ORDINANCE/RESOLUTION REQUEST

Please email requests to the Mayor's Legislative Team
at MileHighOrdinance@DenverGov.org by **3:00pm on Monday.** Contact the Mayor's Legislative team with questions

Date of Request: 7/27/2020

Please mark one: ☐ **Bill Request**   **or**   ☒ **Resolution Request**

1. Type of Request:

☒ **Contract/Grant Agreement**   ☐ **Intergovernmental Agreement (IGA)**   ☐ **Rezoning/Text Amendment**

☐ **Dedication/Vacation**   ☐ **Appropriation/Supplemental**   ☐ **DRMC Change**

☐ **Other:**

2. **Title:** (Start with *approves, amends, dedicates*, etc., include name of company or contractor and indicate the type of request: grant acceptance, contract execution, contract amendment, municipal code change, supplemental request, etc.)

> Approves a contract with Ford Audio-Video Systems, LLC. for $1,102,890 and for three years for goods and services related to the design, procurement, installation, integration and commissioning of all business systems and furnishings in support of the new Community Media Center; (TECHS-202055202)

3. **Requesting Agency:**   Technology Services

4. **Contact Person:**

Contact person with knowledge of proposed ordinance/resolution	Contact person to present item at Mayor-Council and Council
Name: Julie Martinez	Name: Corrine Williams
Email: Julie.martinez@denvergov.org	Email: Corrine.Williams@denvergov.org

5. **General description or background of proposed request. Attach executive summary if more space needed:**

Ford AV Systems, LLC (Contractor) was selected through competitive RFP to provide the turnkey solution for the multi-media, A/V and broadcast systems build-out of the City and County of Denver's Community Media Center (DCM). DCM provides the community with the tools and education desired to share information and stories by creating video and audio content.

The proposed equipment and systems will allow the city to expand it's media education options and technical product training, along with new methods to disseminate created video content through TV and online platforms. These mediums include Comcast and Century Link cable channels, a web streaming solution, and social media networks.

This systems integrator contractor shall provide goods and services related to the design, procurement, installation, integration, and commissioning of all multi-media, A/V and broadcast systems in support of the new Denver Community Media center.

The use of one contractor for the build-out will ensure efficiency and accountability for installing and integrating the system. Overall, one point of contact for any warranty or maintenance concerns and will allow our engineer to work with one, identifiable team to ensure optimal design and technical standards.

6. **City Attorney assigned to this request (if applicable):** Andrew Reister

7. **City Council District:** N/A - Citywide

8. ****For all contracts, fill out and submit accompanying Key Contract Terms worksheet****

To be completed by Mayor's Legislative Team:

Resolution/Bill Number: _____   Date Entered: _____

Key Contract Terms

Type of Contract: (e.g. Professional Services > $500K; IGA/Grant Agreement, Sale or Lease of Real Property):

Standard Expenditure contract exceeding $500,000

Vendor/Contractor Name: Ford Audio-Video Systems, LLC.

Contract control number: TECHS-202055202

Location: Citywide

Is this a new contract? ☒ **Yes** ☐ **No** **Is this an Amendment?** ☐ **Yes** ☒ **No** **If yes, how many?**

Contract Term/Duration (for amended contracts, include <u>existing</u> term dates and <u>amended</u> dates):

Contract Term: 8/1/2020 - 8/1/2023   Duration: 3 years

Contract Amount (indicate existing amount, amended amount and new contract total):

Current Contract Amount *(A)*	*Additional Funds* *(B)*	*Total Contract Amount* *(A+B)*
$1,102,890	N/A	$1,102,890

Current Contract Term	*Added Time*	*New Ending Date*
8/1/2020 - 8/1/2023	N/A	N/A

Scope of work:
Attached as Exhibit A.

Was this contractor selected by competitive process? Yes   **If not, why not?**

Has this contractor provided these services to the City before? ☐ **Yes** ☒ **No**

Source of funds: Denver Marketing and Media Services - Telecom & Legislative / Public Access TV Support / Denver Community Media

Is this contract subject to: ☐ **W/MBE** ☐ **DBE** ☐ **SBE** ☒ **XO101** ☐ **ACDBE** ☐ **N/A**

WBE/MBE/DBE commitments (construction, design, Airport concession contracts): N/A

Who are the subcontractors to this contract? N/A

To be completed by Mayor's Legislative Team:

Resolution/Bill Number: _____   Date Entered: _____

EXHIBIT A, SCOPE OF WORK

Systems Integrator Statement of Work
DMMS Community Media Center

Ford AV (Contractor) will provide the turnkey solution for the multi-media and broadcast systems build out of the City and County of Denver's (the City) Community Media Center (CMC) which will offer the community the tools needed to provide media education, technical production training, and disseminate created video content through a variety of TV and online platforms. These mediums include Comcast and Century Link cable channels, a web streaming solution, and social media networks.

The CMC must have the necessary technology and tools that will allow the community to produce and deliver video content. These tools include a full television studio with a dedicated control room, a digital studio, a master control to program the available distribution channels, edit stations, a classroom to teach production courses to the community, and workspace areas with standard business solutions such as internet, WIFI VOIP, etc.

The production tools of the CMC will be designed using video and audio over IP protocols. Legacy formats such as analog audio and video, and digital video over SDI, will also be supported.

The Contractor shall provide goods and services, as detailed herein, related to the design, procurement, installation, integration and commissioning of all business systems and furnishings in support of the new CMC facility to open no later than November of 2020. A timeline with detailed milestones is included in this agreement. Noting that the attached timeline lacks actual calendar dates, the CMC Master Schedule, Exported May, 27, 2020 and emailed to Ford AV on 5-27-202 shall serve as a basis for actual calendar dates. Line 109 indicates a Purchase Order in Place sometime between 7-21-2020 and 7-27-2020 and the actual date of a Purchase Order in Place shall correspond with Phase 1 – Design of the Project Timeline as detailed in Section 17 below. That actual date will drive the balance of the Project Timeline as detailed in Section 17 below.

Contractor shall procure equipment & technology as detailed in the Equipment List revised May 11, 2020 for this build out except as specifically enumerated in this agreement as being provided by a third-party vendor. Contractor agrees to work in collaboration with the City's selected Engineering Project Manager for the design and integration of all systems.

Contractor shall design and integrate all solutions for:

o   Studio and studio control room equipment
o   Master Control operations

o   Digital Studio
o   Post-Production systems
o   Community Classroom
o   Reception Area and Offices

Contractor shall procure, install and commission ~~all~~ technology as detailed in the Equipment List revised May 11, 2020 designed for:

o   Studio and studio control room equipment
o   Master Control operations
o   Digital Studio
o   Post-Production systems
o   Community Classroom
o   Reception Area and Offices

1. **Master Control - Consolidate the programming of public and educational access cable channels in one facility.**

   a. Install two (2) Castus QuickRoll Model #QR 203 with (2) HD-SDI and/or IP recordable inputs and three (3) HD-SDI and/or IP outputs, two (2) additional HD-SDI and/or IP playout channels, two (2) 32TB RAID6 upgrades and one (1) Castus Quickstream Server with Video-on-Demand and Live Streaming service including Roku support option (2TB VOD cloud storage).
   b. Provide basic Castus training support including twenty (20) short training videos and two (2) hours of phone support, after the install, at no charge.
   c. Provide and install three (3) channels of loudness control. The three (3) loudness control processors shall be connected to the matrix switcher inputs and outputs. The three (3) loudness control processors shall be mounted in one (1) Ross Video OpenGear frame.
   d. Provide and install one (1) Link ACE-2000 closed caption processor including the first year of support.
   e. Provide and install one (1) Link SCE-492 closed-captioning encoder including the first year of support.
   f. Provide and install one (1) quality control monitor/scope.
   g. Provide and install one (1) rackmount audio monitor.
   h. Provide and install one (1) 16-input multi-viewer and one (1) 49-inch wall-mount display for confidence monitoring of Master Control sources.
   i. Provide and install one (1) 4-inch, wall-mount, 6-digit, red LED clock in the Master Control Room.
   j. Provide and install two (2) Middle-Atlantic 2-6M slim series rack with one (1) rackmount AC power strip, onto one (1) OFE master control desk. Chairs for master control to be provided by owner.

k. Assist owner in creating basic video workflows to prepare media for on-air playback
l. Coordinate with owner in configuring connectivity between the Emily Griffith Technical College building at 1860 Lincoln Street and the Community Media Center at 21st and Arapahoe street to receive the live feed of Denver Public School board meetings.
m. Install and connect the necessary equipment to feed the Comcast headend center with the community and educational access cable channels.

2. **Community Media Studio <u>- Provide a state-of-the-art production studio and control room that the Denver community can use to produce content.</u>**

a. Provide and install three (3) custom/engraved BSP panels for the Studio to cover 24" x 24" x 4" wall boxes provided by the general contractor. Each plate shall be configured with at least (4) SDI outputs, (2) SDI inputs, (2) SDI Prompter outputs, (2) SDI talent monitor outputs, (2) tri-level sync outputs, intercom channel A & B, IFB Channels 1, 2, 3 and 4 outputs, (6) network connections, two (2) camera (fiber optic-OpticalCon) connections, (2) DMX/RJ45 connections for lighting control, four (4) analog audio inputs, and (14) blanks for future growth. Final configuration of panel to be determined in coordination with owner during detailed design process. Cable installation and termination to the DMX lighting control connectors on the BSP panels shall be provided by the lighting contractor.
b. Provide and install two (2) full-range audio speakers on the lighting grid in the Studio. Provide and install one (1) single-channel audio amplifier to power the two (2) lighting grid audio speakers.
c. Provide and install one (1) Dante-based monitor hub and six (6) personal monitor mixers on mounting stands for use by musicians/vocalists during musical productions in the Studio. Provide six (6) professional headphones to use with the six (6) personal monitor mixers. Provide two (2) powered monitor floor wedges for use by musicians/vocalists.
d. Provide and install two (2) manned cameras in the studio. The manned camera systems shall be provided with lens, lens controls, 7-inch viewfinder, pedestal, 17-inch teleprompter, 24-inch talent monitor, CCU, RCP, intercom headset and 30-foot studio camera cable. Provide one (1) spare 30-foot studio camera cable.
e. Provide and install three (3) pan/tilt/zoom cameras in the Studio. Two of the three PTZ cameras shall include a pedestal, teleprompter (PTZ camera inside), 24-inch talent monitor and tally light. One of the three PTZ cameras shall include a pedestal and tally light only.
f. The owner will provide one (1) computer for teleprompter software operation. Provide the ability to connect this computer in either the control room or studio. Provide and install one (1) scalar and one (1) 24-inch display for the OFE teleprompter computer.
g. Provide and install one (1) pan/tilt/zoom camera controller in the Control Room.

h. Provide and install one (1) digital audio console with Dante connectivity in the Control Room. Provide and install two (2) active audio monitors for the digital audio console.

i. Provide and install six (6) wireless lavalier microphone systems and four (4) wireless handheld microphone systems. Provide one (1) 45RU equipment rack to be located in the studio to hold wireless microphone receivers, IFB transmitters, and the studio monitor amplifier. Provide and install antenna combiners for the wireless microphone systems. Provide two (2) rack-mount battery chargers and sixteen (16) lithium-ion batteries with the wireless microphone systems. Provide up to seven (7) 4RU locking equipment drawers in the studio equipment rack for holding wireless microphone transmitters, IFB receivers and other studio accessories.

j. Provide and install ten (10) wired microphones, seven (7) wired drum kit microphones, ten (10) direct boxes, ten (10) microphone boom stands, and twenty-five (25) microphone cables, for use in the studio.

k. Provide and install one (1) Newtek video production switcher with one (1) Newtek I/O connection device and one (1) 2ME control panel. The video switcher shall be capable of recording and video playback. Provide two (2) 49-inch displays connected to the two (2) multi-viewer outputs of the video production switcher. Provide one (1) 24-inch display to be utilized for a "video playback" position, next to the video production switcher operator (TD). The video production switcher shall also contain internal capabilities for web streaming to social media platforms such as Facebook and YouTube).

l. Provide and install one (1) tally light controller for the video production switcher. Provide tally connections, to include two (2) tally relays for the manned camera CCU's and three (3) tally lights, for the three (3) PTZ cameras.

m. Provide and install one (1) 2-graphic channel with key and fill character generator. The character generator (CG) shall be NDI-capable. Provide and install one (1) 24-inch display for operation of the CG in the Control Room.

n. Provide and install six (6) 49-inch displays on rolling stands in the Studio.

o. Provide and install one (1) wide-angle POV camera on the lighting grid of the Studio. Provide and install one (1) 49-inch display in the Control Room to provide the POV camera view to the Control Room technicians.

p. Provide and install one (1) 4-inch, wall-mount, 6-digit, red LED clock in the Control Room and one (1) 4-inch, wall-mount, 6-digit, red LED clock in the Studio.

q. Provide and install one (1) 2.3-inch wall-mount amber 100-minute Up/Down timer with one (1) thumbwheel remote control panel. The remote control panel shall be mounted in one (1) 3-gang tabletop box.

r. Provide and install two (2) 6RU Turret Racks on top of OFE furniture in the Control Room. The owner will provide the Control Room furniture and chairs.

s. Provide video connections to the studio switcher, studio CG, and studio cameras via either NDI or SDI protocol as determined during detailed design.

t. Design and build an audio over IP infrastructure using the DANTE protocol to connect appropriate audio sources in the facility with appropriate audio destinations as determined during detailed design. IP network cabling and switch infrastructure will be provided by owner.

u. Provide and turn over two (2) NDI to 3GSDI converters for use as required by DMMS personnel.

