SECTION 28 23 00

VIDEO SURVEILLANCE SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. General: Provide engineering, labor, materials, apparatus, tools, equipment, transportation, temporary construction, and special or occasional services as required to make a complete working video surveillance system installation, as described in this specification.

B. Section Includes:

1. CCTV Monitoring and Recording System
2. CCTV fixed and PTZ cameras, lens, mounts, and housing
3. CCTV Power supplies
4. Integration with ACAMS
5. Interfaces and connections between CCTV subsystems to allow communication with one another

C. Products Supplied But Not Installed Under This Section:

1. None

D. Products Installed But Not Supplied Under This Section:

1. None

E. Products Specified But Not Installed Under This Section:

1. None

F. Products Furnished and Installed Under Another Section:

1. 120V power
2. CAT 6A cabling for IP cameras
3. PoE switches for IP cameras and network video recorders
4. Network ports in the IDF for CCTV connectivity via LAN/WAN

G. Related Sections:

1. Consult other Divisions, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete and operable system.
2. Section 28 00 00 Basic Security Requirements: includes general project requirements, submittal formats, installation, and warranty requirements.
3. Section 28 13 00 Access Control & Alarm Monitoring System: includes product information for video integration with the ACAMS.
4. Section 28 05 13 Security System Cabling: includes product information for wire and cable needed to support the video surveillance system.
5. Section 28 05 53 Security System Labeling: includes label types and formats for security devices.
6. Section 28 08 00 Testing/Commissioning: includes the integrating testing/commissioning requirements for the video surveillance system.

1.2 SYSTEM DESCRIPTION

A. Overview

1. Sharp Gross Mount (SGH) Hospital have and existing CCTV system that is monitored at an off-site location

2. SGH currently monitors their CCTV system using Plantnet DMS digital video recorders over the SGH LAN/WAN at on off-site location. The digital video recorders are located in the Vendor room on each floor.

B. CCTV Camera System

1. CCTV system to monitor and record the movement of people thought out the facilities.

2. Provide software integration between ACAMS and DVR for automatic camera call up and recording on alarms and events.

3. Provide software interface to the ACAMS for alarm call up of cameras on predefined alarm events.

4. Provide sufficient in-camera storage licenses to support CCTV cameras shown on project drawings.

5. Provide PTZ cameras as indicated on the drawing to provide coverage of the building's perimeter and loading dock.

6. Provide rack mountable DVR Vender rooms.

7. Provide 24VAC camera power supplies where required for exterior PTZ cameras

8. Fixed camera locations:

a. Interior view of main building entrances

b. Exterior view of perimeter doors

c. Within the Pharmacy area: Out-patient window, work areas, narcotics room, and In-patient window.

d. Loading dock

e. Shipping and receiving

f. Stairwells

C. Custom Device Requirements

1. Provide coordination and custom mounting of exterior cameras.

D. Tamper Monitoring

1. Provide additional monitor input points for monitoring the following:

a. Tamper switches located within CCTV PTZ dome enclosures.

1.3 SUBMITTALS

A. Contractor Qualifications: Submit certifications for the manufacturers of the video surveillance equipment.

B. Product Data: Submit product information for components specified herein.

C. Shop Drawings:

1. Device placement on floor plans.

2. Point-to-Point Diagrams: Include wiring, points of connection and interconnecting devices between the following:

a. Video surveillance system, monitors, and recording equipment

b. Devices connected to the system
c. Miscellaneous control relays
d. Conductors (identify conductors on the point-to-point diagrams with the same tag as the installed conductor)

3. Block Diagram/Riser Diagram: Show the video surveillance system components, conduit, wire types, and sizes between them, including cabling interties between termination hardware.
4. User interface graphics with icons and control buttons displayed.
5. Custom mounting details

1.4 EXTRA MATERIALS

A. Provide 10% spare parts of total installed the following: (Round up to the next complete device)
1. Fuses (Place five (5) of each type of fuse inside each SEC and power supply housing).
2. Relays

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Video Surveillance System
1. Digital Video Recording
a. Plant CCTV to match SGH existing system.
2. Cameras
a. Pelco
b. AXIS
c. Sony

2.2 CCTV CAMERA SYSTEM

A. General
1. Type: Color, solid-state CCD with DSP technology, unless otherwise noted
2. Power: 24 VAC/DC
3. Video Signal: NTSC
4. Imager: 1/3 inch format, unless otherwise noted
5. Lens Mount: Accept a "CS" mount auto or manual-iris lens
6. Resolution: 640 x 480 minimum resolution, unless otherwise noted
7. Minimum Light Level: 0.1 fc imager illumination at full video, unless otherwise noted
8. Lens: Field determine, unless otherwise noted
9. Video transmission through Analog signals
10. Built in viewer for monitoring and recording images to a workstation

B. Fixed Dome Camera
1. Complete prepackaged unit containing:

a. 1/3” high resolution color CCD camera
b. Resolution: 540 lines
c. Auto iris lens
d. Varifocal Length Lens of 2.6 mm to 8 mm
e. Dome housing

2. Manufacturer:
a. Interior: Pelco IS110 Mini-Domes

C. PTZ Dome Cameras

1. Complete prepackaged unit containing:
a. 1/4” high-resolution color CCD camera & motorized zoom auto-iris lens
b. High-speed pan and tilt that is stepper motor driven (belt-driven not acceptable).
c. Integral receiver/driver
d. I/O Board Base
e. Lens: 22x zoom, minimum
f. Camera data: Pelco D protocol

2. Manufacturer: Pelco Spectra IV

3. Accessories:
a. Wall mount: Pelco SWM

2.3 CCTV DIGITAL VIDEO RECORDER

A. Features

1. Complete Digital Video Recorder platform that encompasses recording video, viewing video, reviewing recorded video, and storing video for indefinite periods of time.

