

## SECTION 282000 - VIDEO SURVEILLANCE

### PART 2 - GENERAL

#### 2.3 SUMMARY

- A. Section includes a video surveillance system (NETWORK / IP Camera System) consisting of Vandal resistant Dome Cameras, Network Video Recorder ("Plug & Play" type), Video Monitor, Transmission Wiring (Cat 6) and desktop Control Station with its associated equipment.

**Important Note: All Software license (s) must be included with the proposed CCTV equipment.**

#### 2.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include dimensions and data on features, performance, electrical characteristics, ratings, and finishes.

#### 2.5 INFORMATIONAL SUBMITTALS

- A. Seismic Qualification Certificates: For video surveillance, cameras, camera-supporting equipment, accessories, and components, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

#### 2.6 QUALITY ASSURANCE

- A. Electronical Components, Devices and Accessories: Listed and Labelled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NECA 1.
- C. Comply with NFPA 70.

#### 2.7 PROJECT CONDITIONS

- A. Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

1. Interior, Uncontrolled Environment: System components installed in non-air-conditioned interior environments shall be rated for continuous operation in ambient temperatures of 0 to 122 deg F (minus 18 to plus 50 deg C) dry bulb and 20 to 90 percent relative humidity, noncondensing. Use NEMA 250, Type 3R enclosures.
2. Exterior Environment: System components installed in locations exposed to weather shall be rated for continuous operation in ambient temperatures of minus 30 to plus 122 deg F (minus 34 to plus 50 deg C) dry bulb and 20 to 90 percent relative humidity, condensing. Rate for continuous operation when exposed to rain as specified in NEMA 250, winds up to 85 mph (137 km/h). ,
3. Security Environment: Camera housing for use in high-risk areas where surveillance equipment may be subject to physical violence.

## 2.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of cameras, equipment related to camera operation, and control-station equipment that fail in materials or workmanship within specified warranty period.
  1. Warranty Period: Two years from date of Substantial Completion.

## PART 3 - PRODUCTS

### 3.3 SYSTEM REQUIREMENTS

- A. Video – signal format shall comply with ONVIF Protocol / NDAA.
- B. STANDARD CAMERAS (TWO TYPES)

2.1A Network / IP Camera: Assembled and tested as a manufactured unit, containing vandal resistant dome assembly and Network type Camera, which shall have the following features:

1. Comply with: NDAA
2. Image Sensor: CMOS
3. Minimum Resolution: 5 Mega Pixels @ 30 FPS (or 2592 X 1944)
4. Minimum Illumination / Light Sensitivity (Color): 0.2
5. Varifocal Lens: 3 to 9 mm
6. Minimum Wide Dynamic Range: Forensic Capture
7. Minimum “Cybersecurity”
  - 7a Multi – level users
  - 7b HTTPS encryption
  - 7c IP Address Filtering
  - 7d IEEE 802.1 X
  - 7e Secure Boot
  - 7f Signed Firmware
  - 7g TPT

2.1B 12 Mega Pixel INDOOR / OUTDOOR 360 ° Panoramic Network Dome Camera, Equipped with 1.6 mm Fixed Lens.

## 2.2 NETWORK VIDEO RECORDER (1 TYPE)

Assembled and tested as a 16 Camera Channels (with 16 “PLUG & PLAY” Ports), Which supports 4K UHD Resolution and at least one (1) – 12 MEGA Pixel INDOOR / OUTDOOR 360° Panoramic Dome Camera, which shall also have the following features:

1. Comply with: ONVIF Protocol
2. Equipped with Continuous Recording Option and able to have H.265 / H.265+/H.264/H.264+ VIDEO Compression
3. CLOUD Upgradeable & CLOUD Storage
4. True P2P Connectivity with QR “Code Connect”
5. Multiple video search options including “Smart” and Thumbnail Search for quick retrieval of footage
6. Local HDMI Main Monitor Output with 4 K Support
7. Free iOS & Android Apps for Smart Phones & Tablets
8. Free Central Management Software (CMS) to manage multiple units & sites from a single platform (and to be able to transfer the selected image / footage to a PC or Memory Card).
9. Free MAC client software to easily manage the system (from the Apple PC).

## 2.3 CAMERA – SUPPORTING EQUIPMENT

Mounting Brackets and / or Boxes for Dome Cameras: Type Matched to items supported (i.e. an installer shall use original Camera manufacturer’ Mounts or Boxes, to insure proper installation).

## 2.4 COLOR (LED type) MONITORS:

Assembled and tested as a standalone 32” (measured diagonally) – Ultra High Definition (4K) Monitor with a minimum Resolution Image (of 3840 X 2160), which shall also have the following features:

- 2.5a Suitable for all Video Surveillance and Security Applications
- 2.5b to have at least 170 ° Viewing Angle
- 2.5c 16.7 Million Colors Capacity
- 2.5d to have 3D type "COMB FILTER"
- 2.5e to have / be “VESA MOUNT” Compatible

## 2.5 SIGNAL TRANSMISSION COMPONENTS

- A. CAT 6E type Cable (Each Cable includes four pairs of 24 Gauge Wire, which is to have precise number of twists per meter based on prime numbers, to minimize “crosstalk” between the pairs.
- B. Only a Gold - plated RJ 45 type “pass through” Connector shall be used.

## PART 3 – EXECUTION

### 3.1 WIRING

- A. Comply with requirements of the General Electrical Wiring in Section (260533 – “Raceways and Boxes for Electrical Systems”).
- B. Wiring Method: Always install the Cat 6 cable inside the metal raceways or metal rigid conduit unless otherwise indicated, to protect a very fragile Cat 6 wiring.
- C. Grounding: Provide independent – signal circuit grounding recommended in wiring by the manufacturer (if applicable).
- D. Always provide adequate Power Surge Protector (s) to protect NVR, Video Monitor and other Camera related equipment.

### 3.2 VIDEO SURVEILLANCE SYSTEM INSTALLATION

- A. Always avoid Ground Loops by making Ground connection only at the Control Station / NVR location.

### 3.2 CONTROL STATIONS

- A. Description: Heavy-duty, freestanding, modular, metal furniture units arranged to house electronic equipment. Coordinate component arrangement and wiring with components and wiring of other systems.
- B. Power Continuity for Control Station: Batteries in power supplies of central-station control units and individual system components shall maintain continuous system operation during outages of both normal and backup ac system supply.

### 3.3 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain video-surveillance equipment.

END OF SECTION 282000