

• POLARITY •  
NETWORKS

# City of Burleson Plaza Fiber Connectivity Project

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(REV 4) PROPOSAL # 89152

OCTOBER 05, 2022

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TIPS Contract #211001-3132

**PREPARED FOR**

City of Burleson

James Grommersch  
*Chief Technology Officer*

952-261-3221  
jgrommersch@burlesontx.com

**PREPARED BY**

Polarity Networks

Chris Campbell  
*President / Co-Founder*

844-410-1800  
chris@polaritynetworks.net

# Scope of Work

Polarity Networks to provide all new Cat 6 structured cabling, optical fiber, and conduit pathways for the City Plaza. This network infrastructure is intended to provide network connectivity to security cameras, wireless access points, and audio video equipment for the City of Burleson. Please see attached drawings of the optical fiber and pathway infrastructure layouts as designed in this proposal.

TEXRAM Directional Drilling, Inc, will be a sub-contractor of Polarity Networks, and will be providing all of the underground and buried conduit and vault placements. The price for TEXRAM is included in this proposal with a copy of their quote attached.

Polarity will build out the 3/4" conduit pathways and NEMA box enclosures, and will tie in all underground conduits to each fiber box location. Polarity will also be installing an overhead fiber from the stage pavilion to the depot museum. This fiber will be an OSP singlemode fiber, while all other fiber optic cables will be a jetted microfiber solution. All terminations will be LC SMF UPC.

Polarity to install roughly 900' of eABF 8.5 x 6mm microduct and 2,000' of singlemode fiber in total.

Depot Museum to the Stage Pavilion Fiber Enclosure (12F SMF)

Stage Pavilion to Shade Pavilion (24F SMF)

Stage Pavilion to A/V Studio (12F SMF)

Shade Pavilion to Data Center (24F SMF)

Shade Pavilion to A/V Studio (12F SMF)

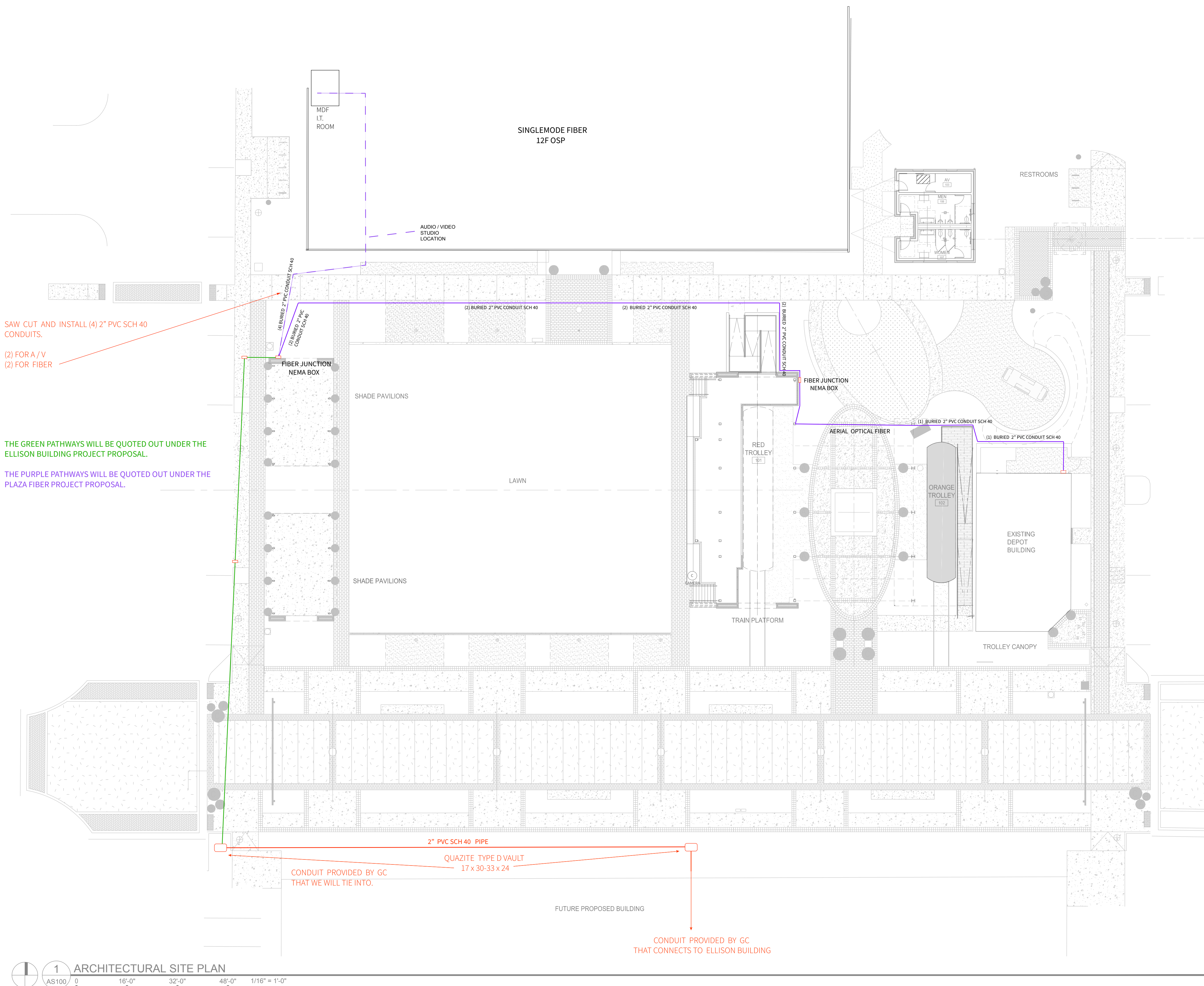
There will be Cat 6 cables installed to each network camera and wireless access point, and there will be a 2F fiber cable installed to each studio camera back to the fiber enclosure box in the pavilions.