3. **Digital Studio <u>- Provide a state-of-the-art podcast studio that the Denver community can use to produce content.</u>**

a. Provide and install three (3) pan/tilt/zoom cameras, with NDI, in the Digital Studio. Two (2) of the three (3) PTZ cameras shall include a pedestal, a wall mount and tally light. One (1) of the three (3) PTZ cameras shall include a pedestal, a wall mount, a teleprompter (PTZ camera inside), a 24-inch talent monitor and a tally light.

b. Provide and install one (1) pan/tilt/zoom camera controller in the Digital Studio/

c. One (1) OFE PC computer shall be provided by the owner for teleprompter software operation within the studio. Provide and install one (1) scaler, to properly send images to the teleprompter.

d. Provide and install one (1) Newtek TC410Plus video production switcher with one (1) 1ME control panel. The video switcher shall be capable of recording and video playback. Provide two (2) 24-inch displays connected to the two (2) multi-viewer outputs of the video production switcher. The video production switcher shall also have internal capabilities for web streaming to social media platforms such as Facebook and YouTube.

e. Provide and install one (1) tally light controller to the video production switcher.

f. Provide and install one (1) digital audio console, with Dante connectivity, in the Control Room. Provide two (2) active audio monitors for the digital audio console.

g. Provide and install four (4) professional broadcast microphones with four (4) boom arms in the Digital Studio. Provide and install one (1) professional, 4-channel microphone pre-amp processor in the Control Room.

h. Provide and install one (1) audio distribution amplifier, six (6) under-table mount headphone volume controls, six (6) headphones and six (6) headphone holders in the Digital Studio.

i. Provide and install one (1) 4-inch, wall-mount, six-digit, red LED clock in the Digital Studio.

j. Provide and install one (1) 2.3-inch, wall-mount, amber, 100-minute Up/Down timer with one (1) thumbwheel remote control panel. The remote control panel shall be mounted in one (1) 3-gang tabletop box in the Digital Studio.

k. The owner will provide furniture for placement of the technical equipment. The owner will provide chairs for the Digital Studio.

l. Lighting fixtures, infrastructure and lighting control for the Digital Studio will be provided by the lighting contractor.

4. **Post-production Systems - Provide an audio/video post-production center with current hardware and software tools to be used by the Denver community.**

    a. Install four (4) OFE editing computers at four (4) OFE workstation furniture locations. Install and configure the software on each computer based on a template provided by the owner. Coordinate IP addresses with the owner. All editing software and additional computer accessories shall be provided by the owner. Chairs will be provided by the owner.
    b. Provide and install two (2) editing systems on OFE furniture provided and installed by others. Chairs will be provided by the owner. Each editing system shall include one (1) OFE computer. Provide and install two (2) 32-inch desktop displays, one (1) 4K interface, one (1) 24-inch reference display and two (2) active audio speakers. Install and configure the software on each computer based on a template provided by the owner. Coordinate IP addresses with the owner. All editing software and additional computer accessories shall be provided by the owner.
    c. Provide one (1) audio post-production (DAW) mixing surface, which will be utilized at either of the two (2) editing systems.
    d. Connect each of the two (2) edit suites to the Dante audio over IP network and to the 10 GB storage network. Network cabling and switches will be provided by the owner. Install one (1) wall-mounted display provided by the owner in each edit suite. Provide and install two (2) HDMI cables to connect the two (2) edit computers to the wall-mounted displays. Provide and install one (1) additional HDMI cable to connect a wall plate to a future display in the Edit/Storage room.

5. **Community Classroom - Provide a classroom equipped with current post-production hardware and software tools in which to offer video and audio production and post-production courses to the Denver community.**

    a. Install eighteen (18) OFE computers at eighteen (18) OFE student desks. Chairs will provided by the owner. Install and configure the software on each computer based on a template provided by the owner. Coordinate IP addresses with the owner. The owner will provide an additional computer for the classroom instructor.
    b. Mount and connect two (2) OFE flat panel displays using owner-provided mounts. Each display shall be connected to the IP network, HDSDI routing switcher, and the RF Distribution System. Provide and install one (1) SDI to HDMI converter at each display for connection to the HDSDI routing switcher.

    c.   Provide and install two (2) HDMI cables from wall plates to the two (2) OFE flat panel displays.

6. <u>Provide video, audio and RF monitoring in reception and office areas.</u>

    a.   Provide and install one (1) SDI to HDMI converter at one (1) OFE flat panel display in the Reception Area for connection to the HDSDI routing switcher.

    b.   Provide and install three (3) SDI to HDMI converters at three (3) OFE flat panel displays in three (3) offices for connection to the HDSDI routing switcher.

    c.   Provide and install one (1) SDI to HDMI converter at one (1) OFE flat panel display in the Workstation Area for connection to the HDSDI routing switcher.

    d.   Mount and connect five (5) OFE flat panel displays using owner-provided mounts. Each display shall be connected to the IP network, HDSDI routing switcher, and the RF Distribution System.

    e.   Provide and install three (3) HDMI cables from wall plates to the flat panel displays in the 3 offices.

7. <u>Provide cable terminations and IP Network connectivity and integration.</u>

    a.   Terminate HDSDI video and RF cables at wall plates located in the reception area, three (3) offices, CM workstation area, Edit Suites and Edit/Storage room, Master Control, and Classroom. Provide HDSDI video and RF cables to connect wall plates to the wall-mounted displays in these areas.

    b.   Coordinate with DMMS project manager and the owner's Network Design & Management team or their vendors to ensure necessary systems are connected & integrated to the Video and Audio IP Network (Media LAN).

8. <u>Provide Shared Storage System and Media Asset Management to support the storage of program content for the Community Media Center.</u>

    a.   Provide and install transcoding equipment to convert NDI (Newtek) to Studio Network Solutions EVO storage system.

    b.   Provide and install one (1) Studio Network Solutions EVO shared storage solution in the Technical Core equipment racks. Storage solution to consist of 192 TB raw capacity, a minimum of two (2) 1GB Ethernet Ports and 3 ETH-2x10G 10 GB Copper Ethernet Ports.

    c.   Provide one (1) SATA 7.2K 12.0 TB-3Gbs spare hard disk drive.

    d.   Provide one EVO 1300W spare power supply.

    e.   Provide Studio Network Solutions ShareBrowser asset management software (included with SNS EVO).

9. <u>Provide Technical Core Systems to support the Community Media Center.</u>

a. Utilize OFE equipment racks and electrical (PDU) equipment and other rack accessories, provided by the owner.
b. Provide and install one (1) digital matrix intercom master frame, with one (1) digital connection card, one (1) 16-port 4-wire audio card and one (1) Dante audio I/O card, in the technical core equipment racks. Provide and install one (1) license of matrix configuration software on one (1) OFE computer. The OFE computer shall be located in the technical core equipment racks.
c. Provide and install two (2) 4-wire to 2-wire converters, one (1) four-channel, 2-wire power supply and one (1) two-channel, 2-wire power supply in the technical core equipment racks. The converters and power supplies shall provide the hardwired IFB channels (4) and hardwired intercom channels (2) at each BSP Studio wall plate.
d. Provide and install one (1) twelve-button rackmount intercom remote station with one (1) gooseneck microphone in the Technical Core equipment racks.
e. Provide and install one (1) twelve-button tabletop intercom remote station with one (1) single-muff headset and one (1) gooseneck microphone for the Master Control area.
f. Provide and install two (2) twelve-button tabletop intercom remote stations with two (2) single-muff headsets and two (2) gooseneck microphones for the two (2) Edit Suites.
g. Provide and install one (1) twelve-button tabletop intercom remote station with one (1) single-muff headset for the Digital Studio.
h. Provide and install two (2) twelve-button tabletop intercom remote stations with two (2) single-muff headsets for the Studio Control Room.
i. Provide and install one (1) twelve-button tabletop intercom remote station with one (1) gooseneck microphone for the audio position in the Studio Control Room.
j. Provide and install two (2) wireless IFB transmitters, one (1) signal splitter, one (1) amplifier and one (1) antenna, for transmission to two (2) wireless IFB receivers with two (2) earpieces (1 spare earpiece included). The wireless IFB antenna shall be installed in the Studio.
k. Provide and install one (1) dual-channel wireless intercom main station in the Technical Core equipment racks, with the antennas remoted near the Studio. Provide two (2) wireless intercom belt-packs with two (2) single-muff headsets. One (1) NiMH battery charger, with batteries shall be included with the wireless intercom belt-packs.
l. Connect the digital matrix intercom system 4-wire audio card to the two (2) manned cameras CCUs located in the Technical Core equipment racks.
m. Provide four (4) single-channel belt-packs and four (4) single-muff headsets, for connection to the BSP panels in the Studio.
n. Provide four (4) single-channel IFB belt-packs with six (6) earpieces (2 spare) for connection to the BSP panels in the Studio.
o. Provide and install one (1) six-line telephone hybrid and one (1) Dante I/O interface in the Technical Core equipment racks. Provide one (1) digital hybrid

handset to be connected in either the Studio Control Room or the Digital Studio as required. The telephone lines shall be provided by the owner.

p. Provide and install one (1) openGear frame in the Technical Core equipment racks. The openGear frame shall contain one (1) master clock (Audio Tone, HD bars, HD black, AES/LTC, and tri-level sync), one (1) AES to analog audio converter, one (1) analog audio distribution amplifier and three (3) utility video distribution amplifiers.

q. Provide and install one (1) 3GSDI (1080p) 64-input x 64-output matrix switcher, for routing of SDI input sources to SDI output destinations.

r. Provide and install four (4) 32 x 2 point, 3GHz video patch bays, to the inputs and outputs of the 64 x 64 3GSDI video matrix switcher. Ford shall provide one (1) additional 32 x 2 point 3GHz video patch bay for miscellaneous sources and destinations.

s. Provide and install five (5) matrix switcher remote panels, for manual changes. The remote panels shall be located as follows: (1) Technical Core equipment racks, (1) Studio Control Room, (1) Master Control and two (2) in the Edit Suites.

t. Provide and install one (1) quality control monitor/scope.

u. Provide and install one (1) rackmount audio monitor.

v. Provide and install one (1) 4-inch, wall-mount, six-digit, red LED clock in the Technical Core.

w. Utilize OFE network switches provided by the owner.

x. Provide and install two (2) WAP (wireless appliances), at the ceiling, above/near the Video Studio Control Room and the Digital Studio Control Room. The WAP's shall provide the ability for the digital audio mixing consoles to utilize remote iPAD apps, for remote control of the consoles. Any Apple iPAD devices or control apps shall be the responsibility of the owner.

y. Provide and install six (6) duplex, single-mode fiber cables with LC connectors from the Technical Core equipment racks to the fiber point of demarcation (MPOE Room) for Comcast connections (approximately 50 feet). Conduits shall be provided by the building owner.

z. Provide and install four (4) video processors in the Technical Core equipment racks.

aa. Provide and install one (1) 4-input AJA KiPro Ultra Plus ProRes recorder with two (2) SSD drives and one (1) SSD reader. The AJA KiPro Ultra Plus shall be installed in the Technical Core equipment racks or the Studio Control Room. The KiPro Ultra Plus is equipped with advanced remote control and configuration via web browser.

bb. Cable trays in the Technical Core shall be provided by the building owner.

