Agenda Item:	IV G: Action Item
Date:	August 10, 2023
To:	Magnolia Educational & Research Foundation dba Magnolia Public Schools ("**MPS**") Board of Directors (the "**Board**")
From:	Alfredo Rubalcava, CEO & Superintendent
Staff Lead(s):	Suat Acar, Chief Operations Officer
RE:	Magnolia Science Academy – 8 Surveillance Cameras' Installation: Procedures & Design

Action Proposed:

I move that Board approve the proposed MSA-8 Surveillance Cameras' Installation: Procedures and Design.

Purpose:

- What services are being provided?
  - Magnolia Science Academy-8 (MSA 8) is requesting the MPS Board approve the attached designs for surveillance cameras for the shared spaces under the control of MSA 8 inside the Orchard Campus of the LAUSD where MSA 8 resides in as a Public School Choice school.
- Why is this Installation needed?
  - The main reason behind this request centers around the school safety and due process transparency. We want to ensure that if an allegation arises involving a student and a student, or a student and an adult that requires investigation, that all parties are on the same page about what physically transpired. Specifically, the following concerns support the use of cameras in MSA 8's classrooms and outdoor areas:
    - Student/ Staff Safety Concerns
      - Student vs. Student: Scenario - Dangerous Object
        - If a student is accused of pointing a dangerous object at another student, we want to ensure that all parties can view the footage from the same vantage point, during school mediation and should litigation require such a process to occur. This will help strengthen the case of the truth and will simultaneously take away the possibility of credibility of witness statements being brought into question in cases of physical safety concerns.
        - Student vs. Student - Intimidation of Witness/Bullying
          - In cases of alleged bullying where no additional witnesses come forward due to fear of retaliation by an alleged perpetrator, it is helpful to view transparent footage clearly demonstrating if both sides are mutually physically harassing each other, or if the interaction is one-sided from the bully to the victim
        - Student vs. Staff: Scenario - Corporal Punishment
          - If a physical allegation such as corporal punishment is made against an adult, we want to also ensure that all parties can view the actual events which transpired without having to question the interpretation or degree of honesty in witness statements. From the student end, if a student feels that a staff member used corporal punishment against them, the cameras can show this occurred. On the other hand, when staff are concerned that

students may make up a false allegation against them regarding corporal punishment, then the truth about the innocence of the staff member will be indisputable upon viewing the footage.

- Is this a school or organization-wide implementation?
  - Currently, MSA 8 is requesting that the provided plans and designs to be approved by the MPS board so for the purposes of supporting MSA 8's expressed intent to have a schoolwide implementation, including all outdoor areas, hallways and classrooms.

Background:

- What contracts are already in place?
  - As a co-located LAUSD site, this project will be planned, designed under the authority and the supervision of the LAUSD Facilities and contract departments
  - After the ongoing meetings, and LAUSD Staff visits to calculate the cost of this project, he billing amount has been set forth by the LAUSD is $86,913.67.

Analysis:

- Were any RFPs done?
  - No. The LAUSD runs the project for MSA 8. We just pay the LAUSD.
- What negotiations were made?
  - None. We must accept the price quote set forth by the LAUSD.
- What is the research/comparison data?
  - School districts across the nation have policies which support the use of video surveillance cameras in classrooms and other areas of campus. The LAUSD co-located Curtiss site already has surveillance cameras across the campus. By the help of this project the MSA 8 will have access and administrative privileges to the areas assigned to it under the Public School Choice Facility Usage Agreement.

Impact:

With the approval of the proposed surveillance cameras' installation, the MSA 8 expects increased security in the campus and enhanced implementation of the discipline polices and procedures.

Budget Implications:

The proposed LAUSD plan for design and installation of this project is $86,913.67. These costs will be paid for by MSA Bell's operating budget for 2023-24 that was approved by the board on June 22, 2023.