All cables will be installed to industry standards. All cables will be properly installed, labeled, tested and certified upon completion. The City of Burleson will receive a copy of the "as built" drawings and cable test certifications.

## Project Cost

DESCRIPTION	PRICE	QTY	SUBTOTAL
<b>Directional Drilling &amp; Pathway Installation (Turnkey) TEXRAM Directional Drilling</b>	\$38,700	1	\$38,700
Separate Proposal Attached*			





**BENNETT • BENNER  
PARTNERS**  
ARCHITECTS + PLANNERS

500 West Seventh Street Suite 1400

Landscape Architects  
1306 May Street,  
Fort Worth, Texas  
(817) 870-9848  
Austin • Dallas  
Fort Worth • Houston

Project:  
**BURLESON OLD  
TOWN PLAZA**

PERMIT AND  
BID PACKAGE

**BURLESON, TEXAS**  
Project Number:  
FW18064

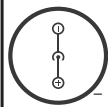


Designed:  
Drawn:  
Reviewed:  
Date Issued:  
NOVEMBER 13, 2018  
Revisions:

Sheet Title:  
**ARCHITECTURAL  
SITE PLAN**

Sheet Number:  
**AS100**





**POLARITY**  
NETWORKS

TITLE:

PROJECT: HISTORIC PLAZA  
CITY OF BURLESON, TX

SUBMITTAL DRAWINGS

SHEET 1 OF 1

DWG NO: PROPOSED FIBER CONNECTIVITY

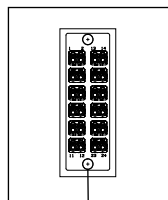
DRAWN: CHRIS CAMPBELL  
FOR: JAMES GROMMERSCH

10-05-2022  
10-05-2022  
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REV. 4

## CITY HALL DATA CENTER

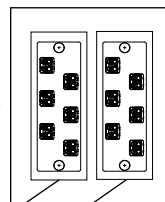
TO SHADE  
PAVILLION



24F SMF (350')  
4 WAY eABF 8.5 x 6mm (350')

## CITY HALL A/V STUDIO

TO SHADE  
PAVILLION

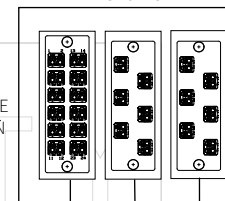


TO STAGE  
PAVILLION

12F SMF (300')  
4 WAY eABF 8.5 x 6mm (300')  
12F SMF (300')

## STAGE FIBER ENCLOSURE BOX

TO A/V  
STUDIO



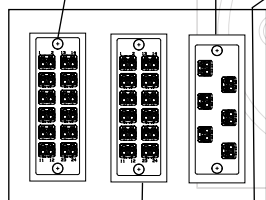
TO DEPOT  
MUSEUM

TO SHADE  
PAVILLION

24F SMF  
12F SMF  
12F SMF (250')  
OSP OPTICAL FIBER OS2 (250')

