



Date: March 12, 2020

Project Name: City Hall to New Courthouse Outside Plant (OSP) & Inside Plant (ISP) Fiber Optic Cable Project

Solicitation Number: Pricing Proposal

Proposed for: City of Flagstaff  
Information Technologies Department  
211 West Aspen Avenue  
Flagstaff, Arizona 86001

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**Aspen's Qualifications:** Aspen provides design/build engineering, construction, and consulting solutions to the Federal Government and commercial sector that increases flexibility, efficiency, resiliency, and reliability. We have partnered with large, medium and small firms to maximize the collective expertise to attain these goals. Our senior staff has served well over half a century in the Armed Forces and fully understands team concepts and accomplishing the mission. We offer only the very best in design, engineering, and construction. Our commitment to excellence has rewarded our customers with outstanding solutions for general construction and renovation projects, disaster response/recovery operations, and intricate work at historic sites.

Aspen is a certified Service Disabled Veteran Owned Small Business (SDVOSB) and SBA 8(a) and HUBZone Company. A Baldrige Quality firm, Aspen adheres to quality as a byword in everything we do.

Aspen Communications, LLC, doing business as Aspen Engineering & Contracting, founded in Arizona in 1999, is a licensed, bonded, and insured B-1 General Commercial Contractor (ROC297066), Low Voltage Electrical Contractor, (ROC145414), and Commercial Electrical Contractor (ROC248277), meeting all Arizona licensed contractor qualifications. Aspen offers solutions in design/build of information and communications technology infrastructure, computer network and IT services, intrusion detection and security systems, programmable logic control systems, specialty power systems, structured cabling and fiber optic installations, and technology consulting.



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Aspen holds a GSA IT Schedule 70 Contract #GS-35F-0601W and GSA Security Schedule 84 Contract # GS07F184DA

### **Project Assumptions/Qualifications:**

- It is assumed that the City of Flagstaff will be supplying any information concerning safety issues with regard to any hazardous materials for disclosure to all **ASPEN** employees working on this Project.
- Any additional labor or materials requested by the owner not included in the scope of this response would constitute an adjustment to the scope of work and priced accordingly. All requests for a change order will be in writing, and approved by the owner representative with the authority to do so. **ASPEN** will proceed when all parties agree.

## **Project Scope of Work**

### **OUTSIDE PLANT (OSP) FIBER OPTIC CABLING SYSTEM**

- **ASPEN** will coordinate installation of (2) 4" conduits from New #9 ADOT Maintenance Hole into City Hall Mechanical Room (1<sup>st</sup> Floor, East TR).
- **ASPEN** will provide and install (1) 4" 3-Cell Fabric Innerduct in both the existing and newly installed underground 4" conduits, end to end. Total length of run is approximately 1,600'. Additionally, Aspen will provide and install (1) 4" 3-Cell Plenum-Rated Fabric Innerduct from the City Hall Data Center to the City Hall 2<sup>nd</sup> Floor East Telecommunications Room. Total length of this run is approximately 300'. The Fabric Innerducts provided, will be manufactured by Maxcell Corporation, Wadsworth, Ohio.
- **ASPEN** will provide and install (1) 144 strand, Singlemode, Armored, OSP Fiber Optic Cable, both in the existing and newly installed underground 4" conduits between the Flagstaff City Hall 1<sup>st</sup> Floor East Telecommunications Room, located at 211 West Aspen Avenue, and the proposed New Courthouse 1<sup>st</sup> Floor BET/TR, located at 101 West Cherry Avenue. This new OSP Fiber Optic Cable will be placed in one (1) of the three (3) Maxcell Innerduct Cells, thereby leaving two (2) Cells for future use. Additionally, Aspen will install (1) 144 strand, Singlemode, ISP Plenum-Rated Fiber Optic Cable in one (1) of the three (3) Maxcell Innerduct Cells, between the City Hall Data Center and the City Hall 1<sup>st</sup> Floor East Telecommunications Room. An additional 30' of Fiber Optic Cable slack will be left in the City Hall Data Center and in the New Courthouse 1<sup>st</sup> Floor BET/TR. Fiber Optic Cable slack will be left in each existing pull box. Quantity will be determined on size and condition of the existing pull boxes. Ten feet of Fiber Optic Cable slack will be left in each of the newly installed pull boxes. Total length of the OSP Fiber Cable run is approximately 1,700'. Total length of the ISP Plenum-Rated Fiber Cable run is approximately 300'. The 144 strand, Singlemode, Armored, OSP Fiber Optic Cable provided.

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## TELECOM ROOM (TR) BUILDOUT & FIBER TERMINATIONS/SPLICING

### FLAGSTAFF CITY HALL DATA CENTER

- ASPEN will provide and install (1) Rack-Mounted Fiber Optic Closet Connector Housing (CCH), populated with (12) Connector Housing Panels, each pre-loaded with 12 Singlemode Fiber Optic LC type Adapters. All (144) Singlemode Fiber Optic Cable strands will be terminated with Singlemode LC type Fiber Connectors and placed into the Fiber Optic LC type Connector Housing Panels. Closet Connector Housing, Singlemode LC Connector Housing Panels and LC Singlemode Connectors installed.

