager immediately upon determining any work to be performed that differs in scope or nature from that indicated in the approved Engineering Work Order.
- 3. The Contractor shall provide transportation of all required labor, vehicles, trailers, tools, and job materials, set-up of traffic control plan, set-up of Work Area Protection, set-up and maintenance of job site, placing of silt fencing or other retaining barriers, shoring, personnel protective equipment, manhole escape equipment, required manhole pumping and disposal of pumped waste, manhole testing and ventilation, and site tear-down and clean-up.
- 4. The Contractor shall perform Construction Traffic Control, which includes provisioning of signs, stands, cones, arrow boards, and Variable Message Sign (VMS) boards.
- 5. All construction shall conform to applicable specifications as referenced in Section C.2.
- 6. The Contractor shall place conduit/inner duct to include proofing and placement of a pull line in each conduit/inner duct and seal all conduit/inner duct ends with duct plugs or other approved sealing materials when placing fiber.
- 7. The Contractor shall provide footage of cable for payment purposes taken from the sheath markings on each end of the cable placed. The Contractor shall record the actual installed footage of cable and its location on the red-lined and as-built drawings.
- 8. The Contractor shall create and submit accurate redline drawings at the time of construction with a separate as-built quantity list, for District approval.



#### **A.5.1.7 Unit Descriptions - OSP & ISP Engineering**

See section 3

##### **A.5.1.7.1 Aerial Design**

1. The District will provide all aerial engineering and design work.
2. The Contractor shall install aerial work in accordance with designs provided by the District.

##### **A.5.1.7.2 Underground Design**

1. The District will provide all underground plant engineering and design work.
2. The Contractor shall install underground work in accordance with designs provided by District.

##### **A.5.1.7.3 Inside Site Design**

1. The District shall provide all inside plant design work.
2. Contractor shall install inside plant work in accordance with designs provided by District.

**A.5.1.7.4 Inside Plant Construction:** The Contractor shall provide the following support services. Specific work to be performed will be based on each individual Job Order. Typical Job Orders shall be organized in the following groups of related effort. These are typical but are not limited on any individual Job Order.

1. Standard Wall Penetration Hole 2½" w/ Fire Stop - Not a core drill
  - A. Installation of water sealant inside hole before placement of conduit or cable,
  - B. Sealing between hole and conduit,
  - C. Finishing of inside wall or floor to match surrounding area.
2. Place Pull Box - All Sizes
  - A. Measurement, cutting, placing, connecting, and attaching of conduit.
3. Place Inner Duct - All Sizes
  - A. Measurement, cutting, routing, placing, connecting, attaching of inner duct from end to end.

**A.5.1.7.5 Conduit Construction:** The Contractor shall provide the following support services. Specific work to be performed will be based on each individual Job Order. Typical Job Orders shall be organized in the following groups of related effort. These are typical but are not limited on any individual Job Order.

1. Conduit placement excavation set-up - under 50'
  - A. Unit 5300 applies when conduit is being placed less than 50 feet in trench feet.
2. Saw cutting - asphalt and concrete
  - A. This applies to the saw cutting of either asphalt and/or concrete and is computed using the linear footage cut.
  - B. EXAMPLES of methods of calculation:
    - i. If cutting a square for a manhole placement, the measurement is the perimeter measurement of the hole opening (4 sides) less the width of any trenches leaving the manhole excavation.

- ii. If cutting a trench, the measurement is the cumulative length of each side of the trench.
- 3. Asphalt and/or concrete removal
  - A. Removal of asphalt and/or concrete and is calculated by cubic feet.
  - B. Removal, loading, and hauling of the removed material and debris from the construction site to a disposal site.
  - C. All equipment and labor required for the removal and transportation is included, e.g. operators, drivers, laborers, backhoes, loaders, trucks, dump trucks, etc.
- 4. Dig/fill straight access pit - 4' x 4' x 4'
  - A. Removal of material other than asphalt and concrete.
  - B. Removal, loading, and hauling, if necessary, of the removed material and debris from the construction site to a disposal site.
  - C. The placing of necessary barricades, reflective tape, safety lights, and any shoring required to meet OSHA or other relevant government agency codes.
  - D. Soil must be compacted to meet City specifications as listed in the referenced specifications.
  - E. All equipment and labor required for the removal and transportation is included, e.g. operators, drivers, laborers, backhoes, loaders, trucks, dump trucks, etc.
  - F. Soil must be compacted to meet City specifications as listed in the referenced specifications.
- 5. Excavation - 0' to 10' depth
  - A. Removal of material other than asphalt and concrete and is calculated by cubic yards.
  - B. Removal, loading, and hauling, if necessary, of the removed material and debris from the construction site to a disposal site.
  - C. All equipment and labor required for the removal and transportation is included, e.g. operators, drivers, laborers, backhoes, loaders, trucks, dump trucks, etc.
  - D. The placing of necessary barricades, reflective tape, safety lights, and any shoring required to meet OSHA or other relevant government agency codes.
  - E. Backfill excavation.
  - F. Soil must be compacted to meet City specifications as listed in the referenced specifications.
- 6. Hand trench and place conduit 36" deep
  - A. Removal of material other than asphalt and concrete and is calculated by trench feet.
  - B. Removal, loading, and hauling, if necessary, of the removed material and debris from the construction site to a disposal site.
  - C. All equipment and labor required for the removal and transportation is included, e.g. operators, drivers, laborers, backhoes, loaders, trucks, dump trucks, etc.
  - D. The placing of necessary barricades, reflective tape, safety lights, and any shoring required to meet OSHA or other relevant government agency codes.
  - E. Backfill excavation.
  - F. Soil must be compacted to meet City specifications as listed in the referenced specifications.
- 7. Rock removal
  - G. When trencher or backhoe is significantly hindered by the presence of solid rock or large boulders
  - H. When agreed to and District provides written approval.

- I. Contractor shall stringently adhere to safety codes, and obtain all necessary special permits.
  - i. UNIT 5317 IS NOT AN ADDER:
    - a. When authorized, this unit replaces the affected unit, e.g. excavation, trenching, hand digging, etc.
  - ii. UNIT 5317 REPLACES:
    - a. The portion of the affected unit which cannot be performed.
    - b. EXAMPLE: If trenching 100' at 36" depth and 18" wide, and
    - c. 10 feet of trench cannot be dug due to rock, the invoice would include 90' of trench and 10' x 3' x 1.5' cubic feet of rock removal.
8. Concrete protective cover over conduit - 6" minimum
  - A. The placement of a minimum of 6" of concrete over a conduit runs to provide physical protection of the conduit and cables during future excavation work.
  - B. Concrete shall also extend at least 6" on either side of the conduit also.
9. Core bore vault/manhole/handhole - up to 6" diameter core
  - A. The core drilling of a hole up to 6" in diameter,
  - B. Installation of water sealant inside the core before placement of conduit,
  - C. Sealing the opening between the concrete and the conduit,
  - D. Restoration of finishing of inside wall or floor to match surrounding area, and
  - E. Clean up of area both inside and out.
  - F. The excavation of a pit on the outside for access may be charged under another unit but may also be included in one of the excavation units.
10. Install 4' x 4' x 4' pre-cast manhole
  - A. Transportation of manhole and other materials to the job site,
  - B. Excavation,
  - C. Placement of fill and leveling material,
  - D. Placement of the manhole,
  - E. Leveling, placement of collars and lid,
  - F. Back filling and compacting of soil to specification,
  - G. Cleanup, and
  - H. Restoration of site.
11. Install pre-cast handhole with pea rock - 24" x 36" x 36"
  - A. Transportation of handhole and other materials to the job site,
  - B. Excavation,
  - C. Placement of fill and leveling material,
  - D. Placement of the handhole,
  - E. Leveling,
  - F. Placement of collars and lid,
  - G. Back filling and compacting of soil to specification,
  - H. Work Area Cleanup
  - I. Restoration of site.
12. Install quartzite handhole with pea rock – 30"x48"x36"deep
  - A. Transportation of handhole and other materials to the job site,
  - B. Excavation,
  - C. Placement of the handhole,
  - D. Leveling,
  - E. Placement of collars and lid,
  - F. Back filling and compacting of soil to specification, viii. Work Area Cleanup
  - G. Restoration of site.
13. Install quartzite handhole with pea rock – 36"x60"x36"deep

