

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes

1. Cameras & Enclosures
2. Network Video Recording Software with licenses
3. Camera Licenses.
4. Network switches

B. Substitutions:

1. Certain items of equipment are specified herein by manufacturer and model number to indicate the quality and functional performance required from the system and its components. Substitutions of equal equipment beyond the alternatives listed will be permitted only with the written permission of the engineer.
2. Substitute products will be considered only under the terms and conditions of Section 28 05 00 - Common Work Results For Electronic Safety and Security.

C. Work by Others

1. Division 27
 - a. Network Cabling, including:
 - 1) Horizontal cable from the nearest IDF to the camera.
 - 2) Backbone Cabling
2. Owner
 - a. Power Over Ethernet Network Switches
 - b. Workstation or Server PCs for support of Network Video Recording Software.
 - c. Data Storage via PC or Network Attached Storage (NAS).
 - d. Workstation PCs for client viewing and control
 - e. Patch Cables, except as listed under Section A above.
 - f. Monitors

1.2 REFERENCES

- A. American National Standards Institute (ANSI).
- B. National Electrical Manufacturer's Association (NEMA).

1.3 SYSTEM DESCRIPTION

- A. The video surveillance system shall provide visual surveillance of the spaces noted on the Plans. The cameras shall be fixed and pan-tilt-zoom mount.

1.4 SUBMITTALS

- A. General: Make submittals in accordance with Section 28 05 00 - Common Work Results for Electronic Safety and Security.

- B. Product Data: Submittals shall include a compilation of manufacturer's catalogs or specifications sheet of major systems components. Items being provided shall be clearly marked. Any variations of the proposal from the specifications shall be clearly indicated in the submittal's table of contents.
- C. Shop Drawings: Prepare block diagrams indicating the proposed connections of all equipment to be furnished, drawings of the loudspeaker mounting arrangements, control facilities, and equipment racks. Indicate materials, construction, layouts and quantities. These drawings must be approved by the engineer before the contractor commences fabrications or installations. Prepare and submit for review prior to installation. Include complete system plans showing device layout, routing, wiring, termination, and connection diagrams.
- D. Operations and Maintenance Manuals.
 - 1. Furnish one complete set of operating instruction service maintenance manuals for the equipment employed in the systems. This shall include internal schematics and wiring diagrams. The information in the manuals and on the drawings shall be sufficiently detailed to allow a technician of normal competence to understand, install, operate, maintain, calibrate and repair the equipment.
 - 2. Furnish simplified as-built block diagrams of the system giving the essentials of the installation and their functional relations with all numbered inputs, outputs and wires printed on the diagrams. One copy of the system diagram shall be mounted, framed behind glass with the equipment racks. Furnish a chart of line connections inside the rear door of each rack.

1.5 QUALITY ASSURANCE

- A. All equipment shall be furnished and installed by an authorized factory distributor with proven experience in the design and installation of systems of this type. Distributor shall provide proof of being in the video surveillance contracting business for the preceding five (5) years.
- B. Construct the system following good engineering practices and in accordance with applicable codes and safety precautions.
- C. Periodically inspect portions of the system installed by other contractors to minimize potential interference problems.
- D. All materials and equipment shall be new and shall conform to the applicable requirements of the Underwriter's Laboratories and with the American National Standards Institute.

1.6 WARRANTY

- A. All equipment shall be guaranteed to be free of defective components or faulty workmanship for a period of one year from the date of final acceptance. If any materials prove to be defective within the above period, they shall be replaced within two days at no expense to the owner.

1.7 MAINTENANCE

- A. The contractor shall provide, at his expense, maintenance service for a period of one year after final acceptance of the installation. All service calls shall be answered within twenty-four (24) hours by the video surveillance system contractor.

PART 2 - PRODUCTS

2.1 GENERAL

- A. The equipment manufacturers and model numbers specified herein are meant to provide a standard of quality. It is the responsibility of the bidder to ensure that his proposed product meets or exceeds the quality and performance of the specified model.