TO DATA  
CENTER

TO A/V  
STUDIO



PASS THRU

(450') 12F SMF TO A/V  
STUDIO

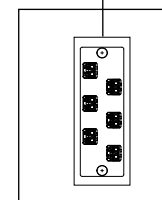
TO STAGE  
PAVILLION

(450') 24F SMF

4 WAY eABF 8.5 x 6mm (450')

## SHADE PAVILLION FIBER ENCLOSURE BOX

TO STAGE  
PAVILLION



## DEPOT MUSEUM FIBER ENCLOSURE

NOTE: DRAWINGS ARE CONCEPTUAL ONLY AND ARE NOT TO EXACT SCALE



POLARITY NETWORKS, LLC  
300 BAILEY AVENUE, STE 200  
FORT WORTH, TX 76107  
WWW.POLARITYNETWORKS.NET

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TITLE:  
HISTORIC PLAZA  
CITY OF BURLESON, TX

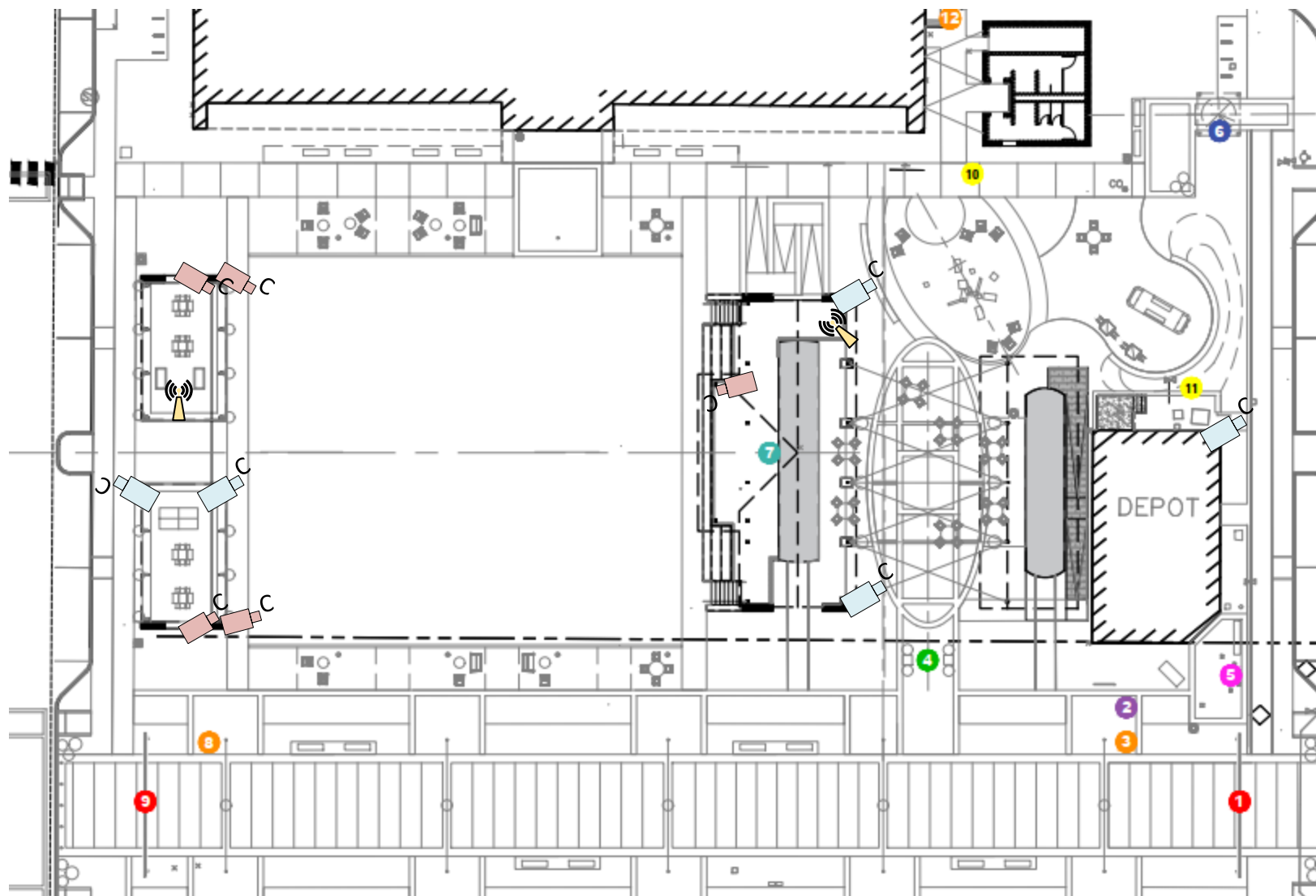
PROJECT: SUBMITTAL DRAWINGS

SHEET 1 OF 1

DWG NO: PROPOSED FIBER CONNECTIVITY  
DRAWN: CHRIS CAMPBELL 10-05-2022  
SITE SURVEY: CHRIS CAMPBELL 09-28-2022  
FOR: JAMES GROMMERSCH 10-05-2022

REV.