- A. Transportation of handhole and other materials to the job site, ii. Excavation,
  - B. Placement of fill and leveling material, iv. Placement of the handhole,
  - C. Leveling,
  - D. Placement of collars and lid,
  - E. Back filling and compacting of soil to specification
  - F. Work Area Cleanup
  - G. Restoration of site.
14. Install 1"- 4" PVC conduit
- A. Transportation of all associated materials to the job site, ii.
  - B. Excavation,
  - C. Placement of fill,
  - D. Placement of the first conduit, v. Placement of spacers,
  - E. Connecting conduit,
  - F. Back filling and compacting of soil to specification
  - G. Cleanup
  - H. Restoration of site
  - I. Placement of duct plugs in all conduit openings
  - J. When connecting the conduit to a manhole, handhole, building, pedestal, or other housing;
    - i. The removal of knockouts,
    - ii. Placement into manhole, handhole, building, pedestal, or other housing, and
    - iii. Proper sealing of opening.
    - iv. Placement of a pull line in the conduit and
    - v. Placement of duct plugs in all conduit openings
    - vi. Concrete encasement.
15. Install inner duct in conduit
- A. Transportation of the inner duct to and from the job site
  - B. Placement of pull line, if necessary, and
  - C. Placement of one inner duct into any size conduit
  - D. Placement of a pull line in the inner duct and
  - E. Placement of duct plugs in all openings.
16. Install multiple inner ducts in conduit
- A. Transportation of the inner duct to and from the job site,
  - B. Placement of pull line, if necessary, and
  - C. Placement of two or three inner ducts into any size conduit.
  - D. Placement of a pull line in each placed inner duct and
  - E. Placement of duct plugs in all openings.
17. Install riser w/U-Guard
- A. Unit 5390 applies to the placement of a U-Guard on a, building or other structure where a cable transitions from/to the underground. Construction manager notification required ANYTIME used with a footage estimate
18. Temporary cold patch
- A. Unit 5411 does not apply to areas where the Roadway Repair units apply.
  - B. Placement of a temporary cold patch will comply with City specifications. All material is included in the unit.
19. Temporary hot patch
- A. Unit 5412 does not apply to areas where the Roadway Repair units apply.
  - B. UNIT 5412 INCLUDES: Placement of a temporary hot patch and will comply with City specifications. All material is included in the unit.

20. Concrete placement
  - A. Unit 5430 does not apply to areas where the Roadway Repair units apply.
  - B. Forming of site
  - C. Provision of concrete, forms, and other materials,
  - D. Pouring of concrete,
  - E. Surface finishing as specified by District and to match surrounding areas, Removal of forms,
  - F. Removal and disposal of all waste material, and
  - G. Area cleanup and restoration.
21. Restoration of Decorative Stone
  - A. Transportation of materials
  - B. Spreading of the stone up to 6" in depth
  - C. Removal and disposal of all waste
  - D. The area to be covered should be only that which is necessary to restore the job site to its original status.
22. Place Fiber Cable or Conduit **or** Building:
  - A. Install Fiber Cable in Outside Conduit or Inner duct
    - i. Transportation of the cable to and from the job site,
    - ii. All setup cost,
    - iii. Blowing a pull line if necessary, and
    - iv. Pulling of cable into any size conduit or inner duct as specified in construction documents.
    - v. Placing a Trace Wire with the cable in the same duct or inner duct and grounding the trace wire on each end including inside a building.
    - vi. Placement of cable tags as specified by District.
    - vii. Footage markers from the cable must be recorded on the redlined drawings.
23. Install Additional Fiber Optic Cable in Outside Conduit or Inner Duct
  - A. Transportation of the cable to and from the job site,
  - B. All setup costs,
  - C. Blowing a pull line if necessary, and
  - D. Pulling of cable into any size conduit or inner duct as specified in construction documents.
  - E. Placement of cable tags as specified by District.
  - F. Footage markers from the cable must be recorded on the redlined drawings.
24. Install Fiber Cable in Inside Conduit or Inner duct
  - A. Transportation of the cable to and from the job site,
  - B. All setup costs,
  - C. Blowing a pull line if necessary, and
  - D. Pulling of cable into any size conduit or inner duct as specified in construction documents.
  - E. Placement of cable tags as specified by District.
  - F. Footage markers from the cable must be recorded on the redlined drawings.
25. Place Slack Coil in Inside or Outside Environment
  - A. Placement of a slack, maintenance, or splicing coil in a manhole, building, or other location specified by District other than on aerial strand.
  - B. Placement of cable tags as specified by District.
  - C. The unit of payment is per foot for the length of the cable that is being coiled.
  - D. Footage markers from the cable must be recorded on the redlined drawings.
26. Remove Underground Fiber Optic Cable or Inner Duct
  - A. Removal of a cable of any size from existing conduit,

- B. Chopping of the cable into transportable lengths or placing on a reel, and delivery to a disposal site.
- 27. Rodding Existing Conduit – 3/8” fiberglass rod - UOM –LF
  - A. Hand/push rod an empty or partially full cell using a 3/8 “ fiberglass rod
  - B. Placement of mule tape
  - C. Do Not Stick Rod Without Prior Approval
- 28. Rodding Existing Conduit – 3/4” stick rod - UOM –LF
  - A. Hand/push rod an empty or partially full cell using a 3/4 “ stick rod
  - B. Place mule tape in the cell
  - C. Hand/push rod an empty or partially full cell using a 3/4 “ stick rod
  - D. This unit requires District approval prior to starting work
- 29. Remove and dispose Lead Cable from underground conduit
  - A. Unit 6400 covers removing and disposing of lead cable, has been tagged with a DC Govt. tag and has been cut and ready for removal.
- 30. Aerial Construction
  - A. Regular Tree Trimming
    - i. The linear feet of the path that is trimmed.
    - ii. This unit requires prior written direction from District.
    - iii. This unit is not applicable to the incidental trimming of a few branches.
  - B. Install Vertical Ground with Rod
    - i. Placement of a vertical ground and rod when placing strand, and necessary to comply with the National Electric Code.
    - ii. All materials except those listed in the “Approved Material List.”
  - C. Reframe Pole
    - i. Applies when it is necessary to “re-frame” a pull to facilitate the attachment of strand.
    - ii. Applies to all materials except those listed in the “Approved Material List.”
    - iii. Does not apply when framing a pole, associated with the unit below titled “Install Strand and Hardware”.
  - D. Install Strand and Hardware
    - i. Placement of new strand and associated hardware necessary to frame the pole.
    - ii. Splicing and bonding to existing strand and grounding system.
    - iii. All materials except those listed in the “Approved Material List”
  - E. Install/Remove Dead-end
    - i. Installation and/or removal of a dead-end strand or guy.
    - ii. Splicing and bonding to existing strand and grounding system.
    - iii. All materials except those listed in the “Approved Material List”
  - F. Re-Sag Strand
    - i. Activities necessary to re-sag an existing strand.
    - ii. Any incidental tree trimming.
  - G. Install Screw Anchor Normal Soil w/ Guy and Guard
    - i. Installation of a screw type anchor, in normal soil, with a guy and guard. Backfilling of the hole,
    - ii. Proper compaction, and
    - iii. Cleanup of the work site.
    - iv. All materials except those listed in the “Approved Material List.”
  - H. Install Anchor, Eye, and Rod Any Type except Screw
    - i. Placing of an anchor including the excavation of the hole,
    - ii. Installation of anchor including rod and eye,