2. Full control of camera selections, sequencing, and viewing modes

3. The system simultaneously records, displays live video, and plays back video. None of the video operations interfere with each other. Live view and video playback does not interrupt the recording process.

4. Recorders capture, digitize, and store video. Recorders may record full-time, in response to an alarm, or based on a user-defined schedule. Full-time recording refers to 24 hours per day, 7 days per week, 365 days per year.

5. Network: Internal Ethernet card for connection to a 10/100Base-T LAN.

6. Video Capture: Captures camera signals from fixed cameras, PTZ cameras, infrared cameras, x-ray cameras, and low light cameras. Camera signals may be color, black and white, or both.

7. Web Access: Web based remote access via Internet Explorer 5.0 or higher on Windows 98, ME, NT, 2000, or XP.

B. Recorders

1. Use TCP/IP network protocol to communicate to server.

2. Video Information
a. Store the time, date, and source of the video and be available during playback.
b. Store for each clip video source, capture date, start time, and stop time. Source identified as either a monitor or a camera.

c. Store alarm information in the database on the main server when the video is in response to an alarm condition.

3. Recording Configuration
   a. Use TCP/IP network protocol to communicate to head end.
   b. Captures camera signals from fixed cameras, PTZ cameras, infrared cameras, x-ray cameras, and low light cameras. Camera signals may be color, black and white, or both.
   c. Capable of recording video with or without sending the video to tape.
4. Video Storage
   a. Video stored in clips on the recorder's internal hard drive. As the hard drive becomes full, groom oldest clips to make room for new video.
   b. Ability to utilize a variety of network storage devices such as external disk arrays, RAID and NAS devices, and external disk drives for exporting, backup, or sharing images.
   c. Ability to program recorders and servers on a per camera basis is required.
5. Video Authentication
   a. Fingerprint each video clip through a mathematical algorithm during the video capture process. The fingerprint becomes part of the clip and used by the playback software to verify the video has not been altered.
6. Alarm recording
   a. Recording Options
      1) Alarm condition via activation of an external alarm contact.
      2) Internal video motion detection
   b. Recording programmable by camera and by time and date schedule.
   c. Allow a mix and match of continuous recording and alarm recording, based on camera input and capture card connection.
   d. Pre and post alarm recording
7. Video Motion Detection
   a. Each video input capable of detecting activity from camera input and to initiate an alarm condition.
   b. Video motion detection areas operator selectable for each camera input. If the scene changes within the alarm area, an alarm condition is initiated.
8. Viewing of both live and archived images, from multiple remote systems.
9. Remote event notification
10. Password protected via user authorization, with profiles assigned by the system administrator, and database tracking of evens.

C. Manufacturer:
   1. Planet CCTV DVR

2.4 CCTV LIGHTNING PROTECTORS

A. Video Line Coaxial Cable Protectors
   1. Provide on coaxial cables serving exterior cameras.
   2. Manufacturer:
      a. PolyPhaser Corp #IS-75BB/1.5
      b. DITEK

c. Or Equal

B. Power Line Protectors

1. Provide on power lines serving exterior cameras.

2. Manufacturer:

a. PolyPhaser Corp #IS-SPTV

b. DITEK

c. Or Equal

C. PTZ Data Line Protectors

1. Provide on data lines serving exterior PTZ cameras.

2. Manufacturer:

a. PolyPhaser Corp #IS-DPHSD

b. DITEK

c. Or Equal

2.5 POWER SUPPLIES/BATTERY CHARGERS

A. CCTV System Power Supplies

1. 120 VAC input to 24 VAC output, continuous current, fully supervised power supplies for power to cameras.

2. Manufacturer:

a. American Dynamics

b. Or Equal

B. Exterior PTZ Camera Power Supplies

1. Provide a 120 VAC input to 24 VAC output, continuous current, fully supervised power supply for each for each exterior PTZ camera.

2. Provide separate transformers and cables for the defroster/heater in each exterior camera housing; i.e. do not connect these loads to the camera power supply. A maximum of two exterior camera defroster/heaters may be connected per power supply.

3. Provide weatherproof power supplies.

4. Manufacturer:

a. American Dynamics

b. Or Equal

PART 3 - EXECUTION

3.1 INSTALLATION

A. CCTV Cameras

a. Provide outdoor housing and mounts for exterior cameras.

b. Field determine exact placement of cameras to ensure complete coverage.

c. Field determine fixed camera lens size to ensure complete coverage.

d. Route watertight flex from junction box to camera housing from below on exterior cameras.

B. CCTV Power supplies

1. Do not combine with Access Control & Alarm Monitoring System power supplies.

C. CCTV Digital Recording System

1. Rack mount CCTV equipment located in the basement Vendor room.

3.2 PROGRAMMING

A. Prior to the completion of construction schedule a meeting with the Owner and the Engineer to determine the programming criteria. Discuss the following:

1. Camera naming.

2. CCTV camera call-up & recording features (including video motion detection)

3. System data base backup Owner NAS

B. Document the results of the meeting and perform necessary programming to achieve the Owner's requests.

C. Setup and program the system such that no additional programming required.

D. Use the camera naming convention agreed upon at in the programming meeting when programming point names into the system.

E. Perform 2 full system back-ups at completion of initial programming and deliver one copy to the Owner with a Letter of Transmittal explaining information included in back-up and brief description of recovery procedures. Label the second DAT and store onsite. Perform back-ups on a regular bases through the remainder of the project.

F. Perform field software changes after the initial programming session to "fine tune" operating parameters and sequence of operations based on revised operating requirements.

3.3 TESTING

A. Commission the video surveillance system in accordance with Section 28 08 00.

END OF SECTION