10. **Provide a QAM modulated RF distribution system to feed wall-mounted flat panel displays throughout the facility.**

a. Provide and install one (1) 4-channel HDMI to QAM modulator in the Technical Core equipment racks.

b. Provide and install one (1) 1-channel HDMI to QAM modulator in the Technical Core equipment racks.

c. Provide and install one (1) 8 x 1 RF combiner in the Technical Core equipment racks.

d. Provide and install one (1) 35dB RF amplifier in the Technical Core equipment racks.

e. Provide and install two (2) 1 RU equipment rack shelves in the Technical Core equipment racks for the cable TV tuners.

f. Install five (5) Comcast cable TV tuners on the two (2) equipment rack shelves.

g. Connect the HDMI outputs of the five (5) Comcast cable TV tuners to the HDMI inputs of the QAM modulator.

h. Provide and install one (1) 22-inch 1080p display onto one (1) 3RU rack blank, in the Technical Core equipment racks. The 22-inch display RF input shall be connected to the RF Test output of the 35dB RF amplifier.

i. Connect the LAN connection of the QAM modulator to an OFE network switch, located in the Technical Core equipment racks.

j. RF infrastructure beyond the one (1) RF amplifier in the Technical Core equipment racks (cabling to TV's, splitters, taps, additional amplifiers), shall be provided by others.

11. <u>**Provide submittals as specified in this section.**</u>

a. Provide a detailed schedule of all work to be completed by systems integrator prior to commencement of any work, including design work.

b. Provide a list of and manufacturer's data sheet on all products to be incorporated within the work prior to commencement of equipment installation.

c. Provide functional diagrams of all systems for approval prior to beginning any on-site work. Functional drawings must indicate number of cables and connectors to be provided at any wall connector panels.

d. Provide detailed design drawings of all systems integrator designed systems for approval prior to installation of equipment. Design drawings should include video, audio and control one-line drawings, floor plan drawings, rack and console elevation drawings, and layout drawings of patch panels, patch panel label strips, and connector panel layout and labeling.

e. Provide a schedule of cable types and colors proposed for the work prior to any cable pulls. Note that the facility standard for data cabling is Category 6A. Note that all cable must be plenum rated.

f. Provide final as-built drawings and cable schedules for all completed work.

g. Provide an original copy of all manufacturer service and/or operations manuals for which the manufacturer provides such manual(s) with delivered equipment.

12. **Delivery, Storage and Handling**

    a. Ship all products in their original container.
    b. Provide protective covering during installation.
    c. At no cost to the project, replace any product damaged during storage or installation.
    d. Provide a list of all equipment delivered at the time of delivery, including manufacturer, model, description and serial number, if any.
    e. Provide personnel to assist the owner in applying property tags to all delivered equipment prior to or during installation, including any de-mounting of equipment needed to visually observe the serial number.

13. **Project Conditions**

    a. Verify all site conditions applicable to this work.
    b. Notify owner's project manager in writing of discrepancies, conflicts or omissions promptly upon discovery.

14. **Execution of Work**

    a. It is the responsibility of the system integrator to supply systems in fully working order.
    b. Provide and install any cabling, cable management hardware, terminators, mounting hardware, and accessories required for the installation of the technical systems.
    c. Obtain all permits necessary for the execution of any work pertaining to the installation or to operation by the owner, including paying any charges or fees.
    d. Execute all work in accordance with the National Electrical Code, the National Electrical Safety Code, and all applicable State and Local codes, ordinances and regulations.
    e. Install all equipment in accordance with the Americans with Disabilities Act where applicable.
    f. Assign a specific project team to the CMC. Staff and their roles are listed in Exhibit A. Contractor shall report any staff assignment changes to the City at least two weeks prior to departure from project.

15. **Configuration, Testing, Verification and Demonstration.**

    a. Configure equipment as detailed in the Equipment List revised May 11, 2020 required to produce completely operational systems.
    b. Verify correct operation of all equipment and systems for the functions they were designed to perform.

c. Test all system integrator provided or terminated cabling under signal conditions for which the cable is designed. Maintain test reports on all cables tested, subject to inspection by owner's representative.
d. Demonstrate correct operation of all equipment and systems to the owner's representative(s).
e. Provide tools, test equipment and materials necessary to make any adjustments or repairs to the equipment provided.

16. Instruction of the Owner's Personnel

a. After final completion, provide up to 24 hours of instruction in the operation and maintenance of the equipment and systems. Provide separate sessions for operations and maintenance personnel if requested.
b. All operational and maintenance manuals as well as as-built drawings must be on site at the time of the instruction.
c. Prior to the instruction, submit for approval a training outline for each area of the facility listing the area and details of the instruction to be provided and the personnel to whom the training will apply.

17. Project Timeline

Work shall be performed according to the milestone timeline below. Timelines may change based on mutual agreement between DMMS and the Contractor.

Phase	Milestone	Notes	Duration (# of DAYS after contract execution)	Duration (# of WEEKS after contract execution)
	Systems Integrator Contract & Services Total		**68d**	**14w**
Phase 1 - Design	Fully Executed Contract		5d	1w
Phase 1 - Design	Finalize Functional Drawings & Approve	To be completed simultaneously with contracting process.	0	0
Phase 1 - Design	95% Equipment List Approval		0	0
Phase 1 - Design	Finalize & Approve Detailed Design Drawings		15d	3w
Phase 2 - Equipment Order	Lead time for equipment order/ Pre-build & In Shop Testing	Equipment to be ordered as soon as contract is in place and functional drawings are approved. Pre-build of routing switcher and patch panels off-site.	20d	4w
Phase 3 - Installation	SI Work Begins Onsite	On-site cable pull and termination of classroom, office and edit room cabling. Mounting of wall-mounted monitors.	15d	3w
Phase 3 - Installation	Systems Installation	Racks are currently in place and ready for	55d	11w

		equipment. Complete tech core, classroom, digital studio, studio, CR, edit room and master control installation.			
Phase 4 - Testing & Training	Systems Test and Training			65d	13w
Phase 5 - Go Live	Final City Inspection and Acceptance			68d	14w

18. **Payment Schedule**

Contractor shall bill DMMS monthly. Payment shall be contingent upon written acceptance from DMMS that the equipment has been received and the work has been successfully completed by Contractor as detailed in each invoice presented. DMMS shall retain 10% (ten percent) of each payout. All-retainage shall be paid after Phase 5 is successfully completed and DMMS has given final written acceptance/approval of project completion.

19. **Project Milestones**

For each milestone, a DMMS authorized representative shall give final, written approval that individual deliverables and milestones have been completed to the City's standards and no outstanding issues exist. Contractor, and DMMS shall provide reasonable turnaround times on critical decisions, information requests, and approvals required to ensure the project tasks and deliverables are completed on time. DMMS, along with Contractor will collaborate on regularly scheduled status calls: to be held at least weekly, to provide status updates, discuss open issues, project risks, etc.

20. **Provide support and licensing agreements for the technical equipment as follows:**

    a. Chyron-Hego Prime LT Character Generator
        i. 1 Day Commissioning – At Facility
        ii. 2 Days Prime Essentials Training – At Facility
        iii. Travel and Expenses
        iv. Three (3) Years Extended Support Bundle
    b. Newtek Tricaster TC1 and TC410Plus Video Production Switchers, NRSD Server
        i. 2 Days Commissioning – At Facility
        ii. 2 Days Onsite Training – At Facility
        iii. 1 Travel Day Fee
        iv. 3 Onsite Training Travel Day Fee
        v. 1 Travel and Expenses for Onsite Commissioning and Training
        vi. 2 Years ProTek with Premium Access + 1 Year ProTek with Premium Access Renewal for Tricaster TC1 Switcher

      vii. 2 Years ProTek + 1 Year ProTek Renewal for Tricaster Two Stripe Remote Control Panel

     viii. 2 Years ProTek + 1 Year ProTek Renewal for NC1 I/O.

      ix. 2 Years ProTek with Premium Access + 1 Year ProTek with Premium Access Renewal for Tricaster TC410Plus Switcher

      x. 2 Years ProTek + 1 Year ProTek Renewal for TC1SP Remote Control Panel

      xi. 2 Years ProTek + 1 Year ProTek Renewal for NRSD Remote Storage Server

c. Castus Video Automation System

      i. 3 Year Hardware Warranty

      ii. Three (3) years of Castus Hosting Service is Included

     iii. Online Training Videos – Free

     iv. Online Training Per Hour – Hourly Rate of $125/hour. Providing six (6) hours of phone training.

      v. Onsite Training Per Day - $1,500 Per Day (Travel Expenses Extra)

d. Studio Network Solutions EVO Server System (16-Bay)

      i. 3 Years - Lifetime QComplete Standard Level Support – Phone & Email Support during normal SNS business hours, M-F, 9am – 6pm US/CST

      ii. 3 Year Extended Hardware Maintenance-Hardware repair/replacement for 12 months.

     iii. Phone Installation/Configuration (Data Migration/Backup is not Included)

     iv. One-Time 4 Hour Remote/Phone-Assisted ShareBrowser and EVO Training Service

e. Link Electronics ACE-2000/492 Optional Additional Warranty After 1st Year

      i. Years 2 & 3

21. Delete Alternate Equipment and Services

a. Provide an optional alternate to the proposal and this scope of work to delete certain equipment and associated design, installation, testing, commissioning and support services related to the master control systems as follows:

      i. QAM Modulation equipment

    ii. Master Control monitoring and associated equipment including displays, audio monitor and multiviewer.

    iii. Reduction of installation services associated with items i and ii above.

b. The reduction of installation services will also include the following:

    i. Installation of Ross audio processing cards into 1 OFE Open-Gear Frame with cable terminations provided by owner.

    ii. Installation of Castus products into OFE equipment racks with cable terminations by owner.

    iii. Engineering services to provide design and as-built drawings for items i and ii above.

c. Prior to final design completion the City will advise if any portion or the entirety of the delete alternate option must be invoked.