- iii. Backfilling of the hole,
- iv. Proper compaction, and
- v. Cleanup of the work site.
- vi. All materials except those listed in the “Approved Material List.”
- I. Remove Anchor w/Guy, Eye, and Rod - any type
  - i. Removal of an anchor, rod, and guy of any type.
  - ii. Filling the hole with proper material,
  - iii. Proper compaction, and
  - iv. Site restoration.
  - v. The rod shall be cut off 18” below ground level.
- J. Install/Remove Down Guy w/Guy Guard and/or Sidewalk Guy Arm
  - i. Placement and/or removal of a guy, sidewalk guy, guard, or guy arm.
  - ii. Placing of bolts and brackets, tensioning, bonds and grounds.
  - iii. All materials except those listed in the “Approved Material List.”
  - iv. All sizes of strand/guys and includes the placement of tags.
- K. Install/Remove Overhead Guy
  - i. Placement and/or removal of an overhead guy.
  - ii. Placing of bolts and brackets, tensioning, bonds and grounds.
  - iii. All materials except those listed in the “Approved Material List.”
  - iv. All sizes of strand/guys and includes the placement of tags.
- L. Install/Remove Pole-to-Pole Guy
  - i. Placement and/or removal of a pole-to-pole guy.
  - ii. Placing of bolts and brackets, tensioning, bonds and grounds.
  - iii. All materials except those listed in the “Approved Material List.”
  - iv. All sizes of strand/guys and includes the placement of tags.
- M. Install/Remove Cable Extension Arm
  - i. Placement and/or removal of a cable extension arm.
  - ii. Placing of bolts and brackets, tensioning, bonds and grounds.
  - iii. All materials except those listed in the “Approved Material List.”
  - iv. All sizes of arms strand/guys and include the placement of tags.
- N. Resag/Retention Down Guy
  - i. Re-tensioning or re-sagging of a down guy.
  - ii. Placing of bolts and brackets, tensioning, bonds and grounds.
  - iii. All materials except those listed in the “Approved Material List”
  - iv. All sizes of strand/guys and includes the placement of tags.
- O. Aerial Cable Setup 500ft or Less
  - i. Unless entire job order includes less than 500’ of cable or
  - ii. Written permission is granted from District.
  - iii. Its intent is to help offset the mobilization and setup cost of a small job.
- P. Place aerial fiber optic cable with existing cable with single overlash
  - i. All materials except those listed in the “Approve Material List”
  - ii. Placing cable risers down poles
  - iii. Riser footage in the aerial placing unit
  - iv. Transportation of the cable to and from the job site
  - v. Cable pull set up, placing of the cable, tensioning, and all other associated work
  - vi. Placement of cable tags at all pole locations
  - vii. Provisioning of all tools, e.g. rollers and j-hooks, necessary to perform this task
- Q. Place aerial fiber optic cable with existing cable with dual overlash

- i. All materials except those listed in the “Approve Material List”
  - ii. Placing cable risers down poles
  - iii. Riser footage in the aerial placing unit
  - iv. Transportation of the cable to and from the job site
  - v. Cable pull set up, placing of the cable, tensioning, and all other associated work
  - vi. Placement of cable tags at all pole locations
  - vii. Provisioning of all tools, e.g. rollers and j-hooks, necessary to perform this task
- R. Place Aerial Fiber Optic Cable Including De-lashing and Dual Over-lashing.
- i. All materials except those listed in the “Approved Material List”
    - a. Placing cable risers down poles.
    - b. Riser footage in the aerial placing unit.
    - c. Transportation of the cable to and from job site,
    - d. Cable pull setup, placing of cable, tensioning, and all other associated work.
    - e. Placement of cable tags at all pole locations.
    - f. Provisioning of all tools, e.g. rollers and j-hooks, necessary to perform this task.
    - g. The existing plant will be de-lashed and re-lashed with a dual lasher.
- S. Dual Lash Cable - First Cable
- i. This unit is used to lash one non self-supporting cable to a strand.
  - ii. Transportation of the cable to and from job site,
  - iii. Cable pull setup, placing of cable, tensioning, and all other associated work.
  - iv. Placement of cable tags at all pole locations.
  - v. All materials except those listed in the “Approved Material List”
- T. Place Each Addition Cable
- i. Unit 7505 is used in conjunction with the unit titled “Dual Lash Cable -First Cable”.
  - ii. Transportation of the cable to and from job site,
  - iii. Cable pull setup, placing of cable, tensioning, and all other associated work.
  - iv. Placement of cable tags at all pole locations.
  - v. All materials except those listed in the “Approved Material List”
- U. Cleat Cable to exterior of Building
- i. Unit 7510 covers attaching a cable, e.g. 48 fiber cables at 0.48” in diameter, to an exterior wall including the installation of all necessary support attachments.
  - ii. All bends in the cable will be a minimum of 6” radius.
  - iii. All materials except those listed in the “Approved Material List” are included in the unit.
- V. Place Aerial Fiber Single Loop - for Storage or Slack
- i. The placing on strand of a single slack coil, storage loop, maintenance loop, or splicing loop.
  - ii. It includes placing snowshoes and all lashing and zip tie activities.
  - iii. All materials except those listed in the “Approved Material List”
- W. Place Aerial Fiber Dual Loop - for storage or slack
- i. The placing on strand of a dual slack coil, storage loop, maintenance loop, or splicing loop.
  - ii. Placing snowshoes and all lashing and zip tie activities.
  - iii. All materials except those listed in the “Approved Material List”
- X. U-Guard Installation or Removal - any type
- i. All materials except those listed in the “Approved Material List”
- Y. Install Tree Guard