4



DESCRIPTION	PRICE	QTY	SUBTOTAL
<b>Optical Fiber Installation (Labor)</b>  Polarity Networks to provide all optical fiber installations end to end. This includes the OSP fiber from the museum depot to the stage pavilion, from the stage pavilion to the shade pavilion, from shade pavilion to the data center, and from the camera locations to the studio office. Once all microducts have been pulled into place, we will "jet" in the eABF fiber and install the overhead OSP fiber. We estimate 4 techs for 2 days to get all optical fiber cables pulled in to each location.	\$95	64	\$6,080
<b>Optical Fiber Terminations &amp; Testing (Labor)</b>  Polarity Networks to provide all prep work, optical fiber terminations, and test certifications. There will be a total of 168 terminations. We estimate 4 techs for 3 days to get all optical fiber cables terminated and tested. Polarity will work with the technology staff to patch in fiber cables.	\$95	72	\$6,840
<b>EMT Conduit Installation (Labor)</b> Polarity Networks to have 4 Techs for 3-4 days to complete all of the vertical and horizontal conduit runs that will connect the cameras, and WAP devices under the shade and stage pavilions.  Polarity Networks to also build out conduit that will provide a pathway up each end of the stage and pavilion support columns to traverse the courtyard seating area between the train cars.  Polarity Networks will provide and install 3/8" messenger wire and eye bolt supports for the aerial fiber run.	\$95	96	\$9,120
<b>Outdoor Cat 6 Installation (Labor)</b>  Polarity Networks to install (7) OSP C6 cables through outdoor conduits and to route and lace through junction boxes to each device and to the NEMA enclosures. All cables will be properly terminated, labeled and tested on completion.	\$250	7	\$1,750



DESCRIPTION	PRICE	QTY	SUBTOTAL
<b>Outdoor Cat 6 Materials</b>  (2) Outside Plant Cat 6 UTP Cable - UV Rated / CMR  (2) DIN Rail Mount Cat 6 Patch Panel x 8 Port  (7) Cat 6 Connectors Male RJ45 8P8C  (7) Cat 6 Jack Female RJ45 8P8C (Black)	\$404	1	\$404
<b>EMT Conduit &amp; Pathway Materials</b> EMT conduit & misc materials to connect all camera and A/P devices back to the NEMA fiber boxes. These pathways will run up and overhead through the shade and stage pavilions.  (72) 3/4" EMT Conduit Straight Section 10'  (72) 3/4" EMT Conduit Compression Couplers  (40) 3/4" EMT Conduit Compression Connectors w/ Lock Washers  (48) 4x4 Square EMT Metal Boxes  (48) 4x4 Square EMT Metal Covers  (120) 3/4" EMT Conduit Straps  (120) Masonry / Concrete Fasteners  (6) Unistrut Channel 10' Section  (6) Unistrut Channel 3/4" Pipe Straps  (8) 2" EMT Conduit Straight Section 10'  (10) 6" Stainless Steel Tie Straps (Pkg of 10)  (50') Stainless Steel Messenger Wire 3/8" with Mounting Hardware and Wire Fasteners  (100') 3/4" SealTight Metallic Flex Rubber Coated Tubing  (20) 3/4" SealTight Connectors & Couplers	\$4,210	1	\$4,210



DESCRIPTION	PRICE	QTY	SUBTOTAL
<b>MDF / IDF Materials</b> Hardware & Infrastructure for the IDF locations.  (2) 12RU Wall Mount Enclosed 19" Network Racks w/ Glass Locking Doors  (2) 2RU Rack Mount Shelf 15"  (2) 1RU Cyber Power PDU CPS 1215 15/20 AMP  (2) Painted Backboard 4x4  (2) DuraLine Optical Fiber Microduct 4 Way 8.5mm x 6mm eABF	\$1,395	1	\$1,395