Equipment List

PRODUCTION STUDIO & CONTROL RM

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Quantity	Description	Price	Extension
2.00	PANA.AKHC3800GS CAME,THREE 2/3"CCDS	14,207.00	28,414.00
2.00	PANA.AK-HVF70GJ ACCE,7"VIEWFINDER FOR AKHC3800	2,754.00	5,508.00
2.00	PANA.AKHCU200PS CAME,RU CAMERA CONTRL	6,775.00	13,550.00
2.00	PANA.SHAN-TM700 ACCE,TRIPOD ADAPTOR PLATE	440.00	880.00
2.00	FUJI.XA20SB85BR LENS,HD 20X 2/3" ZOOM LENS	6,148.00	12,296.00
2.00	FUJI.MS-01 KIT,SEMI-SERVO FOR BERM LENS	1,838.00	3,676.00
2.00	LIBE.RSP850PDS PRO STUDIO PEDESTAL SYST	7,900.00	15,800.00
3.00	PANA.AWHN130WPJ CAME,PTZ,3MOS,20X,POE+,NDIHX	7,203.00	21,609.00
1.00	PANA.AW-RP150GJ ADVANCED PTZ JOYSTICK CONTROL	4,355.00	4,355.00
3.00	IKAN.EI7100HKIT AIR-CONTRL PED KIT-7100H HEAD	2,813.00	8,439.00
1.00	MARS.CV502-MB CAME,MINI,BROADCAST,POV,2.5MP	250.00	250.00
1.00	MARS.CVM-11 MOUN,11",ARTICULATING,ARM,LOCK	57.00	57.00
1.00	MARS.CVM-12 C-CLAMP MOUNT, 1/4-20	25.00	25.00
9.00	LG.49UT640SOUA 49" LCD DISPLAY,4K,400 NIT	831.00	7,479.00
3.00	CHIE.MTM1U MOUN, UNIVERSAL MOUNT	142.00	426.00
6.00	CHIE.MFCUB CART, 4'-6' MFP,MOBILE CART,BL	617.00	3,702.00
1.00	META.TLC-8S AV,TALLY CONTOLLER,TRICASTER	495.00	495.00
3.00	META.TL2-C ACCE,CAMERA TALLY LIGHT	50.00	150.00
2.00	METASETZ RU-2 RELAY UNIT	40.00	80.00
1.00	TELEPROMPTER PC COMPUTER	.00	.00
1.00	DECI.MD-HX CROSS-CONVERTER/SCALER/RATE CO	329.00	329.00
2.00	CLEA.CC-300-X5 HEAD,SGL EAR HEADSET 5-PIN XLR	324.00	648.00
7.00	AJA.HI5-PLUS VIDE,HDMI-3GSDI,DSLR FORMAT	316.00	2,212.00
1.00	CUSTM BSP STUDIO WPLANEL-QTY 3	3,667.00	3,667.00
10.00	SHUR.SM58LC MIC,UNIDIR,DYN,LESS CABL	100.00	1,000.00
1.00	SHUR.PGADRUMKIT 7 PIECE DRUM KIT MIC	435.00	435.00
10.00	WHIR.IMP2 BOX,DIRECT,STANDARD	45.00	450.00
10.00	ULTI.JS-MCTB200 STAN,TRIPOD,BOOM,BLACK	21.00	210.00
10.00	WHIR.MK415 CABL,XLRF-XLRM,15',MIC	25.00	250.00
10.00	WHIR.MK425 CABL,MIC,25'	28.00	280.00
5.00	WHIR.MK450 CABL,MIC,50'	41.00	205.00
2.00	ALLEN-HEATH AH-DT168 16X8 DANT	1,693.00	3,386.00
1.00	ALLE.AHME-U MIXE,POE ROUTER FOR AH SYSTEMS	1,499.00	1,499.00
6.00	ALLE.AH-ME-1 MIXE,42CH,PERSONAL MONITOR	562.00	3,372.00
1.00	ALLE.AHMDANTEA CARD,AUDIO CARD,ILIVE,DANTE	1,298.00	1,298.00
6.00	ULTI.MC-05B STAN,MIC	24.00	144.00
6.00	AKG.K240MK2 SEMI OPEN STUDIO HEADPHONE	132.00	792.00
5.00	MACK.SRM350V3 SPEA,10",2-WAY,POWERED SPEAKER	378.00	1,890.00
1.00	ALLE.AH-SQ-7 MIXE,48CH,33FADR,7"TOUCH,96KHZ	4,703.00	4,703.00
1.00	ALLE.AHMSQDANTA CARD,64X64 SQ DANTE 96KHZ	703.00	703.00
2.00	JBL.305PMKII SPEA,POWERED,5",TWO-WAY,BI-AMP	144.00	288.00

City and County of Denver
System Integrator for DMMS
REVISED May 11, 2020

Ford Audio-Video Systems, LLC
Submitted By: Robin Heywood, Division Sales Manager
Page 2 of 11

Quantity	Description	Price	Extension
1.00	JBL.CSA180Z AMP,1X80W,FANLESS,70/100V	337.00	337.00
2.00	JBL.CONTROL23T SPEA,3.5",2WAY,50W,W/XFRMR,BLK	109.00	218.00
3.00	SHUR.UA844+SWB ACCE,DISTRO,ANT/PWR,5WAY,W/CBL	474.00	1,422.00
6.00	SHUR.QLXD14-J50 MIC,WX,BDYPAK,INSTR,572-636MHZ	973.00	5,838.00
6.00	SHUR.WL183 MIC,WIRELESS,OMNI LAV	89.00	534.00
4.00	SHUR.QLXD24SM58 MIC,DIGITAL HANDHELD SYS,SM58	999.00	3,996.00
16.00	SHUR.SB900A BATT,LITHIUM ION,RECHARGABLE	94.00	1,504.00
3.00	LG.24UD58-B DISP.MON,24" ULTRA HD IPS 4K	342.00	1,026.00
2.00	PANA.AKHRP1000G REMOTE OPERATION/SHADER	4,371.00	8,742.00
2.00	PROM.ROBO-HB ROBO-HIGH BRIGHT ROBOPRMPR	4,150.00	8,300.00
2.00	SHUR.SBRC-US BATT. BATTERY RACK CHARGER	643.00	1,286.00
8.00	SHUR.SBC-AX BATT,AXIENT CHARGING MODULE	104.00	832.00
1.00	MIDD.BGR45SA27 RACK,45RU,27"D,STAND-ALONE	1,163.00	1,163.00
7.00	MIDD.TD4LK RACK DRAWER,4RU,W/LOCK	195.00	1,365.00
1.00	MIDD.PDT-1415C POWE,14 OUTLETS, 15A, CORDED,	155.00	155.00
2.00	PROMPTER PEOPLE FLEXP-S17HB PR	2,399.00	4,798.00
2.00	PROMPTER PEOPLE MON-TAL24HB	1,550.00	3,100.00
		=========	
		Sub Total	199,568.00

PROD STUDIO/CNTRL RM-CHYRON

Quantity	Description	Price	Extension
1.00	CHYRON PRIME CSTM Q-11717-1	18,746.00	18,746.00
		=========	
		Sub Total	18,746.00

PROD STUDIO/CNTRL RM-NEWTEK

Quantity	Description	Price	Extension
1.00	NEWTEK CSTM QTE EST38007	49,309.00	49,309.00
		=========	
		Sub Total	49,309.00

DIGITAL STUDIO & CONTROL ROOM

Quantity	Description	Price	Extension
3.00	PANA.AWHN130WPJ CAME,PTZ,3MOS,20X,POE+,NDIHX	7,203.00	21,609.00
1.00	PANA.AW-RP150GJ ADVANCED PTZ JOYSTICK CONTROL	4,355.00	4,355.00
3.00	VADD.5352000223 ACCE,MODEL 700 WALL BRACK	221.00	663.00
3.00	IKAN.EI7100HKIT AIR-CONTRL PED KIT-7100H HEAD	2,813.00	8,439.00
1.00	OFE.PROMPTER COMPUTER	.00	.00
1.00	DECI.MD-HX CROSS-CONVERTER/SCALER/RATE CO	329.00	329.00
1.00	META.TLC-8S AV,TALLY CONTOLLER,TRICASTER	495.00	495.00
3.00	META.TL2-C ACCE,CAMERA TALLY LIGHT	50.00	150.00
4.00	SHUR.SM7B MIC,CARDIOID DYNAMIC STUDIO VO	432.00	1,728.00
4.00	AVLE.HM-50BA ACCE,STD-BOOM,DSK,STND,C-CLAMP	42.00	168.00
1.00	ALLE.AH-SQ-5 MIXE,48CH,17FADER,SQ-SERIES	2,822.00	2,822.00

1.00	ALLE.AHMSQDANTA CARD,64X64 SQ DANTE 96KHZ	703.00	703.00
1.00	RADI.RU-ADA8D AMP.DA,AUDIO DIST,2X8,1X16	372.00	372.00
1.00	RADI.PS-24AS POWE,SUPPLY,24,VOLT	23.00	23.00
6.00	WHIR.HBUC UNDER-COUNTER HEADPHNE BOX/VC	103.00	618.00
6.00	AUDI.ATH-M50X HEAD,DYNAMIC MONI,CLOSED BACK	132.00	792.00
6.00	K&M.16085 DESKTOP HEADPHONE MOUNT	32.00	192.00
1.00	OFE.DESK-FURNITURE	.00	.00
1.00	MIDD.PD-915R POWE,9OUT,15A,RCKMT,POWER STR	94.00	94.00
2.00	LG.24UD58-B DISP.MON,24" ULTRA HD IPS 4K	342.00	684.00
2.00	FOST.6301NX SPEA,4" ACTIVE MONITOR	330.00	660.00
1.00	PROM.ROBO-HB ROBO-HIGH BRIGHT ROBOPRMPT	4,150.00	4,150.00
1.00	PROMPTER PEOPLE MON-TAL24HB	1,550.00	1,550.00
1.00	TRIPPLITE SRSHELFKBD	381.00	381.00
1.00	FOCU.ISA428MKII AMP,4 CHANNEL MIC PREAMP	1,857.00	1,857.00
2.00	MIDD.2-6M RACK,6 SPACE (10 1/2") DESKTOP	195.00	390.00

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                                        Sub Total        53,224.00
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DIG. STUDIO/CNTRL RM-NEWTEK

Quantity	Description	Price	Extension
1.00	NEWTEK TC410PLUS QTE EST38007	10,290.00	10,290.00

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                                        Sub Total        10,290.00
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MASTER CONTROL SYSTEM

Quantity	Description	Price	Extension
1.00	LG.49UT640SOUA 49" LCD DISPLAY,4K,400 NIT	831.00	831.00
1.00	CHIE.MTM1U MOUN, UNIVERSAL MOUNT	142.00	142.00
1.00	ROSS.OGX-FR-CN OPENGEAR OGX FRAME-COOLING	1,926.00	1,926.00
1.00	ROSS.PS-OGX 600 WATT UNIVERSAL POWER SUPPL	637.00	637.00
3.00	ROSS AAP-8644 ADV AUDIO PROCSR	3,089.00	9,267.00
3.00	ROSS R2C-8644 4-SLOT REAR MODL	310.00	930.00
2.00	OFE.MODULATOR-COMCAST	.00	.00
1.00	OFE.DESK-FURNITURE	.00	.00
2.00	MIDD.210M RACK,10 SPACE (17 1/2") DESKTO	189.00	378.00
2.00	MIDD.PD-915R POWE,9OUT,15A,RCKMT,POWER STR	94.00	188.00
1.00	MARS.V-R173-DLW DISP.MON,17" HD RM WVFRM/VECTO	2,999.00	2,999.00
1.00	MARSHALL AR-DM-51B AUD MONITOR	1,141.00	1,141.00
1.00	VIEW.VZMV1602SD VIDE,DUAL MODE 16CH SDI MULTIV	1,640.00	1,640.00
3.00	ROSS AAP+DSP-UPMIX AEROMAX LIC	1,125.00	3,375.00

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                                        Sub Total        23,454.00
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MASTER CNTRL SYS-CASTUS

Quantity	Description	Price	Extension
1.00	C25 CASTUS CUSTOM ESTIMATE 1272	72,180.00	72,180.00
			=========
		Sub Total	72,180.00

MASTER CNTRL SYS-LINK ELECTRN

Quantity	Description	Price	Extension
1.00	LINK ELEC ACE-2000/SCE-492 BDL	47,485.00	47,485.00
			=========
		Sub Total	47,485.00

VIDEO AND AUDIO EDIT STATIONS

Quantity	Description	Price	Extension
2.00	OFE.APPLE COMPUTER-FOR EDIT SUITE	.00	.00
2.00	AJA.IO-4K-PLUS 12-BIT 4K/ULTRA HD, 12G-SDI	1,996.00	3,992.00
2.00	MARS.V-R241-4K DISP.MON,24" 4K BROADCAST 12G	5,775.00	11,550.00
4.00	OFE.APPLE COMPUTER-FOR EDIT WORKST	.00	.00
4.00	OFE.EDIT WORKSTATION FURNITURE	.00	.00
1.00	AVID S3 AUDIO CONTROL SURFACE	5,263.00	5,263.00
4.00	LG.32MU59-B DISP.MON,39",4K,PRO	455.00	1,820.00
2.00	AJA.HI5-PLUS VIDE,HDMI-3GSDI,DSLR FORMAT	316.00	632.00
4.00	YAMA.HS7 6.5" POWERED STUDIO MONITOR	252.00	1,008.00
			=========
		Sub Total	24,265.00

