

SECTION 28 23 00 - SURVEILLANCE SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Contractor shall provide a complete surveillance system including IP digital surveillance cameras and all associated wiring. Wiring shall extend from camera locations to the closest data room and shall be terminated on network rack patch panels.

1.2 RELATED SECTIONS

- A. Section 26 05 33 – Raceway and Boxes
- B. Section 27 10 00 – Structured Cabling
- C. Section 28 13 00 – Door Access Control System

1.3 REFERENCES

- A. National Fire Protection Association (NFPA): NFPA 70 - National Electrical Code.
- B. Underwriters Laboratories Incorporated (UL):
 - 1. UL 609 – Local Burglar Alarm Units.
 - 2. UL 634 – Connectors and Switches for Use with Burglar Alarm Systems.
 - 3. UL 639 – Intrusion Detection Devices.
 - 4. UL1023 – House-hold Burglar Alarm Systems.
 - 5. UL 1076 – Proprietary Burglar Alarm Units and Systems.

1.4 REGULATORY REQUIREMENTS

- A. Comply with requirements of NFPA 70.
- B. Comply with UL Standard 609, 1023, and 1076.
- C. FM Compliance: Provide FM-approved intrusion detection systems and components.

1.5 SYSTEMS DESCRIPTION

- A. Surveillance System: Provide a complete IP digital camera surveillance system to be connected to the local area network and to the Internet for web-based browser control. System shall include all necessary software to allow for the following features:
 - 1. Monitoring of JPEG format images by web browser access to IP address of cameras.
 - 2. Provision of MPEG-4 movie image compression format.
 - 3. Cameras rated for low-light performance of 0.2 footcandles at a sensitivity of 10x.
 - 4. Cameras with control of views in both the horizontal and vertical directions from a personal computer with a wide angle view covering 140 degrees for panning and 120 degrees for tilting.
 - 5. Software shall facilitate automatic controlling of up to eight cameras with a single computer key stroke.
 - 6. Software shall store up to 60 alarm images with date, time, and type of alarm.

7. Software shall facilitate automatic notification of alarm events by email.

1.6 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Division 1 and Section 26 00 00.
- B. Provide wiring diagrams, data sheets, and equipment ratings, layout, dimensions, and finishes.
- C. Submit manufacturer's installation instructions under provisions of Division 1 and Section 26 00 00.
- D. Submit manufacturer's certificate under provisions of Division 1 and Section 26 00 00 that the system meets or exceeds specified requirements.

1.7 PROJECT RECORD DRAWINGS

- A. Submit documents under provisions of Division 1 and Section 26 00 00.
- B. Record actual locations and devices, and routing of surveillance wiring.

1.8 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Provide written operating and maintenance instructions as specified in Section 26 00 00. Include product data and operation/maintenance information for all system components.
- B. The Owner may assign personnel to participate with the Contractor during installation. Without delaying work, familiarize the Owner's personnel with the installation, equipment, and maintenance.
- C. During tests and adjustments, permit the Owner's personnel to observe. When feasible, explain the significance of each test.
- D. Provide sufficient training to personnel selected by the Owner on operation and basic maintenance of all systems and equipment.
- E. Employ manufacturer's field representative to demonstrate system operation to designated Owner personnel.
- F. Conduct walking tour of project and briefly describe function, operation, and maintenance of each component.
- G. Use submitted operation and maintenance manual as reference during demonstration and training.
- H. Provide the owner with a training program designed to make all administrative control station users familiar with the operation of the surveillance system.

1.9 COORDINATION

- A. The Contractor shall provide all miscellaneous items and accessories required to make the system operational whether or not such items are specifically mentioned in the plans and specifications. It is the Contractor's responsibility to review the architectural, structural, mechanical, and electrical drawings, as well as the specifications, for any details that may impact the installation or provisioning of the system. Any discrepancies discovered shall be brought to the attention of the engineer and Owner.