DESCRIPTION	PRICE	QTY	SUBTOTAL
<b>Optical Fiber &amp; Connectivity Materials</b>	\$16,294.62	1	\$16,294.62
(900') DuraLine Optical Fiber Microduct 4 Way 8.5mm x 6mm eABF			
(1000') AFL eABF Optical MicroFiber 12F			
Singlemode Fiber Cable 9/125 micron			
(800') AFL eABF Optical MicroFiber 24F Singlemode Fiber Cable 9/125 micron			
(250') OSP Optical Fiber 12F Singlemode OS2 SASJ 9/125 micron			
(50) DuraLine Microduct Connectors / Couplers 8.5 x 6mm eABF			
(14) Corning Fan Out Kits 250 micron to 900 micron Build-up Sleeves			
(6) Optical Fiber Adapter Panels Loaded LC 12F x 6 Duplex UPC			
(12) Optical Fiber Adapter Panel Blank Modules			
(4) Optical Fiber Adapter Panels Loaded LC 24F x 12 Duplex UPC			
(168) Corning Optical Fiber Connectors SMF / LC UPC / 9/125			
(20) LC-LC Duplex x 1meter Optical Fiber Patch Cable 9/125 SMF LC UPC			
(2) Pre-terminated OSP SMF Patch Cables 2F Duplex LC-LC UPC x20M			
(4) Pre-terminated OSP SMF Patch Cables 2F Duplex LC-LC UPC x30M			
(1) DIN Rail Strip			
(6) DIN Rail Mount Fiber Enclosure			
(3) NEMA Enclosure 24 x 24 x 8 Weatherproof w/ Back Mounting Plane			
(4) NEMA Enclosure Junction Box 12 x 12 x 6			
(2) 1RU Rack Mount Fiber Enclosure x 3 Panel			
(1) 2RU Rack Mount Fiber Enclosure x 6 Panel			
Subtotal			\$84,793.62
Payment & Performance Surety Bond (3%)			+\$2,543.81
Sales Tax (0%)			+\$0
Total			\$87,337.43



# Terms & Conditions

## GENERAL EXCLUSIONS

1. This proposal covers all that is needed to complete the scope of work listed above. If there are any changes or additions to the labor or material by customer request, those changes will be an additional cost added to the final invoice. All changes will be approved by the customer, before any revisions or additions are made.
2. Unseen Issues: We may encounter some "unseen" issues throughout the installation / connectivity process. If there is a need for additional labor, custom work, or anything not listed in the scope of work above, we will discuss with the customer before any changes are made. Unseen issues can also be defined as any difficulty or barrier obstacle on site that slows down the progress of work or that may cause the need for additional material to overcome. All changes will be discussed with the customer, and approved before any changes are made.
3. Directional Drilling - Due to the directional drilling being subcontracted by Polarity, we ask that once the drilling and underground pathway scope of work is completed, that the city pay in full the remaining balance so that we can pay TEXRAM. The remaining balance will be paid to Polarity when the network infrastructure scope of the project is completed.
4. Due to the aesthetics of the finished plaza area, the City of Burleson agrees to replace all decorative pave stones, bricks, brick inlays, and concrete for walkways that are needed to be removed or disturbed during this project.
5. We understand that the City of Burleson will provide any utility location services that pertain to any city infrastructure, and will also provide all permits required to complete the work as described in this proposal.

## 50% PAYMENT TERMS

Polarity Networks will invoice for 50% of the total payment before work begins, and will invoice for the balance when all work under the attached scope has been completed. All pricing is based on the material and scope of work listed in this proposal. Final payment will be due (NET 10) from day of completion, and the date will be listed on the final invoice.

**NOTE:** If the project runs longer than expected, (outside of the control of Polarity Networks) we will submit an invoice for 25% of the remaining balance before the project is completed. If this happens, we will invoice for the remaining 25% balance after completion of our scopes of work.



# Agreement

By signing, the Customer agrees to the proposed scope of work, conditions, and payment terms.

## Polarity Networks, LLC

   
SIGNATURE  
Chris Campbell

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Chris Campbell  
*President / Co-Founder*

300 Bailey Street, Suite 200  
Fort Worth, Texas 76107

## City of Burleson

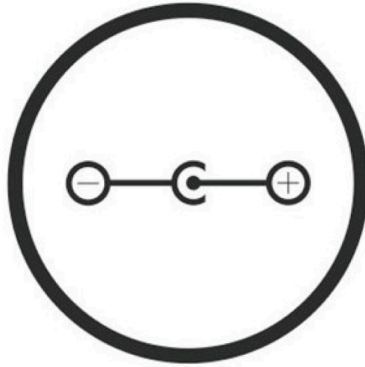
   
SIGNATURE  
James Grommersch

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James Grommersch  
*Chief Technology Officer*

550 NW Summercrest Blvd.  
Burleson, Texas 76028





# • POLARITY •

## NETWORKS

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