SHARED STORAGE/DIGI ASSET MGMT

Quantity	Description	Price	Extension
1.00	SNS EVO-192TB QTE EST35103	67,631.00	67,631.00
			=========
		Sub Total	67,631.00

VIDEO PRODUCTION CLASSROOM

Quantity	Description	Price	Extension
19.00	OFE.APPLE COMPUTER-VID PROD CLASSR	.00	.00
2.00	AJA.HI5-PLUS VIDE,HDMI-3GSDI,DSLR FORMAT	316.00	632.00
2.00	MISC.HARDWARE,CABLE,CONNECTORS	290.00	580.00
			=========
		Sub Total	1,212.00

TECHNICAL CORE SYSTEMS

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    Quantity    Description                                            Price       Extension
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        1.00    AJA.KUMO64X64  64 INPUT X 64 OUTPUT 3GSDI RTR         6,396.00       6,396.00
        5.00    AJA.KUMOCP2  PANE,2RU HRDWRE CONTROL PANE               716.00       3,580.00
        2.00    CLEA.IF4W4  AV,ENCORE,4CH,4 WIRE INTERFACE            1,120.00       2,240.00
        4.00    CLEA.RS701  TRAN,XLR 3,INTERCHANGABLE MIC               294.00       1,176.00
        1.00    CLEA.PS-702  POWE,POWER SUPPLY,2CH RACK MOU             827.00         827.00
        4.00    CLEA.TR50  RECE,SINGLE CHAN,TALENT,RECE                 224.00         896.00
        9.00    CLEA.CC-010A  IFB IN EAR HEADSET                        75.00         675.00
        1.00    TELE.BTR-800  INTE,WIRELESS,BASESTATION              4,634.00       4,634.00
        2.00    TELE.TR-800  ACCE,INTERCM,WIRELESS,BELTPACK          1,484.00       2,968.00
        1.00    TELEX BC-800NM4 CHARGER KIT                          1,140.00       1,140.00
        1.00    COBA.9960TG2REF  TEST,3G/HD/SD-SDI,SIGNAL GEN        3,277.00       3,277.00
        1.00    ROSS.DAC8418AR2  CRD,DUAL,AES,QUAD,ANAL,CONV           765.00         765.00
        3.00    ROSS.UDA8705AR2  AMP,ANALO VID UTILITY DIST AMP        328.00         984.00
        1.00    ROSS.ADA8405CR2  ANALOG AUDIO/TIMECODE DA              430.00         430.00
        2.00    ESE.ES391UTWALL  2.3" UP/DOWN WALL TIMER               633.00       1,266.00
        2.00    FSR.DSKB-3G  MOUN. 3 GANG DESKTOP MOUNTING              90.00         180.00
        2.00    UBIQ.UAPACIWUS  WIRELESS ACCESS POINT, WI-FI           124.00         248.00
        1.00    ROSS.OGX-FR-CN  OPENGEAR OGX FRAME-COOLING          1,926.00       1,926.00
        1.00    ROSS.PS-OGX  600 WATT UNIVERSAL POWER SUPPL            637.00         637.00
    2,000.00    BELD.1855A  WIRE,RG59/U,23AWG                            .65       1,300.00
    5,000.00    BELD.1695A  WIRE,RG6/U,#18,75OHM,PLEN,CATV             1.00       5,000.00
    4,000.00    WEST.254246  WIRE,4PR,24AWG,CAT 6,CMP                    .31       1,240.00
    1,000.00    WEST.25225B  WIRE,2C,16G,PLENUM,GRAY                     .21         210.00
    4,000.00    WEST.25291B  2,COND,22,7X30,BARE,SHLD,CMP                .11         440.00
    2,000.00    WEST.25292B  WIRE,1PR,#20,PLENUM,TWISTED                 .14         280.00
    1,000.00    CLAR.CW1622P  WIRE,PLENUM,16/2C+22/2C,ELEC              1.08       1,080.00
      600.00    CORN.012ESPT410  CABL,FREEDM,LST,PLENUM,SM,12F          1.87       1,122.00
        1.00    RDL.RU-MLB4P  DATA,DANTE,BI-DIREC,NTWK INTER           756.00         756.00
        4.00    ESE.ES943U  4" 6-DIGIT LED CLOCK RED WALLM             875.00       3,500.00
        1.00    RADI.PS-24AS  POWE,SUPPLY,24,VOLT                       27.00          27.00
        1.00    MANNED CAM FIBER CABLES/PANEL                        5,674.00       5,674.00
        1.00    MARS.V-R173-DLW  DISP.MON,17" HD RM WVFRM/VECTO      2,999.00       2,999.00
        9.00    CRES.CBL-HD-12  CABL,HDMI,12FT                         50.00         450.00
        1.00    MARSHALL AR-DM-51B AUD MONITOR                       1,141.00       1,141.00
        1.00    OFE.TECH COMPUTER - RACKMOUNT                            .00            .00
        1.00    OFE.RACKMOUNT DISPLAY                                    .00            .00
        1.00    OFE.RACKMOUNT KEYBOARD/MOUSE                             .00            .00
        5.00    BITT.B64T2MWTHD  AV,PATCH,2X32,2RU,MINI,WECO,CO      1,258.00       6,290.00
        1.00    TELOS HX6POTS/VSET6 QTE 17945                        4,190.00       4,190.00
        1.00    OFE.EQUIPMENT RACKS (LOT)                                .00            .00
       11.00    CRES.CBL-HD-3  CABL,HDMI,3'                           29.00         319.00
        1.00    CLEA.ECLIPSEHXD  4 SLOT 16 PORT MATRIX FRAME W/     15,900.00      15,900.00
        1.00    CLEA.EIPA16HX  ECLIPSE-HX AUDIO OVER IP INTER       7,500.00       7,500.00
        1.00    CLEA.MVX-A16-HX  16-PORT CARD FOR ECLIPSE-HX        9,320.00       9,320.00
        1.00    CLEA.EDANTE64HX  CARD,ECLIPSE-DANTE-HX 64 PORT      9,800.00       9,800.00
        1.00    CLEA.EHX  EHX ECLIPSE HX CONFIG SOFTWARE            1,265.00       1,265.00
       12.00    CLEA.CC-110-X4  LW,SINGLE-EAR STD HS XLR-4F           240.00       2,880.00
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Quantity	Description	Price	Extension
5.00	CLEA.110/340 MIC, 340MM STANDARD LENGTH GN	265.00	1,325.00
7.00	CLEARCOM V12PDDX4Y-IP DESKTOP	2,850.00	19,950.00
1.00	CLEARCOM VI-PNL-12P-X4 RACKMNT	2,800.00	2,800.00
1.00	CLEA.PS-704 POWE,4CH,RAC MNT,POWER SUPPLY	1,195.00	1,195.00
2.00	LECT.IFBT4-24 ACCE, IFB TX, BASE ST DIG HYB	1,177.00	2,354.00
1.00	LECT.RMP195 RACK,4CH. RACK MT F/ COMPACT R	282.00	282.00
2.00	LECT.IFBR1A-24 ACCE, BELT PACK REC W/ POUCH	727.00	1,454.00
1.00	LECT.ZFSC41 AV,PASSIVE SPLITTER, 4-WAY	133.00	133.00
1.00	LECT.UFM230 AV,UHF FLTR/AMP MODULE,230MH	433.00	433.00
1.00	LECT.A500RA ACCE,RX ANT UHF, 470-608 MHZ	24.00	24.00
4.00	ADDE.XDVIPROMS2 VIDE,DUAL DVI CATX EXTNDR	1,389.00	5,556.00
1.00	OFE.NETWORK SWITCHES (LOT)	.00	.00

			=========
		Sub Total	152,434.00

RECEPTION & OFFICE AREA

Quantity	Description	Price	Extension
5.00	AJA.HI5-PLUS VIDE,HDMI-3GSDI,DSLR FORMAT	316.00	1,580.00

			=========
		Sub Total	1,580.00

RF/QAM MODULATION EQUIPMENT

Quantity	Description	Price	Extension
1.00	THOR.H4ADHDQAMI CATV,4CH,HDMI/YPPBR/ENCDR	3,249.00	3,249.00
1.00	THOR.H1HDMIQAML FIBE,1 HDMI HD ENCODER/QAM	2,188.00	2,188.00
1.00	BLON.OC8D COMBINER	254.00	254.00
1.00	BLON.ACA-351000 AMP,APART COMPLEX,35DB,P-P DIS	190.00	190.00
5.00	CRES.CBL-HD-6 CABL,HDMI,6'	36.00	180.00
2.00	MIDD.U1V 1SP VENTED UTILITY SHELF	35.00	70.00
1.00	MISC.HARDWARE,CABLE,CONNECTORS	715.00	715.00
1.00	LG.22LJ4540 DISP,LED,22",CONSUMER	188.00	188.00
1.00	CHIE.FTR1U MOUN,SMALL,FLATPANEL,TILT,WALL	58.00	58.00
1.00	MIDD.EB3 PANE,3 SPACE (5 1/4") FLANGED	11.00	11.00

			=========
		Sub Total	7,103.00

TERENEX PROCESSOR

Quantity	Description	Price	Extension
4.00	BLAC.TERANEXEXP TERANEX EXPRESS AV VIDEO PROC.	1,395.00	5,580.00
1.00	MISC.HARDWARE,CABLE,CONNECTORS	250.00	250.00

			=========
		Sub Total	5,830.00

PRORES RECORDER

Quantity	Description	Price	Extension
1.00	AJA.KIPROULTRAP VIDE.4K/ULTRAHD 4CHAN REC	3,995.00	3,995.00
2.00	AJA.PAK2000-XO 2TB SSD MODULE EXFAT**	1,795.00	3,590.00
1.00	AJA.PAK-DOCK VID,EXTERNAL DOCK-AJA PAK MODU	295.00	295.00
1.00	MISC.HARDWARE,CABLE,CONNECTORS	290.00	290.00
			=========
		Sub Total	8,170.00

TERMINAL CONVERSION/DISTRIBUTN

Quantity	Description	Price	Extension
1.00	MISC.HARDWARE,CABLE,CONNECTORS	2,150.00	2,150.00
560.00	KING.2065-11-9 CONN,BNC FOR BELD 1418B	1.80	1,008.00
140.00	KING.2065-10-9 CONN,BNC FOR BELD 1695A/1694A	2.40	336.00
230.00	BTX.CD-EZRJ456 CONN,RJ45,CAT6	1.00	230.00
230.00	BTX.CD-EZ6SB CONN,SNAGLESS BOOT,EZRJ456	.40	92.00
350.00	TECH.F6N0.75BK ACCE,SPLIT WRAP,BLK,100'ROLL	1.20	420.00
3.00	PROC.E143-50PB 50',14 GUAGE,3-COND EXT CORD	80.00	240.00
16.00	PROC.E163-25 CABLE,25'3-IN AC EXTNSN CORD	25.00	400.00
12.00	PROC.E143-1PB CORD,EXT.1FT W/PWR BLK,14AWG	17.00	204.00
72.00	TYTO.SL4X4BK DUCT,4X4,BLK,SLOT, (120FT CS)	9.00	648.00
72.00	TYTO.TC4BK4 TOP,COVER,4" DUCT,(120FT CS)	2.00	144.00
40.00	NEUT.NC3FX-BAG CONN,XLR FEMALE BLACK W/	4.50	180.00
55.00	NEUT.NC3MX-BAG CONN,XLR MALE BLACK W/3 PIN	4.00	220.00
14.00	NEUT.NP3CBAG CONN,1/4" RIG TIP SLEEV	6.00	84.00
2.00	BITT.PCHV PATCHCORD HOLDER VIDEO BLACK	32.00	64.00
20.00	BITT.VPCM360075 CORD,36"MINI WECO PTCHCRD,BLAC	31.00	620.00
10.00	BITT.VPCM480675 CABL,VIDEO PATCHCORD 48"	32.00	320.00
5.00	MIDD.VTF1 PANE,1 SPACE (1 3/4") VENT PAN	13.00	65.00
25.00	MIDD.EB1 PANE,1 SPACE(1 3/4") FLANGED	8.00	200.00
15.00	MIDD.EB2 PANEL,2 SPACE (3 1/2") FLANGED	11.00	165.00
5.00	MIDD.EB3 PANE,3 SPACE (5 1/4") FLANGED	14.00	70.00
1.00	AJA IPT-HD1-10G CONVRTR/PROCSR	5,000.00	5,000.00
			=========
		Sub Total	12,860.00