1.10 WARRANTY

- A. The Contractor shall warranty all electronic components for five (5) years and workmanship and labor for a period of one (1) year from the date of system acceptance or beneficial usage by the Owner. Neither the final payment, nor any provisions in the contract documents shall relieve the Contractor (or General Contractor) of the responsibility for faulty materials and/or workmanship for a period of one year. This Contractor shall remedy any defects due thereto, and pay for any damage to work resulting wherefrom.

PART 2 - PRODUCTS

2.1 SURVEILLANCE SYSTEM

- A. Products specified herein are referenced by *Panasonic* model numbers. Equal products by the following manufacturers will also be accepted:
1. *IQinvision*
 2. *Axis*
 3. *Sony*
- B. Surveillance IP Cameras: *Panasonic WV-NM100 Series*.
1. Provide cameras meeting the following functions:
 - a) Pick-up Device: 1/4 type solid state image sensor
 - b) Effective Pixels: 660 (H) x 492 (V) pixels
 - c) Min. Illumination: 2 lx (electronic sensitivity x 10), 10 lx (electronic sensitivity off)
 - d) Picture Sampling at Image Sensor: 30 ips
 - e) Lens: Fixed focal type
 - f) Panning Angle: 140 degree
 - g) Tilting Angle: 120 degree
 - h) Pan/Tilt Preset: Eight (8) position
 - i) Image Compression Type: JPEG/MPEG-4 Selectable (requires standard plug-in software for MPEG-4)
 - j) Image Size: JPEG: VGA (640 x 480), QVGA (320 x 240), QQVGA (160 x 120), MPEG-4: CIF (352 x 288), QCIF (176 x 144)
 - k) Protocol Supported: TCP/IP, UDP/IP, HTTP, FTP, SMTP, RTP, DNS, DDNS, DHCP, ARP, BOOTP, SNMP, NTP
 - l) Network: 10Base-T/100Base-TX (RJ-45 x 1)
 - m) Alarm Interface: Alarm input x 1, Alarm output x 1, Aux output x 1
 - n) Power Supply: DC9V
 - o) Power Consumption: 9W
 - p) Ambient Operating Temperature: 0° C- +40° C

- q) Dimensions: 93 (W) x 95 (H) x 61.5 (D) mm
- r) Weight (approx.): 180g (0.4 lbs.)

2.2 WIRE AND CABLE

- A. Provide 4-pair CAT6 cable for each camera (and for future camera locations as identified on the plans) as specified under Section 27 10 00.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.
- B. Report in writing to Architect prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- C. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost.

3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Install system according to NFPA 70, applicable codes, and manufacturer's published instructions.
- B. Comply with UL Standard 681.
- C. Wiring Method: Install wiring along network cable paths as identified on the plans. Splices and/or taps in wiring are not permitted.
- D. Install all components in full conformance with manufacturer's instructions.
- E. Install cameras on walls at heights as directed by Architect.
- F. Where indicated on the plans, provide cable and termination box above ceilings for future IP cameras. Extend wiring to closest data room, and terminate at network patch panels.
- G. Provide a 9V DC battery for each IP camera.

3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Provide services of factory-authorized service representative to supervise field assembly and connection of components and system pre-testing, testing, adjustment, and programming.
- B. Inspection:
 - 1. Inspect equipment installation, interconnection with system devices, mounting locations, and mounting methods.

2. Verify that cameras are properly installed, connected, and labeled and that interconnecting wires and terminals are identified.
- C. Pre-testing: Align and adjust system and perform pre-testing of components, wiring, and functions to verify conformance with specified requirements. Correct deficiencies by replacing malfunctioning or damaged items with new items. Retest until satisfactory performance and conditions are achieved.
- D. Acceptance Operational Tests:
 1. Perform operational system tests to verify conformance with specifications.
 2. Provide minimum 10 days notice of acceptance test performance schedule to Architect who will coordinate with Owner.
- E. Re-testing: Correct deficiencies and retest until total system meets the requirements of Specifications and complies with applicable standards.

END OF SECTION 28 23 00