- i. All materials except those listed in the “Approved Material List”
- Z. Building Attachment - includes hardware, as specified
  - i. All materials except those listed in the “Approved Material List”
- 31. Trenching Construction:
  - A. Install hand trenched 1.25” innerduct – linear foot
    - i. Trenching
    - ii. Removal of any waste
    - iii. Backfill
    - iv. Placement of inner duct at 36” depth
    - v. Placement of locate wire
    - vi. Transportation of inner duct to and from job site
    - vii. Inner duct set up placement
    - viii. Any other actions necessary for inner duct placement
  - B. Install machine trenched 1.25” innerduct – linear foot
    - i. Trenching
    - ii. Removal of any waste
    - iii. Backfill
    - iv. Placement of inner duct at 36” depth
    - v. Placement of locate wire
    - vi. Transportation of inner duct to and from job site
    - vii. Inner duct set up placement
    - viii. Any other actions necessary for inner duct placement
  - C. Hand Trench/Place Cable 36” linear foot
    - i. Hand trenching,
    - ii. Removal of any waste material,
    - iii. Backfill,
    - iv. Placement of the cable,
    - v. Placement of a specified locate wire,
    - vi. Transportation of the cable to and from the job site,
    - vii. Cable placement setup and any other actions necessary for cable placement.
    - viii. All materials except those listed in the “Approved Material List”
    - ix. All hand trenching must be approved in writing by District prior to the work being performed.
  - D. Trench one (1) 4” HDPE - using machinery
    - i. The placement of one (1) 4” HDPE by trenching with machinery with a minimum cover of 36”.
    - ii. Transportation of the conduit to and from the job site,
    - iii. Placement setup,
    - iv. Trenching,
    - v. Removal of any waste material,
    - vi. Placement of the conduit,
    - vii. Backfill,
    - viii. Proper compaction of the soil,
    - ix. Proper surface restoration,
    - x. Proofing of conduit,
    - xi. Placing of pull line in conduit,
    - xii. Placing duct plugs in all conduit ends, and any other actions necessary for conduit placement -
    - xiii. All materials except those listed in the “Approved Material List”

- E. Hand trench/place one (1) - 4" HDPE /Trenching in excess of 36" depth using machinery - each 6" in excess
  - i. Unit 8310 is used when conduit placement is required in excess of 36" using machinery.
  - ii. To each 6" of depth.
  - iii. All materials except those listed in the "Approved Material List"
- 32. Personnel must be pre-authorized
  - A. Manhole Survey (including Butterfly)
    - i. Two (2) technicians with truck, tools, WAP, and traffic control setup.
    - ii. Creating a butterfly diagram, which indicates all cables in the manhole and specifically the DC Cables
    - iii. Includes identifying, tagging, and cutting the DC Cables in preparation for removal.
    - iv. Use of this item unit has a minimum of 4 hours when used.
  - B. Manhole Survey Crew
    - i. One technician with truck, tools, WAP, and traffic control setups. Shift will begin at the first work site and end at the last work site. This crew will only escort a District representative who will perform and document the survey.
    - ii. The Contractor requires no CAD work.
    - iii. Use of this item unit has a minimum of 4 hours when used.
  - C. Manhole Survey Crew
    - i. Two (2) technicians with truck, tools, WAP, and traffic control setup. Shift will begin at the first work site and end at the last work site. This crew will only escort a District representative who will perform and document the survey.
    - ii. The Contractor requires no butterfly or CAD work.
    - iii. Use of this item unit has a minimum of 4 hours when used.
  - D. Man Line Crew
    - i. Use of this item unit has a minimum of 4 hours when used.
- 33. Miscellaneous:
  - A. Laborer / Flagger
    - i. Use of this item unit has a minimum of 4 hours when used.
  - B. Truck Driver
    - i. Use of this item unit has a minimum of 4 hours when used.
  - C. 2-Man Fully Equipped Splicing Crew
    - i. Underground or aerial vehicle equipped with all work area protection
    - ii. Required Equipment:
      - a. OTDR
      - b. Fusion Splicer
      - c. Power Meter Test Equipment
      - d. Fiber Protection Sleeves.
  - D. Cable Locator with Truck, Tools, and Paint
  - E. Material Pick-Up - when required
    - i. If Contractor is required to pick up material: This will be per mile from pick-up location to destination job site as measured by "Microsoft Streets and Trips 2001" or later version.
    - ii. Prior approval of District is required.
    - iii. The intent is unique events not "standard stocking".
  - F. Obstruction Dig - Unit Rate: - hourly rate
    - i. Providing all appropriate WAP and traffic control including arrow board.

- ii. This unit includes digging a pit 6' x 4' x 4',
- iii. Exposing the existing duct bank,
- iv. Identifying and repairing the damaged conduit and
- v. Closing up the pit.
- vi. Removal of asphalt, concrete and dirt and
- vii. Placement of 6" dry mix around repaired conduit,
- viii. Back filling the hole and placing a hot patch on the street.
- ix. Placing a 1" rope or 1¼" inner duct in the repaired conduit.
- x. Use of this item unit has a minimum of 4 hours when used.

G. ISP Crew - Unit Rate: - hourly rate for fully equipped truck and two (2) technicians

- i. Contractor will provide all tools
- ii. District will provide all material
- iii. Placing, cuffing, bending metal conduit up to 2" in diameter
- iv. Placing pull boxes
- v. Placing inner duct
- vi. Placing and securing relay racks
- vii. Placing and securing ladder racks
- viii. Placing backboards
- ix. Installing ground wire
- x. Placing copper cable up to 100 pair
- xi. Placing fiber cable
- xii. Drilling holes in walls up to 2½"
- xiii. Place and secure cabinets Use of this item unit has a minimum of 4 hours when used.

H. Cable Removal Extension Hourly Crew - Rate:

- i. Extending a cable removal crew's time on site in the event removal of a cable cannot be accomplished by the initial pulling effort, as certified by District Construction Manager, as described below.
- ii. This fixed rate will be applied within the regular 8 hour work day and is designed to reimburse additional Contractor effort for "stuck" cables that require effort beyond the initial pull to remove. District Construction Manager or properly delegated Inspector shall be required to authorize this exception, which, in the professional judgment of District, does NOT constitute an OBSTRUCTION, covered above, but where the cable can be cleared from the duct with additional effort.
- iii. The cable removal supervisor from the Contractor shall make the above recommendation to the District Construction Manager with sufficient notice that on-site inspection shall occur during the same daily set-up.

I. Conduit Wash

- i. Providing all appropriate WAP and traffic control including arrow board. Washing a conduit section between two (2) manholes or a manhole to a pole and pumping out the excess water into the closest storm drain.
- ii. Place mule tape or equivalent
- iii. Use of this item unit has a minimum of 4 hours when used.

34. Core Drill for Aerial Entrance up to 6" hole - This unit includes:

- i. Installation of water sealant inside core before placing conduit
- ii. Sealing between core wall and conduit
- iii. Finishing of inside and outside walls to match surrounding areas

35. Core Drill for Underground Entrance up to 6" hole - This unit includes:

- i. Installation of water sealant inside core before placing conduit
  - ii. Sealing between core wall and conduit
  - iii. Finishing of inside and outside walls to match surrounding areas
  - iv. Excavation of pit, if required, up to 5' depth
36. Design Engineer - This function will design underground conduit permitting jobs for submittal to DDOT with professional engineer's approval and stamp.
37. Emergency Call-Out Mobilization Fee - Contractor to provide 4 men and fully equipped aerial or underground truck.
38. Place either a 19" or a 23" relay rack into a concrete floor. The unit includes delivery of the rack and bolting it to the floor. DC Net will purchase the relay rack and it will be stored at the DC Net warehouse.
39. Place a 10 foot section of ladder rack 12" wide rack. This unit includes delivery of the ladder rack and all associated hardware. Cutting and bolting all ladder rack to either a wall, other ladder rack and to the relay rack. . Drawings will be provided to show the layout. DC Net will purchase the ladder rack and hardware and it will be stored at the DC Net warehouse.