### FLAGSTAFF CITY HALL 1<sup>ST</sup> FLOOR EAST TR

- ASPEN will provide and install (1) Fiber Optic Splice Enclosure with associated grounding kit, 24 fiber fusion splice trays and fusion splice heat shrink protective sleeves. All 144 OSP Fiber Optic Cable strands will be transition fusion spliced to all 144 ISP Plenum-Rated Fiber Optic Cable strands, and placed into the Fiber Optic Splice Enclosure. Fiber Optic Splice Enclosure and associated components.

### NEW COURTHOUSE 1<sup>ST</sup> FLOOR BET/TR

- ASPEN will provide and install (1) Rack-Mounted Fiber Optic Closet Connector Housing (CCH), populated with (12) Connector Housing Panels, each pre-loaded with 12 Singlemode Fiber Optic LC type Adapters. All (144) Singlemode Fiber Optic Cable strands will be terminated with Singlemode LC type Fiber Connectors and placed into the Fiber Optic LC type Connector Housing Panels. Closet Connector Housing, Singlemode LC Connector Housing Panels and LC Singlemode Connectors installed.

## GROUNDING/BONDING

- ASPEN will provide and install the required amount of grounding conductors (#6AWG) with bonding components within the City Hall Data Center, the City Hall 2<sup>nd</sup> Floor East TR and the New Courthouse 1<sup>st</sup> Floor BET/TR, to include the OSP Fiber Optic Cable metallic shields to the existing Telecommunications Main Grounding Busbar (TMGB). Grounding will conform to the ANSI/TIA/EIA-607A Standard in addition to the manufacturer's grounding requirements.
- ASPEN assumes that the building ground is to be provided by a qualified electrical contractor, and will be bonded to the TMGB by said electrical contractor.

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## FIBER OPTIC CABLE TESTING

- ASPEN will provide labor and equipment to test all 144 Singlemode, Armored, OSP Fiber Optic Cable strands, and all 144 Singlemode ISP Plenum-Rated Fiber Optic Cable strands post installation. These tests will include end to end attenuation (loss) tests utilizing an Optical Loss Test Set (OLTS) measured at 1310nm and 1550nm. These tests will verify the OSP/ISP Fiber Optic Cabling System performance per the requirements as outlined in the ANSI/TIA/EIA-455 and the ANSI/TIA/EIA-567-7 Standards, in addition to the Corning Cabling System recommendations. Documentation depicting the OLTS test results will be provided in both hard copy and electronic formats.

## LABELING

- ASPEN will label all of the Fiber Optic Cable ends and each of the Closet Connector Housings/Connector Panels in the City Hall Data Center, the City Hall 2<sup>nd</sup> Floor East TR and the New Courthouse 1<sup>st</sup> Floor BET/TR. Additionally, the 144 Singlemode, Armored, OSP Fiber Optic Cable will be labeled inside all (4) of the existing and (4) newly installed in-ground pull boxes/hand hole through which it passes. ASPEN will develop and implement, in conjunction with the City of Flagstaff IT Department, a comprehensive labeling scheme that will be both practical and ANSI/TIA/EIA-606A compliant. Documentation for the labeled OSP Fiber Optic Cabling System will be provided in both hard copy and electronic formats.

## PROJECT SPECIFIC EXCLUSIONS

- 120V AC Raceways and Outlets
- Building Grounding Source
- Active Components (ie: Routers, Switches, UPS's, Computers, Etc.)
- All Inter-Building (OSP) Pathways and Spaces

## INSTALLATION PRICE

Administration :	\$ 9,650.00
Labor :	\$53,859.00
Materials:	\$30,357.00
<b>Grand Total (Installation)</b>	<b>\$93,866.00</b>



**Execution:** All work to be performed by BICSI and/or product-specific certified Installers and Technicians. Project Site Manager will be a BICSI certified Technician. Project oversight will be provided by a BICSI certified Registered Communications Distribution Designer. Technicians are OSHA and HIPAA Certified.

**Standards and Codes:** Complete structured cabling system will conform to TIA/EIA-568A, TIA/EIA-569B, TIA/EIA-606A, TIA/EIA-607A, TIA/EIA-72, TIA/EIA-67, TIA/EIA-TSB75, TIA/EIA-758 and all applicable State and local codes.

**Warranty:** Manufacturer warranty will apply plus Aspen’s standard 1-year workmanship warranty.

**Access:** Owner will provide unhindered access to all work areas during the course of the job. Unwarranted delays, acts of God excluded, will be subject to additional charges.

**Term:** This budgetary proposal is good for 30 days, based on the date reflected on page 1 of this document.

**Notes:**



Please feel free to contact us if have any questions regarding this proposal. We can be reached at (928) 774-0992.

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Aspen Communications, LLC DBA Aspen Engineering & Contracting

A SDVOSB, 8(a) and HUBZone Company

**8(a) Certified**



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**ACCEPTANCE**

Proposal Accepted By: \_\_\_\_\_ Date: \_\_\_\_\_  
Printed Name/Title: \_\_\_\_\_  
Email: \_\_\_\_\_  
Phone: \_\_\_\_\_