

SP-127015
(New)



SPECIAL PROVISIONS
FOR
CLOSED CIRCUIT TELEVISION CAMERA SYSTEM

Polk County
STP-A-1945(805)--86-77

Effective Date
June 17, 2014

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING ADDITIONS AND MODIFICATIONS. THESE ARE SPECIAL PROVISIONS AND SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

The Contractor shall ensure that all elements of the Closed Circuit Television (CCTV) Camera System are operational and function as intended, both in the field and in the Traffic Operations Center (TOC). The CCTV Camera System Specification may include field equipment as well as TOC equipment, hardware, software, and integration components.

The City of Des Moines will provide IP addresses to the Contractor to be used for the CCTV cameras and traffic signal controllers. The City will also provide direction for connecting the new fiber optic system to the City's existing system.

The contractor shall forward to the Engineer three copies of a list of unit costs for each item listed on the Schedule of Unit Prices attached to these Specifications by the preconstruction meeting. The sum of the costs for each item shall equal the total Contract Lump Sum price for the bid item for Closed Circuit Television Camera System. Partial payments of the work performed on the project will be made by the Contracting Authority and the schedule of unit prices will be used to prepare progress payments to the Contractor.

PART 1 - DESCRIPTION

The CCTV Camera System shall comply with all rules and regulations of the City of Des Moines, the Iowa DOT, the Federal Communications Commission (FCC) and these Special Provisions. The proposed locations for CCTV camera equipment installation are shown on the Plans.

The new CCTV camera at each location will be located at the existing camera locations as shown on the plans. CCTV data and video transmission between the TOC and the CCTV camera system locations will be via a fiber optic cable, Ethernet communications system. The camera shall include a hardened one-channel MPEG video/data encoder. The encoder will be connected via an Ethernet cable to the network switch located in the traffic signal controller cabinet, for transmission to the City of Des Moines TOC.

The CCTV cameras, including built-in encoders, shall be provided by the same vendor and shall be developed specifically for traffic management applications. The CCTV camera system shall be compatible and fully functional with the City's existing camera management system, which is Cameleon (Version 4) by the "Flir 360 Surveillance" Company. The Contractor shall update the existing CCTV camera management system by removing the existing cameras and incorporating the new camera locations that are being installed as part of this project.

The Contractor shall be responsible for all incidental accessories necessary to make the CCTV camera system complete, fully functional, and ready for operation, even if not particularly specified. Such incidentals shall be furnished, delivered and installed by the Contractor without additional expense to the City. Minor details not usually shown or specified, but necessary for the proper installation and operation of the CCTV camera system, shall be included in the work and in the Contractor's price bid. It is understood and agreed by the Contractor that the system description provided herein is complete and includes all equipment necessary for the proper functioning of the CCTV camera system, even though every item may not be specifically mentioned.

1.1 General Requirements

1. Contractor shall furnish all components of the CCTV camera system, including the dome CCTV cameras (with built-in hardened one-channel video and data MPEG encoders), integrated CCTV video/data cable, and mounting hardware, to ensure a fully-operational system.
2. Contractor shall furnish and install all necessary miscellaneous equipment and cabling to make the CCTV camera systems operational, including power to the CCTV camera systems, and connection to the communications equipment.

3. All equipment and materials used shall be standard components, regularly manufactured, and regularly utilized in the manufacturer's system.
4. Contractor shall integrate all CCTV system components with existing City of Des Moines Gigabit Ethernet network.
5. All Systems and components shall have been thoroughly tested and proven in actual use.
6. Unless otherwise shown on the Plans, all field equipment installed shall be operational in all weather conditions and shall be able to withstand a wind load of 100 mph without permanent damage to mechanical and electrical equipment.
7. Equipment used shall be identical at each field location and shall be completely interchangeable.

1.2 Wiring Requirements

All wiring shall meet the requirements of the current edition of the National Electric Code. All wires shall be cut to proper length before assembly. No wire shall be doubled-back to take up slack. Wires shall be neatly laced into cable with nylon lacing or plastic straps. Cables shall be secured with tie-wraps. Service loops shall be provided at all connections.

PART 2 - MATERIALS

2.1 Traffic Observation Camera

All cameras shall be COHU brand, Model 3920 HD – 720p30 (with 30x Optical zoom). All Camera domes shall be pressurized.

In addition, the CCTV camera system shall consist of all of the following items along with any other items required for a fully-operational CCTV camera system

- Dedicated power supply of adequate capacity for the CCTV camera system and all supporting control, communication, and network equipment
- Integrated CCTV camera cable that supports Ethernet and power to the CCTV dome camera
- Hardened Fast Ethernet switches at each CCTV camera location (refer to Ethernet Switch specification)
- Power surge and lightning suppression equipment, as required

2.2 Camera Mounting Hardware

Camera shall use pole-mounting hardware provided by the CCTV camera vendor, capable of mounting to a vertical traffic signal pole or luminaire arm. The camera mount shall be affixed to the pole to extend the camera towards the center of the signalized intersection and/or roadway corridor to provide optimal viewing capability. The CCTV camera and mounting hardware shall withstand a wind load of 100 mph when affixed to traffic signal pole or luminaire arm, without permanent damage to mechanical and electrical equipment.