CHYRON SERVICES/SUPPORT

Quantity	Description	Price	Extension
1.00	CHYRON PRIMEOS-2 DAY	3,282.00	3,282.00
1.00	CHYRON COMOS/01	2,098.00	2,098.00
1.00	CHYRON T&E	4,375.00	4,375.00
1.00	CHYRON PRI-ESC-BNDL (36 MOS)	7,592.00	7,592.00
			=========
		Sub Total	17,347.00

NEWTEK SERVICES/SUPPORT

Quantity	Description	Price	Extension
1.00	NEWTEK PTPATC1 PROTEK/PA/TC1	2,995.00	2,995.00
1.00	NEWTEK RPTPATC1 YR3 PROTEK	2,295.00	2,295.00
1.00	NEWTEK PTVMC12S PROTEK CPANEL	2,249.00	2,249.00
1.00	NEWTEK RPTVMC12S PROTEK YR3	1,499.00	1,499.00
1.00	NEWTEK PTNC1I/O PROTEK NC1 I/O	1,499.00	1,499.00
1.00	NEWTEK RPTNC1I/O PRTK NC1 YR3	999.00	999.00
1.00	NEWTEK PTPATC410P PRTK TC410P	1,995.00	1,995.00
1.00	NEWTEK RPTTC410PA PRTK 410 Y3	995.00	995.00
1.00	NEWTEK NRSD-PT PROTEK NRSD	1,275.00	1,275.00
1.00	NEWTEK NRSD-RPT NRSD PRTK YR3	845.00	845.00
1.00	NEWTEK NRS-OC NRSD OSITE COMM	2,745.00	2,745.00
1.00	NEWTEK COMMISSIONING	1,195.00	1,195.00
2.00	NEWTEK ONSITETRNG	1,995.00	3,990.00
2.00	NEWTEK TRAVELDAYFEE	500.00	1,000.00
3.00	NEWTEK ONSITETRNGTRVLDAY	75.00	225.00
1.00	NEWTEK TRAVELANDEXPENSES	2,000.00	2,000.00
1.00	NEWTEK PTTC1SP PROTEK 2YRS	1,095.00	1,095.00
1.00	NEWTEK RPTTC1SP PROTEK YEAR 3	695.00	695.00
		Sub Total	29,591.00

SNS SERVICES/SUPPORT

Quantity	Description	Price	Extension
3.00	SNS SVC934S-STANDARD SUPPT-1YR	3,500.00	10,500.00
1.00	SNS SVC200-INSTALL-PH	968.00	968.00
1.00	SNS SVC205:HOURLY TRNG REMOTE	968.00	968.00
3.00	SNS SVC990-1YRHW	6,751.00	20,253.00
		Sub Total	32,689.00

CASTUS SERVICES/SUPPORT

Quantity	Description	Price	Extension
1.00	CASTUS 1ST YR HOSTING SERVICE	.00	.00
6.00	CASTUS PHONE SUPPORT/PER HOUR	125.00	750.00
2.00	CASTUS HOSTING SERV-YRS 2/3	1,980.00	3,960.00
		Sub Total	4,710.00

LINK ELEC. SERVICES/SUPPORT

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Quantity	Description	Price	Extension

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2.00	LINK ACE-2000/492 OPT.WARRANTY	5,000.00	10,000.00
			=========
		Sub Total	10,000.00

INSTALLATION SERVICES

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Quantity	Description	Price	Extension

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	DESIGN, ENGINEERING, FABRICATION, PROJECT MANAGEMENT INSTALLATION, COMMISSIONING, TRAINING AND WARRANTY		223,212.00
			=========
		Sub Total	223,212.00

UNFORESEEN OCCURENCES & ITEMS

Quantity	Description	Price	Extension

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	To be reserved and expended against on a per usage basis if needed as mutually agreed upon by City & Contractor including but not limited to: troubleshooting Owner furnished equipment, parts and accessories.		30,000
			=========
		Sub Total	30,000

			=========
Merchandise:	849,678.00
Integration:	223,212.00
Other:	30,000
Freight:	.00
Sales Tax:	.00
	=========
Total Amount:	1,102,890

OPTION
ALTERNATE DELETE EQUIMENT AND LABOR

QAM MODLE EQUIPMENT-DELETE ALTERNATE

Quantity	Description	Price	Extension
1.00	THOR.H4ADHDQAMI CATV,4CH,HDMI/YPPBR/ENCDER	3,249.00	3,249.00
1.00	THOR.H1HDMIQAML FIBE,1 HDMI HD ENCDER/QAM MOD	2,188.00	2,188.00
1.00	BLON.OC8D COMBINER	254.00	254.00
1.00	BLON.ACA-351000 AMP,APART COMPLEX,35DB,P-P DIS	190.00	190.00
5.00	CRES.CBL-HD-6 CABL,HDMI,6'	36.00	180.00
2.00	MIDD.U1V 1SP VENTED UTILITY SHELF	35.00	70.00
1.00	MISC.HARDWARE,CABLE,CONNECTORS	715.00	715.00
1.00	LG.22LJ4540 DISP,LED,22",CONSUMER	188.00	188.00
1.00	CHIE.FTR1U MOUN,SMALL,FLATPANEL,TILT,WALL	58.00	58.00
1.00	MIDD.EB3 PANE,3 SPACE (5 1/4") FLANGED	11.00	11.00
			=========
		Sub Total	7,103.00

MASTER CONTROL EQUIPMENT-DELETE ALTERNATE

Quantity	Description	Price	Extension
1.00	LG.49UT640SOUA 49" LCD DISPLAY,4K,400 NIT	831.00	831.00
1.00	CHIE.MTM1U MOUN, UNIVERSAL MOUNT	142.00	142.00
1.00	ROSS.OGX-FR-CN OPENGEAR OGX FRAME-COOLING	1,926.00	1,926.00
1.00	ROSS.PS-OGX 600 WATT UNIVERSAL POWER SUPPL	637.00	637.00
2.00	MIDD.210M RACK,10 SPACE (17 1/2") DESKTO	189.00	378.00
2.00	MIDD.PD-915R POWE,9OUT,15A,RCKMT,POWER STR	94.00	188.00
1.00	MARS.V-R173-DLW DISP.MON,17" HD RM WVFRM/VECTO	2,999.00	2,999.00
1.00	MARSHALL AR-DM-51B AUD MONITOR	1,141.00	1,141.00
1.00	VIEW.VZMV1602SD VIDE,DUAL MODE 16CH SDI MULTIV	1,640.00	1,640.00
			=========
		Sub Total	9,882.00

INSTALLATION SERVICES

Quantity	Description	Price	Extension
	DESIGN, ENGINEERING, FABRICATION, PROJECT MANAGEMENT		
	INSTALLATION, COMMISSIONING, TRAINING AND WARRANTY		24,277.00
			=========
		Sub Total	24,277.00

MANUFACTURER'S ITEMIZED MATERIALS LIST

SECTION 012 – FAV.MISC 15:   1.00 CHYRON PRIME CSTM Q-11717-1

ChyronHego – Salesperson: Gregoire Rouyer

Prime LT – NDI Only

Qty	Product Code	Description
1	PRIME-LT-PREMIUM	Prime LT, a software-based, NDI-compliant, professional graphics solution derived from the PRIME Graphics Platform providing high-end graphics functionality and flexibility, offering interoperability control with NDI-based switchers, such as the Newtek Tricaster. **Advanced Tier contains Standard Features and adds soft masking/wipes, auto-follow, auto-space expressions/parameters/conditions, 3D objects, advanced data, and message objects.**
1	PRI-ESC-BNDL	Extended Support Bundle (36 Month Term) – Entitles customer access to customer support for extended hours. (Includes HMA/SMA/SC/ESC)

Professional Services

Qty	Product Code	Description
1	PRIMEOS-2DAY	PRIME ESSENTIALS TWO DAYS, Duration 2 days, (T&E not included).
1	COMOS/01	One day commissioning at the customer's facility. T&E billed separately.
1	T&E	Actual values will be invoiced in accordance with the budget and rates contained with the Agreement and its exhibits.

SECTION 014 – FAV.MISC17   1.00 NEWTEK CSTM QTE EST38007 (VIDEO STUDIO/CONTROL RM)

SECTION 017 – FAV.MISC18   1.00 NEWTEK CSTM QTE EST38007 (DIGITAL STUDIO/CONTROL RM)

1 - TC1D2BDL	TriCaster TC1 (2RU), NC1 I/O and 2 Stripe Control Panel
1 – PTPATC1	ProTek with Premium Access for TriCaster TC1 (initial 2 year coverage)
1 – RPTPATC1	Renewal ProTek with Premium Access for Tricaster TC1 (1 year renewal)
1 – PTVMC12S	ProTek for 2 Stripe Control Panel (initial 2 year coverage)
1 – RPTVMC12S	Renewal ProTek for 2 Stripe Control Panel (1 year renewal)
1 – PTNC1I/O	ProTek for NC1 I/O – Studio I/O Module (initial 2 year coverage)
1 – RPTNC1I/O	Renewal ProTek for NC1 I/O – Studio I/O Module (1 year renewal)
1 – RR1RU	Rack Rails for NC1 I/O
1 – TC410PBB	Tricaster TC410 Plus BASE Bundle (includes Tricaster TC410Plus and TC1SP)
1 – PTTC1SP	ProTek for Tricaster SC1SP (initial 2 year coverage)
1 – RPTTC1SP	Renewal ProTek for Tricaster TC1SP (1 year renewal)
1 – PTPATC410P	ProTek with Premium Access for Tricaster TC410 Plus (initial 2 year coverage)
1 – RPTTC410PA	Renewal ProTek for Tricaster TC410 Plus (1 year renewal)

1 - COMMISSIONING	Product Commissioning, - A minimum of 3 weeks-notice required
2 - ONSITETRNG	On-Site Training, - A minimum of 3 weeks-notice required; One-day (8 hours) operator training for NewTek products that are installed at the facility. Training to be completed by a NewTek Authorized Trainer according to a predetermined training plan. Maximum of 3 trainees. End User information (including email address) and tentative dates required. Travel and expenses are budgeted and included herein. A minimum of 3 weeks-notice is required.
2 - TRAVELDAYFEE	Training Travel Day Fee; The customer purchasing the service is responsible for travel costs for the provider who is travelling to your site, andthis includes airfare, car rental, hotel, a $75 per diem and travel days which is included in the budget and rates herein. A travel day is defined by the service provider having to travel more than three hours in a day and that day is not a day that training occurred.; The customer purchasing the service is responsible for travel costs in accordance with the budget and rates for the provider who is travelling to your site. This includes airfare, car rental, hotel, a $75 per diem and travel days as budgeted herein. A travel day is defined by the service provider having to travel more than three hours in a day and that day is not a day that training occurred.
3 – ONSITETRNGTRVLDAY	On-Site Training Travel Day per diem,;; line items for each day of OnSiteTrng are included, OnSiteTrngAdd, and Commissioning purchased. Expenses are included herein.