SOW	ITEM	UOM	Estimated Annual	Estimated Quarterly
A.5.1.6.4 (a)	Standard wall penetration hole 2½" w/fire stop - not a core drill	EA	37	10
A.5.1.6.4 (b)	Place pull box - all sizes	EA	0	0
A.5.1.6.4 (c)	Place Inner Duct - All Sizes	LF	7506	1877
A.5.1.6.5 (1)	Conduit placement excavation set-up - under 50'	EA	2	1
A.5.1.6.5(2)	Saw-cutting - asphalt and concrete	LF	132	33
A.5.1.6.5 (3)	Asphalt and/or concrete removal	CYd	16	4
A.5.1.6.5 (4)	Dig/fill straight access pit 4' x 4' x 4'	EA	10	3
A.5.1.6.5 (5)	Excavation - 0' to 10' depth	LF	0	0
A.5.1.6.5 (6)	Hand trench and place conduit 36" deep	LF	85	22
A.5. 1.6.5 (7)	Rock removal	CYd	10	3
A.5. 1.6.5 (8)	Concrete protective cover over conduit - 6" minimum	LF	198	50
A.5. 1.6.5 (9)	Core bore vault / manhole / handhole up to 6" diameter core	EA	6	2
A.5. 1.6.5 (10)	Install 4' x 4' x 4' pre-cast manhole	EA	0	0
A.5. 1.6.5 (11)	Install pre-cast handhole w/pea rock - 24" x 36" x 36"	EA	3	1
A.5. 1.6.5 (12)	Install quartzite handhole with pea rock – 30"x48"x36"deep	EA	3	1
A.5.1.6.5 (13)	Install quartzite handhole with pea rock – 36"x60"x36"deep	EA	3	1
A.5. 1.6.5 (14)	Install 1- 4" PVC conduit	LF	337	85
A.5. 1.6.5 (15)	Install inner duct in conduit	LF	43950	10988
A.5. 1.6.5 (16)	Install multiple inner duct in conduit	LF	0	0
A.5. 1.6.5 (17)	Install riser w/U-guard	LF	5	2
A.5. 1.6.5 (18)	Temporary cold patch	SF	55	14
A.5. 1.6.5 (19)	Temporary hot patch	SF	0	0
A.5. 1.6.5 (20)	Concrete placement	CYd	16	4
A.5. 1.6.5 (21)	Restoration of Decorative Stone	SF	66	17
A.5. 1.6.5 (22)	Install fiber optic cable in outside conduit or inner duct	LF	50023	12506
A.5. 1.6.5 (23)	Install additional fiber optic cable in outside conduit or inner duct	LF	74	19
A.5. 1.6.5 (24)	Install fiber optic cable in inside conduit or inner duct	LF	12432	3108
A.5. 1.6.5 (25)	Place slack coil in inside or outside environment	EA	23326	5832
A.5. 1.6.5 (26)	Remove underground fiber optic cable or inner duct	LF	6503	1626
A.5. 1.6.5 (27)	Rodding existing conduit - 3/8" fiberglass rod	LF	7873	1969
A.5. 1.6.5 (28)	Rodding existing conduit - 3/4" stick rod	LF	48131	12033
A.5. 1.6.5 (29)	Remove and dispose lead cable from underground conduit	LF	911	228

A.5. 1.6.5 (30a)	Regular tree trimming	LF	6108	1527
A.5. 1.6.5 (30b)	Install vertical ground with rod	EA	0	0
A.5. 1.6.5 (30c)	Reframe pole	EA	37	10
A.5. 1.6.5 (30d)	Install strand and hardware	FT	871	218
A.5. 1.6.5 (30e)	Install/remove dead-end	EA	0	0
A.5. 1.6.5 (30f)	Resag strand	EA	3303	826
A.5. 1.6.5 (30g)	Install screw anchor normal soil w/guy and guard	EA	0	0
A.5. 1.6.5 (30h)	Install anchor, eye rod -any type except screw	EA	0	0
A.5. 1.6.5 (30i4)	Remove anchor w/guy & eye rod - any type	EA	0	0
A.5. 1.6.5 (30k)	Install/remove down guy w/guy guard and/or sidewalk guy arm	EA	0	0
A.5. 1.6.5 (30k)	Install/remove overhead guy	EA	0	0
A.5. 1.6.5 (30l)	Install/remove pole-to-pole guy	EA	0	0
A.5. 1.6.5 (30m)	Install/remove cable extension arm	EA	2	1
A.5. 1.6.5 (30n)	Resag/retention down guy	EA	6	2
A.5. 1.6.5 (30o)	Aerial cable setup 500' or less	EA	28	7
A.5. 1.6.5 (30p)	Place aerial fiber optic cable with single overlash	LF	5797	1450
A.5. 1.6.5 (30q)	Place aerial fiber optic cable with dual overlash	LF	54602	13651
A.5. 1.6.5 (30r)	Place aerial Fiber Optic Cable including de- lashing and dual over-lashing.	LF	7798	1950
A.5. 1.6.5 (30s)	Dual lash cable - first cable	LF	929	233
A.5. 1.6.5 (30t)	Place additional cable	LF	0	0
A.5. 1.6.5 (30u)	Cleat cable to exterior of building	EA	1073	269
A.5. 1.6.5 (30v)	Place aerial fiber single loop -for storage or slack	EA	6	2
A.5. 1.6.5 (30w)	Place aerial fiber dual loop for storage or slack	EA	50	13
A.5. 1.6.5 (30x)	U-guard installation/removal - any type	EA	26	7
A.5. 1.6.5 (30y)	Install tree guard	EA	79	20
A.5. 1.6.5 (30z)	Building attachment - includes hardware, as specified	EA	11	3
A.5. 1.6.5 (31a)	Install hand trench 1.25" innerduct	LF	11	3
A.5. 1.6.5 (31b)	Install machine trench 1.25" innerduct	LF	237	60
A.5. 1.6.5 (31c)	Hand trench/place cable 36" linear foot	LF	0	0
A.5. 1.6.5 (31d)	Trench one (1) - 4" HDPE using machinery - using machinery	LF	0	0
A.5. 1.6.5 (31e)	Hand trench/place one (1) - 4" HDPE (Trenching in excess of 36" depth using machinery - each 6" in excess	LF	0	0
	<b>Personnel</b>			
A.5.1.6.5 (32a)	Manhole survey crew; 2 techs, including butterfly	HR	0	0
A.5. 1.6.5 (32b)	Manhole survey crew; 1 tech	HR	0	0
A.5. 1.6.5 (32c)	Manhole survey crew; 2 techs, no butterfly	HR	145	37
A.5. 1.6.5 (32d)	Three (3)-man line crew	HR	101	26
A.5. 1.6.5 (33a)	Laborer / Flagger	HR	1119	280
A.5. 1.6.5 (33b)	Truck driver	HR	0	0
A.5. 1.6.5 (33c)	2 Man Fully Equipped Splicing Crew	HR	0	0
A.5. 1.6.5 (33d)	Cable Locator with Truck, Tools, and Paint	HR	63	16
A.5. 1.6.5 (33e)	Material Pickup - When required	MILE	103	26
A.5. 1.6.5 (33f)	Obstruction dig, new unit -Unit rate per dig	Unit	3	1
A.5. 1.6.5 (33g)	ISP crew - unit daily rate for fully equipped truck and two (2) technicians	Daily	68	17
A.5. 1.6.5 (33h)	Cable Removal Extension Hourly Crew	HR	87	22
A.5. 1.6.5 (33i)	Conduit Wash	HR	0	0
A.5. 1.6.5 (34)	Core Drill for Aerial Entrance up to 6" hole	EA	0	0
A.5. 1.6.5 (35)	Core Drill for Underground Entrance up to 6" hole; Includes access pit	EA	0	0
A.5. 1.6.5 (36)	Design Engineer	HR	101	26
A.5. 1.6.5 (37)	Emergency call out- Mobilization Fee	EA	2	1
A.5. 1.6.5 (38)	Place 19" or 23" relay rack into concrete floor. Del & Labor	EA	0	0
A.5. 1.6.5 (39)	Place 10' section of ladder rack	EA	0	0