Exhibits:
- Appendix 1: Specs of the LAUSD surveillance system to be installed in the MSA 8 campus (Pg. 3)
- Appendix 2 A: The LAUSD billing invoice (Pg. 32)
- Appendix 2 B: The LAUSD billing invoice breakdown (Pg. 33)

SECTION 282300

VIDEO SURVEILLANCE SYSTEM AND AUDIO SURVEILLANCE SYSTEM (VSS/ASS)

EDITNOTE:

1. **LAUSD INFORMATION TECHNOLOGY DIVISION (ITD) IS THE ONLY AUTHORITY FOR CHANGES OR MODIFICATION TO THIS SPECIFICATION. NO CHANGES OR MODIFICATIONS SHALL BE MADE WITHOUT SPECIFIC APPROVAL FROM ITD.**

2. **BOLDED SECTIONS AND TEXT IN BOXES MUST BE REMOVED PRIOR TO ASSEMBLING PROJECT MANUAL.**

3. **INCLUDE SECTION 26 0126 TEST AND ACCEPTANCE REQUIREMENTS AS PART OF THE PROJECT MANUAL; SECTION 26 0126 SHALL SUPPLEMENT 28 2313 IN ALL CASES.**

4. **POLICY BULLETIN 1197 APPLIES TO VIDEO SURVEILLANCE SYSTEMS INSTALLED IN SCHOOLS AND AT SCHOOL GROUNDS.**

PART 1 – GENERAL

1.01   SUMMARY

A.   The Video Surveillance system shall be a TCP/IP based High Definition CCTV Digital Video System.

B.   The Audio Surveillance System shall be an analog audio monitoring and notification system.

C.   The Video surveillance system shall be integrated with LAUSD's Integrated Security Management and Monitoring System (ISMS).

D.   The Audio Surveillance Systems(ASS) shall be deployed only in underground and/or enclosed parking structures. No other area of the site may have audio surveillance systems installed. If the CCTV VSS camera system submitted includes microphones or other audio capabilities, those features shall be permanently disabled.

E.   The Video Surveillance System(VSS) Cameras located in enclosed parking structures shall have view synchronization with the Audio Surveillance System wherein a close proximity PTZ camera will pan to audible sound alerts and/or manual call station alerts.

1.02   RELATED SECTIONS

A.   Applicable Division 1 sections

B.   Section 00 7000: General Conditions

C.   Section 01 7700: Contract Closeout

D.   Section 21 2323: Excavating, Backfilling and Compacting for Utilities

E.   Section 06 1000: Rough Carpentry

F.   Section 26 0500: Common Works Results for Electrical

G.   Section 26 0513: Basic Electrical Materials and Methods.

H.   Section 26 0526: Grounding and Bonding

I.   Section 26 0533: Raceways and Boxes Fittings and Supports.

J.   Section 26 2416: Panelboards and Signal Terminal Cabinets

K.   Section 265200: Emergency Power Systems.

L.   Section 27 0536: Cable Trays for Communications.

M.   Section 27 1015 Pemises Wiring New Installation

N.   Section 27 1017 Wireless LAN

O.   Section 27 1018 10G Local Area Network (LAN) Systems_

P.   Section 28 1000 Access Control System (ACS)

Q.   Section 28 3000 Intrusion Detection System (IDS)

R.   Section 28 5000 Integrated Security Management System (ISMs)

1.03   REFERENCES

A.   IEC/EN/UL 60950-1: – Information Technology Equipment - Safety - Part 1: General Requirements

B.   IEC/EN/UL 60950-22: Technology Equipment Safety – Part 22: Equipment to be Installed Outdoors

C.   SMPTE 296M (HDTV 720p) - 1280 x 720 Progressive Image Sample Structure – Analogue and Digital Representation and Analogue Interface.

D.   SMPTE 274M (HDTV 1080p) - 1920 x 1080 Image Sample Structure, Digital Representation and Digital Timing Reference Sequences for Multiple Picture Rates.

E.   SMPTE ST 2036-1 (UHDTV): Ultra High Definition Television (UHDTV)

F.   ISO/IEC 14496-10 Advanced Video Coding (H.264) – Advanced Video Coding (H.264)

G.   IEEE 802.3at (Power over Ethernet Plus) – Power over Ethernet Plus

H.   IEEE 802.1X (Authentication) – Standard for Local and metropolitan area networks-Port-Based Network Access Control (Authentication)