1 – TRAVELANDEXPENSES	Remote support will be provided from NewTek worldwide Headquarters in San Antonio, TX, USA.
1 - NRSD	NRSD	NewTek Remote Storage Powered by SNS 4-bay Desktop / 24TB with 2 x 1 GbE ports included (1GbE expansion optional with NRS-6X1G)
1 - NRSD-PT	NRSD	ProTek Initial 2-Year (Premium Service, Remote Support, Extended Warranty & Software Updates)
1 – NRSD-RPT	NRSD	ProTek 1-Year Renewal (Premium Service, Remote Support, Extended Warranty & Software Updates)
1 - NRS-6X1G	6 x 1 GbE Connectivity Expansion
1 – NRS-OC	NRS	Onsite Commissioning – Travel & Expenses Billable After Install (US & Canada only); NOTE: There is a 3-5 week lead time for Remote Storage products.
2 – RR2RU3RU	Rack rails for 2RU and 3RU for TC1 and TC410Plus. Note: For use with round-hole broadcast racks only, not generic server racks. For Square IT Hole Cabinets, contact FEC for an adaptor to be used in conjunction with model RR2RU3RU – 516-967-9565 or via email at doug@fecmountworld.com.
1 – ZHDBNC9PK	HD-BNC to BNC Resell 9 Pack
1 – LIVETEXT2.5FCC	LiveText 2.5 w/Datalink 3 Technology Coupon Code
2 – NSP3GIO	Spark Plus I/O SDI

SECTION 022 – FAV.MISC 25   1.00 CASTUS CUSTOM QUOTE # 1272

CASTUS QuickRoll Model # QR 203 - (2) HD-SDI and/or IP Recordable Input Channels and (3) HD-SDI and/or IP - Go Live/Record Inputs

 Schedule creator and editor interface- yearly, monthly, weekly or daily
Web interface with confidence monitors
Playlist and multi-region playlist creator/editor
Video editor for assembling and trimming clips
RSS crawl overlay capability
File manager library
Video input and live/record controls
Audio input and automatic background music detection
Built in audio normalization for outputs
Inventory, channel and run-log reporting
(8) global overlays per channel
HDMI preview channel
DVD to file rip utility
External HD/SDI & IP router switcher control

 Hardware:
3RU Chassis with redundant power supply
8TB Harddrive with RAID 5

8GB RAM
(2) HDSDI and/or IP Inputs and (3) HDSDI and/or IP Outputs
120GB SSD for CASTUS OS
24X DVD-RW
Dimensions- 17.5" width X 19" depth X 5.25" height

INCLUDES 3 YEAR HARDWARE WARRANTY
Additional HD/SD and/or IP Playout Channel
QuickRoll 32TB RAID 6 upgrade
CASTUS QuickStream Server- Video On Demand & Live Streaming Service

Includes 1 year Castus C4 Support

VOD/live streaming widget for website includes-
Playlists, most recent, agenda chapters, custom layout, play count and reports & online
schedule guide.
Admin control panel for management and customization options.

Hardware:
2RU rack mount chassis
4TB Internal storage
On board VGA, Ethernet ports and USB built in

Dimensions- 17.5" width X 19" depth X 3.5" height

CASTUS Hosting Services for VOD & Live Streaming for years 2 and 3 (Year One is included
in the original price)

Service Includes-
2TB cloud storage
No bandwidth cap for HD live streaming
Regular maintenance

ROKU Channel Setup and Support- ONE TIME CHARGE

Create, deploy and support Roku channel on the Roku platform
Roku connection to CASTUS Hosting Services
Connects to CHS 2TB storage in the cloud
Supports all LIVE streaming channels
Easy customizable set up creator- built into CASTUS Admin Control Panel
Ongoing access to maintain and customize your channel
Deploy to Roku channel that will display on Roku platform as a free app
Requires CHS and CASTUS C4 support annual services

SECTION 024 – FAV.MISC28   1.00 LINK ELECTRONICS QUOTE # 1512915584TM71

1 –   ACE-2000/SCE-492 CLOSED CAPTION ENCODER BUNDLE

2 -   ACE-2000/492- OPTIONAL ADDITIONAL WARRANTY AFTER 1ST YEAR

      1 year extended warranty -Software version updates -Firmware updates Hardware maintenance and updates; ACE-2000 Series of products and Link Encoder -Updates to Language Model - Speaker ID additions or changes and additions as needed -Telephone technical Support 24/7/365

SECTION 030 – FAV.MISC32   1.00 SNS EVO-192TB QTE EST37980

1 - 16B192TB-6X1C	EVO 16 Bay Base 16x12TB - 6x1GbE Copper; EVO Base System: 3U, 64bit Multi-core CPU, 16 SATA Bay, 192 TB RAW (16 x 12TB SATA 6Gb/s), 10 x 1Gb Ethernet Ports (iSCSI/NAS), Asset Management, Cloud Access, Avid Project/Bin Sharing, Adobe and Apple Project Sharing, File/Volume Sharing, NAS (AFP/SMB/NFS/SFTP) and SAN in the same box. No Per Seat License Fees, Unlimited ShareBrowser Desktop Client, SANmp and globalSAN, Lifetime Qcomplete Basic Level Support. 1 Yr HW Maintenance.
3 - ETH-2X10G-C	EVO Ethernet Expansion: 2 x 10Gb Copper Ethernet (iSCSI/NAS) Ports, Upgrade License, 1 yr hardware maintenance
1 - 100HDD: SATA 12TB-6GB/S	EVO 12TB Spare Drive; SNS Rated 12TB 7200RPM Enterprise SATA Hard Drive 6Gb/s for EVO
3 – SVC990-1YRHW	EXTENDED HARDWARE MAINTENANCE – 1 YR COVERAGE Investment protection – This order includes Hardware repair/replacement for 12 months. Special pricing available with upgraded support plan: - 12% Hardware with Q:COMPLETE Standard (Special Order items not applicable. Defective, discontinued or obsolete items may be replaced with a components or equal or greater value.)
3 - SVC934S-STANDARD SUPPORT	Q:COMPLETE Standard Support – Yearly Site License - M-F 9am - 6pm Phone Support - Email Support – Discounted on-site services - SLA within 36 hours M-F
1 - SVC200-INSTALL-PH	Phone Install; - - - - - - - - - - - Phone Installation/Configuration Service - Dedicated Installation Hotline access - Monday - Friday, 7am - 3pm Central Time only - UTC/GMT -6 hours Standard Time - UTC/GMT -5 hours Daylight Time - - Service does not include data migration or backup support – Data migration/backup required prior to service date - Rate applies for time listed above ONLY - This service subject to approval by System Engineer - 24 hr cancellation notice required - - - - - - - - - -

1 - SVC205:HOURLY TRAINING REMOTE   - One-Time up to 4 Hour Remote/Phone Assisted ShareBrowser and EVO Training Service - Scheduling required in advance - Monday - Friday, 10am - 4pm US Central Time only - UTC/GMT -6 hours Standard Time - UTC/GMT -5 hours Daylight Time - Rate applies for time listed above ONLY - 24 hr cancellation notice required

SECTION 045 – FAV.MISC48   1.00 TELOS Hx6POTS/VSET6 – QUOTE 17945

1 - Telos Hx6 POTS + Livewire and Analog I/O   Six-line digital Talkshow system with two integrated high-performance digital hybrids. Manages up to six callers. Includes Digital Dynamic EQ, noise gate, caller ducking, and acoustic echo cancellation. Single-cable Ethernet hookup via Axia Livewire I/O, or choice of analog or AES/EBU I/O with one input and one output per hybrid, and one Program On-Hold input. Includes complimentary XScreen Lite call screening software. Auto-ranging power supply, 90 - 132 / 187 - 264 VAC, 50Hz/60Hz. 100 Watts. Rackmount, 1RU. Requires at least one VSet6 phone controller (not included) - see 2001-00294-000.

1 – Telos VSet6 Telephone   The Telos VSet6 phone has an LCD color display with Telos Status Symbols to feed talent instant information about line and caller status. VSet6 works with up to 6 phone lines; info-rich display shows caller ID for each line, along with time ringing-in or on-hold, and screener comments from the XScreen software application. VSet6 gives talent flexibility. Map groups of lines to a single fader, take a queue of calls to air sequentially. Controls let talent step through queued calls, "busy" incoming lines, lock calls on-air, or start an external recording device. Telos-exclusive "Next Call" key speeds workflow for producers, screeners, and talent. Built-in address book and call history log. Each VSet6 has its own web server for easy remote configuration and software upgrades. Power options include PoE (Power over Ethernet) from an Axia xSwitch or Telos-approved switch, or included in-line power injector. Stands 4.9" (123 cm) tall, dimensions of 12" x 7" (29.5 x 18 cm). Max power consumption: 15.4 Watts.

HOURLY RATE SHEET

<u>Primary Proposal Labor Breakdown – Includes G&A and Rate Changes</u>
<u>Rev 4-25-20</u>

Project Engineer (Design/Commissioning) - 712 hours, $100/hr.
Project Engineer (Training) - 48 hours, $97.13/hr.
Project Manager – 349.75 hours, $94.50/hr.
Assembly Technician - 128 hours, $55.31/hr.
Installer (Includes Prevailing and Fringe) – 1056 hours, $94.00/hr.
Total Labor amount including G&A as described below $215,257.30

All hourly rates include:

Hourly rate adjustments to achieve closer parity to acceptable local wages
All indirect expenses including but not limited to all Ford support staff, facilities, vehicles, air travel, rental car, per diem, hotel, parking, local travel to site and shipping and;
All indirect expenses incurred by several manufacturer's commissioning and training staff including but not limited to, air travel, rental car, per diem, hotel and parking and;

Installer hourly rate includes all the above and applicable prevailing wage and fringe

Hourly rate do not include:

Tools $1,300
This price includes the purchase of tools as required to perform the installation based on typical life expectancy of the tools used. Tools include laptop computer, hand tools, wire crimpers, wire strippers, ladders, dollies, carts, tables, chairs, PPE, etc.

Test Equipment $1,625
This price includes purchase of test equipment as required to perform the installation based on typical life expectancy of the tools used.

Ford one year warranty $5,029
Please see Ford Guarantee and Limitations of Warranty for detail

PROJECT TEAM

MICHAEL JARNAGIN,CEV,CEA
CORPORATE TECHNOLOGY ENGINEER

As a Corporate Technology Engineer, Mike is focused on ensuring the AV solution connects the latest technology to the client's needs. He serves as a subject matter expert to the entire company in areas related to video production and other unique video solution requirements.

CERTIFICATION/EDUCATION

Studies in Mass Communication - North Central University
Digital Electronics - Indiana Vocational Tech
Certified Video Engineer - Society of Broadcast Engineers
Certified Audio Engineer - Society of Broadcast Engineers
NSCA/Nicet Levels 1 & 2
TEF/Techron Analysis Certified
Member of the Society of Broadcast Engineers
Member of SMPTE - Society of Motion Picture and Television Engineers

SELECTED PROJECTS

BBVA Compass Stadium - Houston, TX
Sagemont Baptist Church - Houston, TX
Tulsa Community College Metro Campus - Tulsa, OK
Tulsa Stadium Trust - Tulsa, OK
The Assembly - Broken Arrow, OK
Yates High School - Houston, TX

EXPERIENCE/BACKGROUND

Mike's extensive background in video production and communication has established him as one of the industry's top Subject Matter Experts (SME) in these areas.

Mike is a devoted father and enjoys spending time with his family as well as volunteering as a production manager at his church. He is a technology enthusiast and avid outdoorsman, who loves boating, fishing and traveling.

EMPLOYMENT DATE

November 2008

JERRY MCGARGILL, BSEE, AAS, CTS-D

JOB CENTER DIVISION ENGINEERING MANAGER

As the Job Center Division Engineering Manager (DEM), Jerry is responsible for overseeing the engineering work performed by the division. This involves providing peer review, training, Quality Assurance & Control (QA/QC) as well as coordinating engineering resources. His team is responsible for design development as well as software programming, on-site installation supervision, system testing, commissioning and documentation.

CERTIFICATION/EDUCATION

BSEE - Bachelor of Science in Electrical Engineering, University of Iowa
AAS - Associates of Applied Science, Iowa Western College
CTS-D - Certified Technology Specialist Design, AVIXA
Biamp Tesira, QSC & Certified Soundweb Designer
Creston Digital Media Designer Certification
Crestron Core Systems Programming Certification
AtlasIED Globalcom.IP Certification
EASE Level 1 & 2 Certificates
Meyer Sound System Design and Optimization
SDVoE Design Certificate
Denver Fire Department Journeyman

SELECTED PROJECTS

Mile High Stadium - Denver, CO
FedEx Forum Memphis Arena - Memphis, TN
BBVA Compass Stadium - Houston, TX
Budweiser Event Center - Loveland, CO
Coors Field - Denver, CO
Denver International Airport - Denver, CO
Los Angeles International Airport - Los Angeles, CA
Mount Rushmore National Monument - Keystone, SD
Salt Lake College for New Media - Salt Lake City, UT

EXPERIENCE/BACKGROUND

The DEM's primary focus is to maintain the highest quality engineering standards and ultimately ensure the owner's objectives for the space are achieved through AV technology. His attention to detail helps achieve total customer satisfaction, making certain the project performs with excellence- on time and on budget.