## **A.5.2 Wireless Installs and Support Services**

### **A.5.2.1 Services**

**A.5.2.1.1** The Contractor shall procure equipment and install the following items:

**A.5.2.1.1.1** Contractor shall have completed three projects of similar scope and complexity; preferably with DCPS. Provide names of references and project values.

**A.5.2.1.1.2** Contractor shall attend site walkthrough. Contractor shall submit a revised proposal after the site walkthrough to include estimated hours and material quantities.

**A.5.2.1.1.3** Contractor shall perform work outside of normal school hours. Typical schedule will be 3-11PM. In cases where school is not in session, the Contractor may schedule work during normal business hours.

**A.5.2.1.1.4** Contractor shall provide, install, and test cat 6 wiring terminations from designated WAO to nearest data closet wiring termination panel.

**A.5.2.1.1.4.1** Data Dual Drop – Two (2) Category 6e UTP Cables. Each outlet shall contain two (2) Category 6 cables terminated onto Category 6 jacks at the work area outlet and terminate onto Category 6 patch panels.

**A.5.2.1.1.4.2** Wireless (AP) Single Drop - One (1) Category 6e UTP Cables. Each outlet shall contain one (1) Category 6 cables terminated onto Category 6 jacks at the work area outlet and terminate onto Category 6 patch panels.

**A.5.2.1.1.5** All horizontal cabling shall utilize existing cable pathways where applicable. The Contractor shall have additional pathways and penetrations reviewed and approved by DCNet Subject Matter Expert (SME).

**A.5.2.1.1.6** All ancillary components shall be Cat. 6 certified. DC-Net SME will provide exact instruction as to appropriate mounting brackets to be deployed.

**A.5.2.1.1.7** All Cat. 6 cables in designated locations shall be terminated on Cat. 6 Keystone style Jack (RJ45 is not acceptable).

**A.5.2.1.1.8** If the termination is in the area where there is a drop-down ceiling of not more than 12 ft. high, the jack does not need to be mounted in a wall but requires a surface mount box (examples-Panduit CBX2WH-AY, Hellermann Tyton SMBDUAL-W or similar product line).

**A.5.2.1.1.9** If termination is in the area where there is no dropdown ceiling or if the height of the ceiling is more than 12 ft., the WAP termination point shall be mounted on a wall (exact location per design specifics).

**A.5.2.1.1.10** Surface mount box with Cat 6 Keystone style jacks with printed label and a written label. The Surface mount box shall be mounted 8 ft. above ground.

**A.5.2.1.1.11** The Surface mount box shall be around the following dimensions (4.9"H x 3.25"W x 1.8"D).

**A.5.2.1.1.12** Each drop shall be labeled at both ends in accordance with internal labeling schema.

**A.5.2.1.1.13** Upon completion, as-built drawings and test results shall be required in PDF format.

**A.5.2.1.1.14** A post completion walkthrough shall also be required.

#### **A.5.2.2 Cabling Labor Categories**

A. Project Manager

B. Voice Data Technician

#### **A.5.3 Electrical Installs and Support Services**

**A.5.3.1** The Subcontractor shall provide an electrical team for emergency response during “normal business hours”: 8:30 AM to 5:30 PM, with a one-hour lunch. The Subcontractor shall provide 8 hours of a team response outside normal business hours. Out-of-town travel will not be required. The Subcontractor shall follow all District/PMO standards. The Subcontractor shall provide timely, necessary information to allow the District to calculate “earned value”. Non-US holidays are not valid on timesheets. No paid holidays are included in this package.

**A.5.3.2** The Subcontractor shall provide electrical services as needed for District equipment at multiple locations as needed. The Subcontractor shall provide and install a complete electrical system or only the required components including, but not limited to, service, lighting, power, devices, panels, circuit breakers conduit, outlets, equipment, and wiring as needed.

##### **A.5.3.3 Standards, Codes, Regulations and Permitting**

**A.5.3.3.1** The Subcontractor shall provide systems, equipment, and electrical installations that comply with applicable standards, requirements, statutes, laws, ordinances, regulations, of Local, County, and State codes, Health department, Owner’s Insurance Company, Local Electric Utility, Labor Regulations, IEEE, ANSI, TIA, B.O.C.A., and OSHA. When required the Local Inspector and Architect shall approve work. If none is required, a Customer representative will approve and accept the work. When available the drawings and specifications constitute minimum acceptable requirements.

**A.5.3.3.2** The Subcontractor shall conduct all installations with regard to dimensional requirements of stated standards, statutes, laws, ordinances, regulations, codes, etc., even if these dimensions are not on plans. The Subcontractor shall make corrections after installation to meet said requirements as directed.

**A.5.3.3.3** The Subcontractor shall provide fire stop and weather sealant, as required.

**A.5.3.3.4** If a permit is a requirement by Customer or the electrician, the Subcontractor shall obtain a permit.

**A.5.3.3.5** The Subcontractor shall comply with all equipment, hardware and component specifications and recommendations for any installation or repair. Additional requirements identified by



building owners or management must be approved by the SAIC Program Management before payment can be processed.

**A.5.3.4 Engineering Drawings & Field direction by Customer Representative** - Should work specified or shown on drawings (when available) or direction by a Customer Representative be contrary to said applicable requirements, laws, ordinances, statutes, or regulations, the Subcontractor shall perform accordance with said laws, ordinances, statutes, or regulations; but not until points in question have been referred to Owner's representative and/or Architect for approval. The Subcontractor shall perform tests in accordance with the above laws, requirements, ordinances, statutes, regulations, or as directed by the Local Inspector. When a drawing is available, it is to get redline changes. The Subcontractor shall then send it directly to the client, mailed, or scanned/emailed.

**A.5.3.5 Specifications** - The Subcontractor shall perform installations that comply with manufacturer installation recommendations and applicable sections of all other specifications.

**A.5.3.6 Reporting** - When work is in progress, the Subcontractor shall provide daily work reports to the SAIC Program Management electronically via email or if requested by fax or hard copy. This report will note the requirement, the actions taken, and the anticipated completion date, as well as any unanticipated circumstances to be considered.