I.   IPv4 (RFC 791) – Internet Protocol Version 4

J.   IPv6 (RFC 2460) – Internet Protocol Version 6

K.   QoS – DiffServ (RFC 2475) – Scalable End-to-End Quality of Service Model

L.   Relevant ONVIF "S"profile as defined by the ONVIF Organization.

M.   IEC/EN 60529 IP66 (Ingress protection) – Degrees of Protection Provided by Enclosures (IP Code)

N.   NEMA 250 Type 4X – Enclosures for Electrical Equipment

O.   IEC/EN 62262 IK10 – Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)

1.04   SUBMITTALS

A.   List of Materials: Submit a complete list of proposed materials.

B.   Shop Drawings: Provide detailed and dimensioned Shop Drawings indicating kind, weight and thickness of materials, method of fitting and fastening parts together, location and number of parts or modules, sizes, and complete details of method of fitting suspension and fastening luminaires in place. Provide wiring and cabling diagrams. Drawings shall contain sufficient information to assemble and install equipment at the Project site without further instructions.

C.   Installation Instructions: Submit manufacturer's written installation instructions for luminaires and accessories.

1.05   SUBSTITUTIONS

A.   Equipment and materials that deviate from these requirements shall not be accepted without written approval from OWNER'S Information Technology project manager. When deviating or proposing material substitutions the following information shall be submitted:

    1.   Substitution request form substantiating reasons and benefits to OWNER, and all necessary documents to validate the claims made in the substitution form.

    2.   Submittals must comply with contract general provisions.

B.   The CONTRACTOR assumes all responsibility for additional costs, directly or indirectly, associated with proposing and installing an approved substitution products. All substituted products must meet the intent of form and function identified in the specification.

1.06   QUALITY ASSURANCE

A.   The CONTRACTOR or security sub-CONTRACTOR shall be a licensed security CONTRACTOR with a minimum of five (5) years' experience installing and servicing systems of similar scope and complexity, and evidence that CONTRACTOR has completed at least three (3) projects of similar scope, and is currently engaged in the installation and maintenance of systems herein described.

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B. All installation, configuration, setup, program and related work shall be performed by electronic technicians thoroughly trained by the manufacturer in the installation and service of the equipment provided.

C. The CONTRACTOR or designated sub-CONTRACTOR shall submit installer's third party verified credentials of completion of manufacturer certification. The CONTRACTOR system programmer shall have attended manufacturer training and obtained the highest level certifications for the ISMS, ACS and VMS.

D. The CONTRACTOR shall provide four (4) current references from clients with systems of similar scope and complexity that became operational in the past three (3) years. At least three (3) of the references shall be utilizing the same system components, in a similar configuration as the proposed system.

E. The video surveillance system shall be in compliance with applicable industry standards listed under article 1.03-References.

1.07 WARRANTY

A. CONTRACTOR shall warranty that all work executed and materials furnished shall be free from defects in materials and workmanship for a minimum period of five (5) years from date of installation acceptance, excluding specific items of work that require a warranty of a greater period that may be set forth in this Specification. In the event a manufacturer's warranty is longer than five (5) years, the manufacturer's warranty shall be the warranty period. Immediately upon receipt of written notice from the OWNER, the CONTRACTOR shall repair or replace at no expense to the OWNER, any defective material or work that may be discovered before final acceptance of work or within the warranty period; any material or work damaged thereby; and adjacent material or work that may be displaced in repair or replacement. Examination of, or failure to, examine work by the OWNER shall not relieve CONTRACTOR from these obligations.

B. Warranty shall provide the OWNER direct access to manufacturer Technical Assistance Center (TAC), software updates, and defect support.

C. Manufacturer of provided equipment shall guarantee availability of parts common to provided system and/or full replacement units, for a period not less than 5 years. Parts for the supplied systems shall be available within 30 calendar days during the 5 year period.

D. Installation CONTRACTOR shall install all equipment in accordance with manufacturer's specifications and recommendations necessary to ensure continuation of the manufacturer's warranty. If the installation CONTRACTOR cannot install manufacturer's equipment in such a manner, it is the responsibility of the installation CONTRACTOR to provide written, timely notification to OWNER ITD Project Management.