2.2 FIXED CAMERAS, TYPE P, W, C and OR Room Status Camera

- A. Manufacturer
 - 1. AXIS P3343 IP Camera
- B. Power
 - 1. Input voltage
 - a. PoE, IEEE 802.3af
- C. Video
 - 1. Video standards
 - a. MPEG-4
 - b. H.264
 - 2. Sensor
 - a. 1/4-inch CMOS
 - 3. NTSC Resolutions and frame rates
 - a. 4CIF: 25/30IPS 800 x 600
 - 4. Optical
 - a. Varifocal IR-corrected, manual zoom and focus adjustment
 - 5. Iris control
 - a. Automatic
 - 6. Viewing angle
 - a. 2.5 to 6 mm
 - 1) Wide 98.5° x 75.3° (H x V)
 - 2) Tele 48.1° x 36.2° (H x V)
 - b. 3.3 to 12 mm
 - 1) Wide 76.1° x 55.8° (H x V)
 - 2) Tele 23.8° x 17.9° (H x V)

7. Network
 - a. Protocols
 - 1) Telnet, RTP, HTTP, ARP, TCP, UDP, IP, ICMP, IGMPv2/v3, SNMP
8. Ethernet
 - a. 10/100 Base-T, auto-sensing, half/full duplex, RJ45
9. Overall unit delay
 - a. 120 ms (MPEG-4)
10. Color
 - a. White (RAL 9010), black inner liner
11. Material
 - a. dome bubble
 - 1) Polycarbonate, clear, UV-blocking, antiscratch coating
12. Adjustment range
 - a. 360° pan, 90° tilt, ±90° azimuth
13. Environmental
 - a. Operating temperature
 - 1) -10 °C to +40 °C (+14 °F to +104 °F)
 - b. Storage temperature -
 - 1) 25 °C to +70 °C (-13 °F to +158 °F)
 - c. Humidity
 - d. 20% to 80% relative humidity non-condensing
 - e. Water/dust protection
 - 1) IP 54, NEMA-3R:
14. Mount:
 - a. Type 'P'
 - 1) AXIS P3343-VE Pipe Mount
 - b. Type 'W'
 - 1) AXIS P3343 Camera Mount T91A61 (Wall Mount)
 - c. Type 'C'
 - 1) None

2.3 PAN-TILT-ZOOM CAMERAS, TYPE P, W, PW

- A. Manufacturer: AXIS Q6034-E PTZ Dome Network Camera
- B. Camera
 1. Communications
 - a. TCP/IP
 2. Imager
 - a. 1/3 in. Progressive scan CCD

- b. 1280 x 720 NTSC
- 3. Lens
 - a. 18x Zoom (4.1–73.8 mm)
 - b. F1.4 to F3.0
- 4. Focus
 - a. Automatic with manual override
- 5. Iris
 - a. Automatic with manual override
- 6. Field of View
 - a. 3.2° to 55°
- 7. Gain Control
 - a. Off/Auto (with adjustable limit)
- 8. Aperture Correction
 - a. Horizontal and vertical
- 9. Electronic Shutter Speed (AES)
 - a. 1 to 1/10,000
- 10. Mechanical/Electrical
 - a. Pan Range 360° cont.
 - b. Tilt Angle 18° above horizon
 - c. Variable Speed 0.1°/s-120°/s
 - d. Pre-position Speed
 - 1) Pan: 360°/s
 - 2) Tilt: 210°/s
- 11. Preset Accuracy ± 0.1° typ.
- 12. Power Draw: (typ)
 - a. Ethernet Models
 - 1) 30 W
- 13. Environmental
 - a. Design Rating
 - 1) IP52
- 14. Operating Temp.
 - a. -40°C to 50°C
 - b. (-40°F to 122°F)
- 15. Humidity
 - a. 0% to 100% relative, condensing

C. MOUNT

- 1. Type 'P'
 - a. AXIS Pipe Mount

2. Type 'W' and type 'PW'
 - a. AXIS Wall Arm Mount

2.4 NETWORK EQUIPMENT HARDWARE

A. Network Switch

1. Provide network switches to transport the data signals from the video cameras to the Network Video Recorders (NVRs) installed under separate contract. These network switches shall be housed in the hospital IDFs.
 - a. Provide at least one switch in each IDF that supports security cameras if there is not an existing switch currently in place.
 - b. Switches shall be placed on the floor or nearest IDF on the same floor supporting the PoE cameras for that floor per UWMC requirements.
 - c. In DP04 as an accepted "VE" item to reduce the amount of switches - switches may be provided in an IDF to serve devices (cameras) on a single adjacent floor. (i.e. A switch provided on 5SA may serve cameras on 6SA.) Cabling shall be extended to the adjacent floor using the fire rated pathways within the IDF(s).
2. Switches shall have connectivity to the singlemode fiber optic cables installed by the Owner for transport of data signals.