**A.5.3.7 Electrical:** This Section specifies the basic requirements for electrical installation

- A. Subcontractor Supplied Material - Provide products that are compatible within systems and other connected items.
- B. Site surveys will determine new or upgrade electrical requirements

#### **A.5.4 Telecommunications Services**

##### **C.5.4.1 HVAC Upgrade at DC-Net HQ**

The Subcontractor shall assess the current heating, ventilation and air conditioning (HVAC) environment within the DC-Net HQ Lab located at 655 15th St, NW, Washington DC and install additional cooling capacity to support future networking equipment. The Subcontractor shall:

1. Conduct a walk through with OCTO DC-Net staff and Metropolitan Plaza building engineer to collect requirements and assess the current HVAC capacity.
  - A. Combined BTU requirements for room 4325 and 4315 is 175,564 BTU
  - B. Two HVAC units shall be installed in the optimal locations in room 4325 and one in room 4315
  - C. HVAC units must accommodate the BTU requirements identified above
  - D. HVAC Units must utilize the buildings existing cooling water
  - E. Identify, coordinate with and meet building engineering departments building specific requirements.
  - F. Select a HVAC unit that has monitoring that works with the buildings current Siemens system
2. Engineering, Design and Permitting:
  - A. Prepare all engineering documents, specifications and requirements for this job
  - B. Identify what is required in the quote.
  - C. Prepare all permitting paperwork and coordination to see this work through completion
  - D. Coordinate with the building engineer on activating the HVAC alarm monitoring system
  - E. Coordinate with the building engineer on any required acceptance testing.
3. The Subcontractor shall mobilize on the jobsite.



4. Condenser water will be isolated on the 4th floor by others.
5. The Subcontractor shall disconnect existing mobile A/C Unit and return to Owner.
6. Existing CRAC Unit will be powered down and readied for the Subcontractor by Others.
7. The Subcontractor shall demo 1" Copper from CRAC unit existing unit to remain to the condenser mains.
8. The Subcontractor shall demo all Mains shown on drawing to point of connect provided.
9. The Subcontractor shall dis-assemble and re-assemble units to get into space.
10. The Subcontractor shall furnish and install (2) Liebert Units per the Equipment schedule on drawings.
11. The Subcontractor shall furnish and install (1) Safety drain pan under each new Liebert Unit.
12. The Subcontractor shall test all condenser mains and branch lines installed per the drawings.
13. The Subcontractor shall furnish and install all new pipe/ fitting and valves to each Liebert Unit per the drawing.
14. The Subcontractor shall re-pipe existing CRAC unit and test to point of connection.
15. The Subcontractor shall test all new piping provided to install (2) new Liebert Units.
16. Insulation Contractor shall then insulate all condenser water mains and branch lines to the specs provided.
17. Control Contractor shall then complete the install of the Thermostats and interlock with Liebert Units.
18. Startup on existing CRAC Unit is by others.
19. The Subcontractor shall provide startup of the (NEW) Liebert Units and put into service.
20. Independent air balancing: Contractor shall balance both water and air per Design.
21. Two (2) Liebert Model VS035KDA000151S, Liebert DS Precision Cooling Systems:  
 Nominal 035 kW (10-Ton) Glycol Cooled Up Flow System with cleanable Para-denser TM heat exchanger, 460 Volts, 60Hz, 3 Phase, 65,000 Amps RMS Short Circuit Current Rating.
  - A. Electrical Requirement: 24.8 FLA, 27.3 WSA, 35.0 OPD
  - B. Unit Dimension: 87" Width x 35" depth x 76" Tall
  - C. Unit Dry Weights: 1,980 lbs.
  - D. Per Note # 2\_Glycool system with econ-o-coil,3-way econ-o-coil valve
  - E. Per Note # 2\_3-way Para-denser regulating valve
  - F. 350 psi (2413 kPa) system
  - G. 14-gauge, welded frame, with Autophoretic coating. Frame can be field separated into three sections for transport through small areas.
  - H. Front Service Access
  - I. Supply air exits top of cabinet, front throw.
  - J. Return air enters unit from the front of cabinet through factory installed black grilles.
  - K. Exterior panels insulated & powder coated.
  - L. 4" filters, MERV 8 rating.
  - M. No Reheat Required
  - N. No Humidifier Required
  - O. Dual fixed-pitch motor sheaves, dual fixed-pitch fan pulleys, dual belts and automatic belt-tensioning system. 5-year parts warranty on belts, sheaves, pulleys, and fan bearings.
  - P. Open Drip Proof NEMA Premium Efficiency Motor
  - Q. Per Note # 16\_Variable speed drive (VSD) CT M200 inverter and Motor with bearing current protection
  - R. Dual refrigeration circuits with liquid line filter driers, refrigerant sight glasses, expansion valves, and liquid line solenoid valves.
  - S. Two (2) independent Digital Scroll Compressors provide variable capacity, increased part-load energy efficiency, and reduced compressor cycling.
  - T. A-frame Evaporator coil with stainless steel drain pan.

- U. Liebert ICOM Control with High Definition Display
- V. ICOM based communication
- W. Base Comms & Connectivity includes one Ethernet port and one RS-485 port on ICOM controller, dedicated to supporting BACnet IP, Modbus TCP/IP, BACnet 485, Modbus 485 and SNMP v1/v2c/v3
- 22. External 24 VAC Transformer – Quantity 1 (One) per unit
- 23. Unit Color: ZP-7021A (Black Gray Textured)
- 24. Services Include:
  - A. Standard One Year Warranty Covering Parts and Workmanship.
  - B. Factory Supervised Warranty Inspection/ Start-Up and Basic Operator Training (at time of start-up only).
- 25. Electrical scope of work:
  - A. Provide power to new CRAC units utilizing existing panel CPHV located on the 5th floor
  - B. Feeder conduits will transition from the 5th to 4th floor via new core drill holes located in the 5th floor Tenant Electric Closet.
  - C. Utilizing EMT and compression fittings
  - D. Furnish and install fusible disconnect switches and fuses
  - E. Provide ¾" conduit from CRAC units to Liebert wall stat
- 26. Electrical permits:
  - A. Scheduled Overtime as required for power utility outages and core drilling only
  - B. Firestop and seals as required
- 27. One Year warranty on all work

## ATTACHMENT B

### Price Schedule

- B.1** The Office of Contracting and Procurement, on behalf, of the Office of the Chief Technology Officer (OCTO) as referenced within this document as the “District”, seeks a contractor to provide services related to the construction, installation, maintenance, repair, improvement and expansion of OCTO’s extensive citywide fiber optic network.
- B.2** The District contemplates award of an Indefinite Delivery-Indefinite Quantity (IDIQ) Contract.
- B.3** Indefinite Delivery-Indefinite Quantity (IDIQ) Contract  
This is an IDIQ contract for the supplies or services specified, and effective for the period stated.
1. Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering Clause, section 9. The Contractor shall furnish to the District, when and if ordered, the supplies or services specified in the Schedule up to the not-to-exceed amount of \$900,000.00. Orders shall not be limited to the supplies or services specified in section B.5
  2. There is no limit on the number of orders that may be issued. The District may issue orders requiring delivery to multiple destinations or performance at multiple locations.
  3. Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and District's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; provided that the Contractor shall not be required to make any deliveries under this contract after expiration

#### **B.4** Price Schedule

<b>Contract Line Item No.</b>	<b>Item Description</b>	<b>Not-to-Exceed Amount</b>
0001	MAN Based Telephony & Data Services: Fiber and Cable Installation, Wireless Installation, Electrical and Telecommunications and Support Services	\$900,000.00