E. OWNER monitors equipment service records and failure rates. In the event that the OWNER determines that a LAN system component, or model part, provided through this specification exceeds acceptable failure rate, or repeated failure rate, the CONTRACTOR shall replace all systems of the same model purchased through this procurement with a new model that meets or exceeds the same functional

requirements. Units or components exceeding either the acceptable or repeated failure rates shall be known as a "mass failure." The CONTRACTOR shall provide qualified technicians to install the replacement systems and a project manager to coordinate replacement schedule with ITD. Replacement of mass failing systems, labor, and project management shall be provided and completed in accordance with this specification and related OWNER installation guidelines at no additional cost to the OWNER.

F.   The acceptable failure rate/repeat failure rate for a single system model or individual modular model part, at a single site, or OWNER-wide, shall be:

G.   Equal to or less than 10% in any 12 month period during the original warranty term.

H.   Equal to or less than 15% cumulative failures during the entire term of the original warranty.

I.   If, at any time during of the warranty term, the failure rate of the LAN systems or components exceeds 10%, the CONTRACTOR shall extend the original warranty term by one year, at no additional cost to the OWNER.

J.   The CONTRACTOR is responsible for replacement of any failed equipment provided by the CONTRACTOR, during the warranty period or the extended warranty period. This includes equipment that falls under the "mass failure" definition.

K.   In the event of a "mass failure" the CONTRACTOR shall replace all units and/or components affected within 60 days or written notification from the OWNER.

L.   Upon replacement of each unit or component, the replaced unit warranty shall continue as if the original equipment were still in service.

M.   The warranty shall cover the complete system including fan assembly, power supplies, and the device itself.

N.   The warranty shall include onsite 48-hour advanced part replacement.

O.   The warranty shall include all labor to service and/or replace warranted system(s).

P.   In the event any Supplier or manufacturer offers additional warranty, at no additional cost, beyond that specified herein, CONTRACTOR shall state the terms of such warranty or warranties in writing and shall extend the same to the OWNER without additional cost.

Q.   Equipment manufacturers shall have E-mail trouble reporting and response mechanisms in place and a toll free 24-hour help center to assist with troubleshooting and operation of the equipment at no additional cost to the OWNER, or as part of the warranty.

PART 2 – PRODUCTS

2.01   CAMERAS AND CAPABILITIES

A.   General Requirements:

1. System overall shall be capable of intelligent video analytic and triggers actions based on programming requirements.

2. Cameras shall be IP-based and comply with established network and video standards.

3. Cameras shall support true day/night vision modes using IR cut filters.

4. Camera enclosure shall be rated as follow;

    a. Vandal resistance – IK10

    b. Ingress protection – IP67, NEMA 4X, or higher

5. The primary power source of cameras shall be powered by data nework switches equipped with PoE/PoE+/UPoE capabilities as specified by Section 27 1018 10G Local Area Network (LAN) Systems. The secondary power sources (e.g. injectors, midspans, local power) shall be reviewed and approved by OWNER on a case by case basis.

6. Cameras shall be fully supported by an open and published API (Application Programmers Interface), which shall provide necessary information for integration of functionality into third party applications. Manufacturers SDK (software development kit) must be available to the general public.

7. Cameras shall be in conformance with profile S as currently defined by the ONVIF Organization (www.onvif.org/conformant-products) including firmware upgrade to meet future revisions.

8. Camera types listed below describing various resolutions, form-factor and features shall be supplied by a single manufacturer per site, and meet or exceed the following requirements:

    a. The camera shall be equipped with IR progressive scan sensor.

    b. The camera shall provide true day/night functionality.

    c. The camera shall be equipped with shall provide local video storage (e.g. a microSD/microSDHC/microSDXC memory card expansion).

9. The camera shall allow for video to be transported over:

    a. HTTP (Unicast)

    b. HTTPS (Unicast)

    c. SRTP (Unicast & Multicast)

    d. RTP over RTSP (Unicast)

    e. RTP over RTSP over HTTP (Unicast)

10. The camera shall support Quality of Service (QoS) for traffic prioritization.

11. User Interface shall comply with the following:

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a.   The camera shall contain a built-in web server making video and configuration available to multiple clients in a standard operating system and browser environment using HTTP, without the need for additional software or specialty plugins

b.   The camera shall be accessible via camera IP address directly using client software supported by the equipment manufacturer

12.   Protocol Requirements:

a.   At the minimum, camera shall incorporate support for IPv4/v6, HTTP, HTTPS, SSL/TLS, QoS, TCP, ICMP, SNMPv1/v2c/v3 (MIB-II), RTSP, RTP, SRTP, UDP, IGMP, RTCP, SMTP, FTP, DHCP, ARP, DNS, DynDNS, SOCKS, SSH, NTP, CIFS/SMB.