Jerry's interests include writing and recording music.

EMPLOYMENT DATE

January 1995

MARK GWARTNEY, CTS

PROJECT MANAGER

As a Project Manager (PM), Mark is responsible for coordinating all phases of a project. This includes purchasing, assembly, scheduling manpower and material assets, testing and training.

CERTIFICATION/EDUCATION

BA - Bachelor of Arts Telecommunications - Oklahoma Baptist University
CTS - Certified Technology Specialist, AVIXA
OSHA-30
NCSA - Electronic Systems Technician
Syn-Aud-Con - Sound Reinforcement Technician

SELECTED PROJECTS

Fiesta Texas - San Antonio, TX
Beau Rivage Resort and Casino - Biloxi, MS
Invesco - Denver, CO
University of Colorado School of Medicine Anschutz - Denver, CO
VA Hospital Campus - Aurora, CO
Urban Farmer Restaurant - Denver, CO
Windsor School District - Windsor, CO

EXPERIENCE/BACKGROUND

Under Mark's leadership as the PM, he is the center of communication - ensuring the owner, consultants, architect, general contractor and other contractors are well informed of all aspects of the installation and on-site requirements. His priority is total customer satisfaction, ensuring each project is accomplished with the highest standards - on time and on budget.

Mark enjoys volunteering at his church where he mixes sound as well as officiating Youth and High School softball, baseball and basketball.

EMPLOYMENT DATE

November 2019

JOSEPH GRAVES, BSET, AS,CTS

PROJECT ENGINEER

As a Project Engineer (PE), Joseph is responsible for all aspects of the AV system design. This involves the design development as well as software programming, on-site installation supervision, system testing, commissioning and documentation.

CERTIFICATION/EDUCATION

BSET - Bachelor of Science in Electrical Engineering Technology, Oklahoma State University
AS - Associate of Science in Computer Information Systems, Tulsa Community College
CTS - Certified Technology Specialist, AVIXA
Crestron DMC-D 4K
Q-SYS Level 1 Certification
HDBaseT Expert Certified - HDBT ASE
SynAudCon Sound System Design

SELECTED PROJECTS

Yates High School - Houston, TX
Odessa Christian Faith Center - Odessa, TX
Paycom - Oklahoma City, OK
Asbury UMC - Tulsa, OK

EXPERIENCE/BACKGROUND

The PE's primary focus is to ensure the owner's objectives for the space are met through AV Technology. His attention to detail helps achieve total customer satisfaction - making certain the project is on time and on budget.

Joseph is an avid family man whose life revolves around family, God, and music. His involvement in music ministry with has taken him to many churches and provides a unique perspective on the technology.

EMPLOYMENT DATE

May 2006

PRICING MATRIX

Component	ITEM DESCRIPTION	QTY (EA)	Extended Cost - Year 1	Year 2	Year 3	Year 4	Year 5
MINIMUM REQUIREMENTS							
Total Hardware Costs	DMMS BASE SYSTEM	1	$ 755,341.00				
Total Software Costs	Included in Implementation		$ -	$ -	$ -	$ -	$ -
Implementation (e.g. Custom Development, Configuration, Installation etc.)***		1	$ 215,257.30				
Tools	This price includes the purchase of tools as required to perform the installation based on typical life expectancy of the tools used. Tools include laptop computers, hand tools, wire crimpers, wire strippers, ladders, dollies, carts, tables, chairs, PPE, etc.	1	$ 1,300.00				
Test Equipment	This price includes purchase of test equipment as required to perform the installation based on typical like expectancy of the tools used.	1	$ 1,625.70				
Ford AV 1 Year Warranty	Please see Ford Guarantee and Limitations of Warranty for detail.	1	$ 5,029.00				
Chyron Services/Support		1	$ 17,347.00				
Newtek Services/Support		1	$ 29,591.00				
Studio Network Solutions Services/Support		1	$ 32,689.00				
Castus Services/Support - Yr 1 Castus Hosting and 2TB VOD Cloud Storage, 6 Hrs Phone Support		1	$ 4,710.00				
Link Electronics ACE-2000/492 Optional Additional Warranty After 1st Year, Years 2 and 3		1	$ 10,000.00				

			$	$	$	$	$
Support/Maintenance	Link Optional Annual Warranty - $5000 per YR (Years 4 &5) / Newtek Protek Services (YRS 4/5) - $11,108 for 2 Years (YRS 4/5) - Tricaster TC1, 2 Stripe Control Panel, Tricaster 410 Plus, TC1SP Control Panel, NRSD SNS EVO Extended Hardware Maintenance and Standard Support, $10,251 per year for Years 4 & 5. Chyron Prime Extended Support Bundle, $2,535 per year, Years 4 & 5.		$ -	$ -	$ -	$ 28,894.00	$ 17,786.00
Ongoing Licensing (if required)	Castus (Hosting Services) - Annual - $1995/YR Starting Years 4/5		$ -	$ -	$ -	$ 1,995.00	$ 1,995.00
Warranty	**1 Year Workmanship**	**Included in Implementation**	$ -	$ -	$ -	$ -	$ -
Training		**Included in Implementation**	$ -				
Delivery		**Included in Implementation**	$ -				
Unforeseen Occurences & Items	To be reserved and expended against on a per usage basis if needed as mutually agreed upon by City & Contractor including but not limited to: troubleshooting Owner furnished equipment, parts and accessories.		$ 30,000.00				
Subtotal			$ 1,102,890.00	$ -	$ -	$ 30,889.00	$ 19,781.00
OPTIONS							
Teranex Option moved to the Base System.			$ -	$ -	$ -	$ -	$ -
AJA ProRes Recorder Option moved to the Base System.			$ -	$ -	$ -	$ -	$ -
Software			$ -	$ -	$ -	$ -	$ -
Extended Warranties. Please explain covereage (time), breadth, and cost			$ -	$ -	$ -	$ -	$ -
Subtotal			$ -	$ -	$ -	$ -	$ -
Grand Total			$ 1,102,890.00	$ -	$ -	$ 30,889.00	$ 19,781.00

TIMELINE

Activity ID		Activity Name	Duration	Start	Finish	Predecessors	2020
							Jan / Feb / Mar / Apr / May / Jun / Jul / Aug / Sep / Oct / Nov / Dec
1	MASTER SCHED	⊞ MASTER SCHEDULE	747d	21-Feb-2019	31-Dec-2021		
75							
76	RFP_SI	⊞ Systems Integrator RFP	99d	1-Nov-2019	18-Mar-2020		Systems Integrator RFP
95	SI	⊟ Systems Integrator Contract & Services	158d	19-Mar-2020	26-Oct-2020		Systems Integra
96	CONTRACT_SI	SOW & Contract Drafting/Negotiation	42d	19-Mar-2020	15-May-2020	94	SOW & Contract Drafting/Negotiation
97	CONTRACT_SI	Contract Submitted for Jaggaer Entry	1d	13-May-2020	13-May-2020		Contract Submitted for Jaggaer Entry
98	DESIGN_JBS & SI	Drafting Functional Drawings - JB Schoedler	41d	18-May-2020	13-Jul-2020	96	Drafting Functional Drawings - JB Schoedler
99	DESIGN_JBS & SI	Soft Kick Off Meeting	1d	19-May-2020	19-May-2020		Soft Kick Off Meeting
100	CONTRACT_SI	Contract Entered into Jaggaer	12d	14-May-2020	29-May-2020	97	Contract Entered into Jaggaer
101	CONTRACT_SI	City Attorney Review	2d	1-Jun-2020	2-Jun-2020	100	City Attorney Review
102	CONTRACT_SI	Out for Vendor Signature	8d	3-Jun-2020	12-Jun-2020	101	Out for Vendor Signature
103	CONTRACT_SI	Submit request for resolution - Thursday Prior	1d	18-Jun-2020	18-Jun-2020		Submit request for resolution - Thursday Prior
104	CONTRACT_SI	Finance and Governance Committee	1d	23-Jun-2020	23-Jun-2020		Finance & Governance Committee - could we go
105	CONTRACT_SI	Mayor Council	1d	30-Jun-2020	30-Jun-2020		Mayor Council
106	CONTRACT_SI	Resolution Filed & Approved	1d	2-Jul-2020	2-Jul-2020		Resolution Filed & Approved
107	CONTRACT_SI	Council Reading (Resolution Approval)	1d	6-Jul-2020	6-Jul-2020		Council Reading (Resolution Approval)
108	CONTRACT_SI	Contract Out for City Signatures	10d	7-Jul-2020	20-Jul-2020	107	Contract Out for City Signatures
109	CONTRACT_SI	Purchase Order in place	5d	21-Jul-2020	27-Jul-2020	108	Purchase Order in place
110	DESIGN_JBS & SI	Finalize Functional Drawings & Approve	0	27-Jul-2020	27-Jul-2020	109	Finalize Functional Drawings & Approve
111	DESIGN_JBS & SI	95% Equipment List Approval	0	27-Jul-2020	27-Jul-2020	109	95% Equipment List Approval
112	DESIGN_JBS & SI	Finalize & Approve Detailed Design Drawings	15d	28-Jul-2020	17-Aug-2020	109	Finalize & Approve Detailed Desig
113	EQUIP_SI	Lead time for equipment order/ Pre-build & In Shop Testing	20d	28-Jul-2020	24-Aug-2020	109	Lead time for equipment order/ P
114	CONTRACT_SI	SI Work Begins Onsite	0	17-Aug-2020	17-Aug-2020	112	SI Work Begins Onsite
115	INSTALL_SI	Systems Installation	40d	18-Aug-2020	12-Oct-2020	112	Systems Installation
116	INTEGRATE_SI	Systems Test and Training	10d	13-Oct-2020	26-Oct-2020	115	Systems Test a
117	ACCEPTANCE_SI	Final City Inspection and Acceptance	0	26-Oct-2020	26-Oct-2020	116	Final City Inspe
118	INSTALL SCHED	⊞ Installation Schedule	6d	26-May-2020	2-Jun-2020		Installation Schedule
128	ADA	⊞ ADA Compliance Review	11d	9-Mar-2020	23-Mar-2020		ADA Compliance Review
131	MOVE	⊞ CMC MOVE	178d	25-Mar-2020	27-Nov-2020		CMC M
149	OFFICESCAPES	⊞ FURNITURE	209d	1-Oct-2019	17-Jul-2020		FURNITURE
160	BARBIZON	⊞ LIGHTING	201d	1-Sep-2019	5-Jun-2020		LIGHTING
170	EGTC	⊞ EGTC OPERATING AGREEMENT	257d	1-Sep-2019	24-Aug-2020		EGTC OPERATING AGREEMEN
183	SIGNAGE	⊞ EXTERIOR & INTERIOR SIGNAGE	201d	1-Dec-2019	4-Sep-2020		EXTERIOR & INTERIOR SIG
193	TECH SVCS	⊞ Structure Cabling, Low Voltage Security, City Fiber (JIM TO SCHEDULE MEETING TO REVIEW)	185d	18-Nov-2019	31-Jul-2020		Structure Cabling, Low Voltage Security
230	ECS & FEES	⊞ Electronic Cashiering & Fee System	142d	20-Jan-2020	4-Aug-2020		Electronic Cashiering & Fee System
249	FLOOR	⊞ FLOORZ	75d	31-Jan-2020	14-May-2020		FLOORZ
263	CMC STAFF	⊞ CMC STAFF	55d	31-Jan-2020	16-Apr-2020		CMC STAFF
266	LEASE	⊞ LEASE					
270	MASTER SCHED	⊞ MASTER SCHEDULE	487d	02/21/19	01/04/21		
332							
333							
334							