2.3 Ethernet Hardened Field Switch

The Ethernet switch shall be as identified in the plans. The 4-port switch shall be CISCO brand Model No. 3000-4TC Industrial Ethernet Switch, 4 x Expansion Slot, 2 x SFP (mini-GBIC) - 4 x 10/100Base-TX, 2 x 10/100/1000Base-T. It shall include a Cisco Expansion Power Module - Power converter (external) - C 110-220/ DC 88-300 V, and a Cisco – 19 inch Rack Mount Din Rail Adapter. The 8-port switch shall be a CISCO 3560CG-8PC-S switch.

All switches will be programmed by the City's IT Department prior to their field installation. The contractor will be responsible for delivery and pick-up from the IT office, which is located in the City's Armory Building at 602 Robert D. Ray Drive.

2.4 Connectors and Harnesses

All external connections shall be made by means of connectors. The connectors shall be keyed to preclude improper hookups. All wires to and from the connectors shall be color-coded and/or appropriately marked. In order to assure compatibility and performance compliance, the cables from the dome CCTV camera shall be assembled by the camera manufacturer.

Connecting harnesses of appropriate length and terminated with matching connectors shall be provided for interconnection with the communications system equipment.

All pins and mating connectors shall be gold-plated to provide good electrical connection and resist corrosion. Connectors utilizing solder-type connections shall have each soldered connection covered by a piece of heat shrink tubing securely shrunk to insure that it protects the connection.

2.5 Lightning Suppression

The Contractor shall provide lightning and surge suppression devices to protect the CCTC camera system deployed in this project. At a minimum, lightning suppression devices shall be installed to protect the following system components:

- The CCTV camera pole
- The enclosure (traffic signal controller cabinet) housing CCTV equipment
- Video cable between the camera and encoder
- Camera enclosure power cable between the power supply and camera enclosure
- Pan-Tilt-Zoom (PTZ) cable between the cabinet and the camera enclosure

Alternatively, and at the direction of the Engineer, the installed CCTV system and its components shall be tied to the existing lightning/surge suppression system currently in place at each CCTV camera location. Lightning/surge suppression equipment shall meet City of Des Moines standards.

PART 3 - CONSTRUCTION AND INTEGRATION

3.1 CCTV Camera Site Installation

The CCTV camera system shall be installed as shown on the Plans or as specified in these Special Provisions, unless otherwise directed by the Engineer. The mounting standards and specifications shall be provided by the camera manufacturer. The Contractor shall verify the mounting requirements and hole patterns of the camera enclosure and the suitability of the approach depicted in the manufacturer's standards. The Contractor may request approval for alternate mounting details by submitting a shop drawing. The Contractor shall incur complete responsibility for the integrity of all mounting structures.

CCTV camera assemblies shall be mounted at the same location that the existing camera is removed.

During mounting of camera enclosures or any other work operation, the Contractor is responsible for avoiding and protecting from damage any existing poles, structures or wiring. All damage to existing poles, structures or wiring shall be repaired by the Contractor at his/her sole expense. The Engineer shall have final authority in determining the extent of repairs that shall be required.

3.2 Des Moines TOC Integration

The Contractor shall be responsible for the integration of the elements installed as part of this contract with the existing systems at the Des Moines TOC, to make the CCTV system installed as part of this Contract fully operational and functional as shown on the Plans, as specified in these Special Provisions, and as directed by the Engineer. The contract elements include the following:

1. Ethernet network system.
2. CCTV camera system and software.

The work to be performed under this Contract shall consist of, but not be limited to, the project elements listed below, in support of the TOC Integration effort, as shown on the Plans, as specified in these Special Provisions, and as directed by Engineer.

1. Integration of the new CCTV cameras and existing CCTV cameras into one IP video management system.
2. Integration of Ethernet System into the existing Des Moines TOC operations to support the CCTV camera system.
3. Furnish accurate project documentation, as specified in these Special Provisions.

3.3 Warranty

All components of the CCTV camera system, except the cameras, shall have a minimum 1-year manufacturer's warranty for parts and labor. The cameras shall have a minimum of a 2-year manufacturer's warranty for parts and labor from date of contract acceptance. This warranty does not replace any manufacturer's warranty if greater than what is required herein. Repair or replacement of defective parts for a period of 2 years from the date of shipment is required.

PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Plan quantities are for estimating purposes only, and these quantities will not be paid for separately. Payment will be made on a lump sum basis.

No direct payment will be made for any incidental materials or work required to complete the CCTV camera system unless specifically provided for in the contract documents. All work or materials for which no basis of payment is specifically provided will be considered incidental to the bid item for "Closed Circuit Television Camera System".

SCHEDULE OF UNIT PRICES CCTV UPGRADES (9 LOCATIONS) STP-A-1945(805)--86-77 Activity ID 04-2014-004				
('LUMP SUM' ITEM) CLOSED CIRCUIT TELEVISION (CCTV) CAMERA SYSTEM				
ITEM	UNIT	TOTAL QUANTITY	UNIT COST	TOTAL EXTENSION
REMOVE EX. CCTV PTZ CAMERA AND CABLING	EACH	9		
CCTV PTZ CAMERA	EACH	9		
CCTV CAMERA CABLE	L.F.	1815		
NETWORK SWITCH WITH MOUNTING HARDWARE (4 PORT)	EACH	7		
SINGLE- FIBER SFP (SM)	EACH	14		
FIBER TERMI-NATIONS	EACH	7		
		Sub-Total (Cameras)		

Approved _____

Date _____