13.   Text overlay requirement:

a.   Provide embedded on-screen text with support for date & time, and a customer-specific text, camera name, minimum of 45 ASCII characters.

b.   Provide the ability to apply privacy masks to the image.

c.   Allow for the overlay of a graphical image, such as a logotype, into the image.

14.   Security

a.   The camera shall support the use minimum of 128 bit encryption for secured authentication and communication of both administration data and video streams.

b.   The camera shall support IEEE 802.1X authentication.

c.   The camera shall provide support for restricting access to pre-defined IP addresses only.

d.   The camera shall restrict access to the built-in web server by usernames and passwords at three different levels.

e.   The camera shall not allow third party firmware to be loaded onto the camera.

15.   The camera shall be equipped with basic intelligent video analytic functionality that can be triggered by:

a.   Intelligent Video Detection

b.   Audio Detection (optional)

c.   Live Stream Accessed

d.   Camera tampering

e.   Auto tracking

f.   Scene alteration detection (e.g. removed object detection)

16.   Response to triggers shall include capability of:

a. Send SNMP trap or email notification

b. Send images, using FTP, HTTP, HTTPS, network share or email

c. Send video clip, using FTP, HTTP, HTTPS, network share or email

17. The camera shall incorporate a function for image stabilization

18. The camera shall provide remote focus, remote zoom, and alignment

19. Hardware interface requirements

a. Network interface

(1) The camera shall be equipped with one (1) auto-negotiating10/100 Base-T Ethernet port.

20. Environmental operational requirements

a. Operate in a temperature range of -40 °C to +60 °C (-40 °F to 140 °F).

b. Operate in a humidity range of 10–100% RH (condensing).

21. Installation and maintenance:

a. The camera shall be supplied with management software which allows the assignment of IP addresses, upgrade of firmware and backup of the cameras' configuration.

b. The camera shall allow updates of the software (firmware) remotely over the IP network infrastructure.

c. The camera shall provide Autorotation functionality.

B. Type 1 Camera Requirements

1. Illumination: The camera shall meet or exceed the following illumination specifications:

a. Color: 0.3 with WDR image processing capability;

b. B/W: 0.02 lux with WDR image processing capability

2. Target Resolution:

a. Ability to distinguish an object from background within 125 feet (*)

b. Provide 20 pixels per linear foot. Contractor shall provide a pixel count per linera foot.

3. Encoding - The camera shall support the following video encoding algorithms:

a. Compression Format:

(1) Motion JPEG

(2) H.264 (Baseline/Main/High Profiles)

(3) The camera shall provide configurable compression levels.

      b.   The camera shall in H.264 support Variable Bit Rate (VBR) for video quality adapted to scene content. To protect the network from unexpected bit rate spikes the camera shall support Constant Bit Rate (CBR) or Maximum Bit Rate (MBR).

Type 2 Camera Requirements

4.   Illumination: The camera shall meet or exceed the following illumination specifications:

      a.   Color: 0.1 lux with WDR image processing capability. Minimum WDR of 120 db.

5.   Target Resolution:

      a.   Ability to classify an object class within 95 feet.

      b.   Provide 40 pixels per linear foot.

6.   Encoding - The camera shall support the following video encoding algorithms and format:

      a. Motion JPEG

      b. H.264 (Baseline/Main/High Profiles)

      c. The camera shall provide configurable compression levels.

      d.   The camera shall in H.264 support Variable Bit Rate (VBR) for video quality adapted to scene content. To protect the network from unexpected bit rate spikes the camera shall support Constant Bit Rate (CBR) or Maximum Bit Rate (MBR).

Type 3 Camera Requirements:

7.   Illumination: The camera shall meet or exceed the following illumination specifications:

      a.   Color: 0.2 with WDR image processing capability and minimum WDR of 120 db.

      b.   B/W: 0.008 lux with WDR image processing capability and minimum DWR of 120 db.