#### **B.5** Price List

##### **B.5.1** Fiber and Cable Installation Services

<b>Item Number</b>	<b>Description</b>	<b>Unit</b>	<b>Unit Price</b>
001	Standard wall penetration hole 2½” w/fire stop - not a core drill	Ft	\$50.32
002	Place pull box - all sizes	Ea	\$286.11
003	Place Inner Duct - All Sizes	Ea	\$1.34
004	Conduit placement excavation set-up - under 50’	Ea	\$3,019.19
005	Saw-cutting - asphalt and concrete	Ea	\$16.21
006	Asphalt and/or concrete removal	Ea	\$464.06

007	Dig/fill straight access pit 4' x 4' x 4'	Ea	\$1,789.15
008	Excavation - 0' to 10' depth	Ea	\$14.59
009	Hand trench and place conduit 36" deep	Ea	\$25.44
010	Rock removal	Ea	\$111.82
011	Concrete protective cover over conduit - 6" minimum	Ea	\$50.32
012	Core bore vault / manhole / handhole up to 6" diameter core	Ea	\$1,045.54
013	Install 4' x 4' x 4' pre-cast manhole	Ea	\$3,050.01
014	Install pre-cast handhole w/pea rock - 24" x 36" x 36"	Ea	\$821.89
015	Install quartzite handhole with pea rock - 30"x48"x36"deep	Ea	\$821.89
016	Install quartzite handhole with pea rock - 36"x60"x36"deep	Ea	\$821.89
017	Install 1- 4" PVC conduit	Ea	\$26.56
018	Install inner duct in conduit	Ea	\$1.34
019	Install multiple inner duct in conduit	Ea	\$0.71
020	Install riser w/U-guard	Ea	\$43.61
021	Temporary cold patch	Ea	\$5.87
022	Temporary hot patch	Ea	\$9.19
023	Concrete placement	Ea	\$301.92
024	Restoration of Decorative Stone	Ea	\$10.06
025	Install fiber optic cable in outside conduit or inner duct	Ea	\$1.34
026	Install additional fiber optic cable in outside conduit or inner duct	Ea	\$1.34
027	Install fiber optic cable in inside conduit or inner duct	Ea	\$1.34
028	Place slack coil in inside or outside environment	Ea	\$1.29
029	Remove underground fiber optic cable or inner duct	Ea	\$0.95
030	Rodding existing conduit - 3/8" fiberglass rod	Ea	\$1.17
031	Rodding existing conduit - 3/4" stick rod	Ea	\$2.01
032	Remove and dispose lead cable from underground conduit	Ea	\$2.63
033	Regular tree trimming	Ea	\$4.19
034	Install vertical ground with rod	Ea	\$63.71
035	Reframe pole	Ea	\$631.79
036	Install strand and hardware	Ea	\$1.17
037	Install/remove dead-end	Ea	\$66.40
038	Resag strand	Ea	\$0.56
039	Install screw anchor normal soil w/guy and guard	Ft	\$163.03
040	Install anchor, eye rod -any type except screw	Ea	\$174.91
041	Remove anchor w/guy & eye rod - any type	Ea	\$174.91
042	Install/remove down guy w/guy guard and/or sidewalk guy arm	Ea	\$84.22
043	Install/remove overhead guy	Ea	\$70.18
044	Install/remove pole-to-pole guy	Ea	\$70.18
045	Install/remove cable extension arm	Ea	\$62.62
046	Resag/retention down guy	Ea	\$51.44
047	Aerial cable setup 500' or less	Ea	\$1,118.22
048	Place aerial fiber optic cable with single overlap	Ea	\$1.29
049	Place aerial fiber optic cable with dual overlap	Ea	\$1.62
050	Place aerial Fiber Optic Cable including de-lashing and dual overlapping.	Ea	\$2.01
051	Dual lash cable - first cable	Ea	\$1.62
052	Place additional cable	Ea	\$1.20
053	Cleat cable to exterior of building	Ea	\$2.46
054	Place aerial fiber single loop -for storage or slack	Ea	\$173.32
055	Place aerial fiber dual loop for storage or slack	Ea	\$257.19
056	U-guard installation/removal - any type	Ea	\$83.87
057	Install tree guard	Ea	\$55.91

058	Building attachment - includes hardware, as specified	Ea	\$223.64
059	Install hand trench 1.25" innerduct	Ea	\$17.22
060	Install machine trench 1.25" innerduct	Ea	\$10.62
061	Hand trench/place cable 36" linear foot	Ea	\$16.69
062	Trench one (1) - 4" HDPE using machinery - using machinery	Ea	\$12.37
063	Hand trench/place one (1) - 4" HDPE (Trenching in excess of 36" depth using machinery - each 6" in excess	Ea	\$22.26
<b>Personal</b>			
064	Manhole survey crew; 2 techs, including butterfly	Ea	\$228.08
065	Manhole survey crew; 1 tech	Ea	\$142.39
066	Manhole survey crew; 2 techs, no butterfly	Ea	\$182.20
067	Three (3)-man line crew	Ea	\$151.16
068	Laborer / Flagger	Ea	\$39.96
069	Truck driver	Ea	\$56.15
070	2 Man Fully Equipped Splicing Crew	Ea	\$210.54
071	Cable Locator with Truck, Tools, and Paint	Ea	\$98.25
072	Material Pickup - When required	Ea	\$107.35
073	Obstruction dig, new unit -Unit rate per dig	Ea	\$3,466.48
074	ISP crew - unit daily rate for fully equipped truck and two (2) technicians	Ea	\$1,817.11
075	Cable Removal Extension Hourly Crew	Ea	\$226.73
076	Conduit Wash	Ea	\$334.70
077	Core Drill for Aerial Entrance up to 6" hole	Ea	\$1,053.00
078	Core Drill for Underground Entrance up to 6" hole; Includes access pit	Ea	\$2,700.00
079	Design Engineer	Ea	\$162.00
080	Emergency call out- Mobilization Fee	Ea	\$559.11
081	Place 19" or 23" relay rack into concrete floor. Del & Labor	Ea	\$810.00
082	Place 10' section of ladder rack	Ea	\$810.00

## B.5.2 Wireless Installations and Support Services

Item Number	Description	Estimated Quantity	Unit	Hourly Rate	Total Price
001	VDCE (Discounted)	2250	Hours	\$88.00	\$198,000.00
002	Project Manager 128G	150	Hours	\$132.62	\$19,893.00

## B.5.3 Electrical Services

Item Number	Description	Estimated Quantity	Unit	Hourly Rate	Total Price
001	Electrician	1775	Hours	\$97.32	\$172,743.00
002	Electrician Helper	775	Hours	\$70.58	\$54,699.50
003	Technician	125	Hours	\$103.01	\$12,876.25
004	Technician Helper	125	Hours	\$70.58	\$8,822.50
005	All Apprentices	8	Hours	\$70.58	\$564.64
006	Service Mechanic	8	Hours	\$97.32	\$778.56
007	Technical Mechanic	8	Hours	\$103.01	\$824.08

#### B.5.4 Telecommunications Services

Item Number	Description	Estimated Quantity	Unit	Total Price
001	Project: OJS Water Heater Relocation and Replacement	1	Job	\$132,458.67
002	Project: OJS Card Reader Expansion	1	Job	\$51,885.38
003	Project: OJS Main Distribution Frame HVAC upgrade	1	Job	\$117,224.05