2.5 NETWORK VIDEO SOFTWARE

- A. Manufacturer: Pelco - DS Series (Formerly Integral Technologies Digital Sentry).
- B. Provide Recording Software with licenses to support all cameras shown on Plans, plus 10% additional cameras. Software shall support video recording and display of each camera at 30 images per second and 4 CIF(704 x 480) resolution.
- C. Assume one server and license for every 32 cameras.
- D. Provide Control Point Software with license to allow management of all cameras through a single digital video surveillance software application.
- E. Provide (3) Remote View Software and licenses to allow live and recorded video viewing on any Windows-base remote client via a network.
- F. Provide Archive Utility software to allow transfer of video and audio data from the recording server to another computer on the network.
- G. Provide IP Camera licenses for each camera on the network, plus 10% additional camera licenses.

PART 3 - EXECUTION

3.1 COORDINATION

- A. The Contractor shall meet with the Owner at least twice prior to preparation of Shop Drawings to discuss and determining the Owner's planned operating environment, including

1. Camera frame rate and resolution during normal and alarm conditions
 2. Location of recording and monitoring equipment
 3. Integration with existing equipment.
- B. Based on the Owner-Contractor meeting, provide a recommended equipment list and installation plan to the Owner for the Owner-provided equipment, including:
1. PCs or Servers for installation of Network Video Recording Software
 2. Data Storage devices, including recommended storage capacity
- C. Based on the information from the meetings, include in the Shop Drawings:
1. A full system diagram showing Contractor's and Owner's new and existing head-end equipment.
 2. Capacities, including storage, frame rate, and resolution.

3.2 INSTALLATION

- A. It shall be the responsibility of the contractor to cooperate with representatives of the owner in order to achieve well-coordinated progress and satisfactory results. Schedule all work to prevent conflicts with other activities in the building. Execute without claim for extra payment moderate moves or changes as are necessary to accommodate other equipment, or to preserve symmetry and pleasing appearance.
- B. Coordinate the exact location of all devices prior to installation with the general and electrical contractors.
- C. The contractor will be responsible for all signal cable routing, termination, connection and testing associated with equipment required to provide a fully operational and functioning video surveillance system. This includes cable and routing to other rooms associated with and connected to the video surveillance system.
- D. Rack mount all equipment unless otherwise indicated. Dress all cabling into equipment rack with proper strain relief and secure with cable ties to the side of the rack opposite the AC power strip. When installation is complete cables should be secured and neatly organized in rack or panel locations and label must be visible.
- E. Label each end of all cables with number and identification legend clearly identifying the connection point for cable end. Labels will be self laminating type compatible with Brady DAT-151-292.
- F. Maintain signal integrity at all times. During installation, pay attention to open grounds, broken shields, and other possible causes of poor video quality. Inspect all wiring after installation and make corrections as necessary when deficiencies are noted.

3.3 TESTING

- A. On completion of the system installation, demonstrate that proper signal level and quality have been maintained through all signal paths. All test equipment will be provided and calibrated by the video surveillance contractor.
- B. Signals must comply with the manufacturer's specification for each piece of equipment under test. If discrepancies between the test results and the manufacturer's specifications are

noted, this will be brought to the attention of the consultant and appropriate corrective action taken.

- C. The signal will be observed for AC hum or non-video related noise that is either visible in the displayed picture or detectable on the scope. The video surveillance contractor will be responsible for correcting any discrepancies relating to signal quality.
- D. All adjustments to equipment will be made by a qualified technician.
- E. Notify the architect a minimum of 48 hours prior to testing so that he may, at his discretion; furnish representatives to witness the testing procedure and results.
- F. Submit copies of the test results as described above prior to final acceptance and training. Include copies of the test results in the O&M manuals. Include the names of the individuals performing and witnessing the tests, and the manufacturer's name and model number of the test equipment used. Include a block diagram of the test setup for each test.
- G. Cameras will be setup and adjusted to accommodate the different lighting conditions present in the room.

3.4 DEMONSTRATION/INSTRUCTION

- A. At the satisfactory completion of the system demonstration and acceptance testing, the contractor shall conduct a minimum two hour instruction session of the Owner's designated personnel. The session shall be conducted by a Contractor's representative thoroughly familiar with the system. System O&M manuals will be transmitted to the Architect prior to scheduling the instruction session. The training session will include:
 - 1. General operation of the system.
 - 2. Specific operation of all user-accessible equipment.
 - 3. Explanation of the system warranty and the process for the owner to follow during the warranty period for system malfunctions.

END OF SECTION