8.   Target Resolution:

      a.   Ability to describe the object in details within 45 feet.

      b.   Provide 80 pixels per linear foot.

      c.   The camera shall provide both landscape format (4:3 and 16:9 aspect ratio) as well as corridor format (3:4 and 9:16 aspect ratio).

9.   Encoding:

      a.   The camera shall support the following video encoding algorithms and format:

         (1)   Motion JPEG

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      (2)   H.264 (Baseline/Main/High Profiles)

      (3)   The camera shall provide configurable compression levels.

    b.   The camera shall in H.264 support Variable Bit Rate (VBR) for video quality adapted to scene content. To protect the network from unexpected bit rate spikes the camera shall support Constant Bit Rate (CBR) or Maximum Bit Rate (MBR).

Onboard Camera Minimum Requirements:

10.   Electronic day/night

11.   Meet EN 50115 (vibration and shock) and ISO 16750-3

12.   Maximum power consumption: 4 watts

13.   Illumination: The camera shall meet or exceed the following illumination specifications:

    a.   Minimum sensitivity of 1.0 lux with WDR image processing capability; (with minimum WDR of 70db)

14.   Target Resolution:

    a.   Ability to describe an object in details within 45 feet.

    b.   Provide 80 pixels per linear foot.

15.   Encoding - The camera shall support the following video encoding algorithms:

    a.   Compression Format:

      (1)   Motion JPEG

      (2)   H.264 (Baseline/Main/High Profiles)

      (3)   The camera shall provide configurable compression levels.

    b.   The camera shall in H.264 support Variable Bit Rate (VBR) for video quality adapted to scene content. To protect the network from unexpected bit rate spikes the camera shall support Constant Bit Rate (CBR) or Maximum Bit Rate (MBR).

2.02   NVR AND RELATED COMPONENTS

A.   NVR general requirements:

1.   The NRVshall be based on a true open architecture that shall allow the use of non-proprietary workstation and server hardware, non-proprietary network infrastructure and non-proprietary storage.

2.   The NVR shall be a pre-assembled appliance solution, or software based supporting VM (e.g. VMWare, Microsoft hypervisor). Other solution platforms be reviewed and approved by theOWNER on the case by case basis.

3.   The NVR shall be an IP enabled solution. All communication with the VSS system shall be based on standard TCP/IP protocol and have the capability to use network security.

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4. The NVR shall provide minimum of two (2) 1Gbps Ethernet network ports

5. The NVR shall support user authentication with claims-based authentication using external providers.

6. The NVR shall offer a complete and scalable video surveillance solution that shall allow cameras to be added on a unit-by-unit basis.

7. The NVR shall interface with analog-to-digital video encoders and IP cameras.

8. All video streams supplied from analog cameras or IP cameras shall be digitally encoded in MPEG-4, MPEG-2, MJPEG, H.264, H265, Wavelet, or JPEG2000 compression formats and recorded simultaneously in real time.

9. All audio streams supplied from IP video servers shall be digitally encoded in G.711 (u-law), G.721, G.723, or AAC compression formats and recorded simultaneously in real time.

10. Each camera's bit rate, frame rate, and resolution shall be set independently from other cameras in the system, and altering these settings shall not affect the recording and display settings of other cameras.

11. The NVR shall to support support only secured media stream requests, unless explicitly configured otherwise. Or have the capability to laverage network security cotrols. Secured media stream requests shall be secured with strong certificate based authentication leveraging RTSPS (aka RTSP over TLS). Client authentication for media stream requests is claims-based and may use a limited lifetime security token.

12. The NVR shall have the cability to encrypt the media stream, including video, audio, and metadata with authenticated encryption for transmission. Media stream encryption shall be done at rest and in transit and be a certificate based AES 128b bits encryption. The VMS shall:

    a. Allow encryption to be set on a per camera basis for all or some of the cameras.

    b. Allow encrypted streams to be exported.

13. The NVR shall support end to end encrypted streams with cameras supporting Secure RTP (SRTP) both in unicast and multicast from the camera.

14. The NVR shall be able to use multiple VSS keyboards to operate the entire set of cameras throughout the system, including brands of cameras from various manufacturers and including their PTZ functionalities.

15. The NVR shall be able to retrieve and set the current position of PTZ cameras using XYZ coordinates.

16. The NVR shall support PTZ camera protocols from multiple manufacturers, including analog and IP protocols.

17. The NVR shall arbitrate the user conflict on PTZ usage based on user levels per camera.

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18. The NVR shall support Audio and Video storage configuration for the NVR shall support:

    a. Internal or external computer data storage in RAID 0, 1, 5, 6, or 10 configuration.

    b. Within the overall storage system, the Audio and Video shall have the capability to include disks located on:

        (1) Local.

        (2) Network Attached Servers (NAS).

        (3) Storage Area Networks (SAN).

B. NVR RECORDING FUNCTION

1. The Recorder shall use an event and timestamp database for the advanced search of audio/video archives. This database shall use a SQL database.

2. The Recorder shall protect archived audio/video files and the system database against network access and non-administrative user access.

3. The Recorder shall digitally sign recorded video using 248-bit RSA public/private key cryptography.

4. The Recorder shall have the capacity to configure the key frame interval (I-frame) in seconds or number of frames.

5. The Recorder shall provide a pre-alarm and post-alarm recording option that can be set between one second and 5 minutes on a per camera basis.

6. The Recorder shall provide the functionality of storing of video and audio streams based on triggering events, such as:

a. Digital motion detection.

b. Digital input activation.

c. Macros.

d. Through SDK application recording.

7. The Recorder shall be capable of intelligent video analytic detection on each individual camera leveraging management template or levearage external server video analytics. Detection can be set into four different modes:

    a. Full Screen: All 1320 blocks on screen are activated and a general threshold for the overall detection in the entire image can be set, and when it is reached, it can trigger recording and a motion event or a custom event.

    b. Full Screen Unit: This is the same as the Full Screen but the motion detection takes place in the DVS.

    c. Detection Zone: Six overlapping zones can be defined in the 1320 blocks on screen with each of these zones having its own threshold, and, when that threshold is reached, each one of them can trigger recording and a motion event or a custom event. Each zone triggering its own event allows

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for the configuration of directional motion detection events and other complex motion detection logic.

  d. Detection Zone Unit: This is the same as the Detection Zone, but the motion detection takes place in the DVS and only one zone is supported.

  e. Disabled: No motion detection is performed on this camera.

8. The Recorder shall allow for multiple recording schedules to be assigned to a single camera. Each schedule shall be created with the following parameters:

  a. Recording mode:

   (1) Continuous.

   (2) On Motion/Manual.

   (3) Manual.

   (4) Disabled.

  b. Recurrence pattern:

   (1) Once on specific days.

   (2) Specific days on a yearly basis.

   (3) Specific days on a monthly basis.

   (4) Specific days on a weekly basis.

   (5) Daily.

  c. Time coverage:

   (1) All day.

   (2) Specific time range(s).

   (3) Daytime or night time based on the times of sunrise and sunset that are automatically calculated from the time of year and a geographical location. Provision shall be given to offset the calculated sunrise or sunset time by plus or minus 3 hours.

9. The Recorder shall allow each camera (video source) to be encoded multiple times for each camera stream in the same or different video formats (MPEG-4, MPEG-2, MJPEG, H.264, H.265, Wavelet or JPEG2000), limited only by the capabilities of each DVS.

10. The Recorder shall have the capacity to manage up to 10,000 video endpoints from one operation manager.

11. The Recorder shall allow users to view up to 5 million camera feeds across a federation model.

12. The Recorder shall have open APIs allowing integration into 3rd party applications, internally development applications and/or data connectivity for deeper analytics.

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13. Whenever multiple video streams are available from the same camera, users shall be free to use any one of them based on their assigned usage. The standard video stream usages are:

    a. Live.

    b. Recording.

    c. Remote.

    d. Low resolution.

    e. High resolution.

14. The Recorder shall allow the video quality to vary according to predefined schedules. Such schedules shall have the same configuration flexibility as the recording schedules mentioned earlier. The video quality shall be based on, but not limited to, the following parameters:

    a. Maximum bit rate.

    b. Maximum frame rate.

    c. Image quality.

    d. Key frame interval.

15. The Recorder shall have the ability to dynamically boost the quality of the "recording stream" (see previous bullet) based on specific events:

    a. When recording is started manually by a user.

    b. When recording is triggered by a macro, an alarm or detected motion.

16. The Recorder shall have the capacity to communicate using 128 bits SSL encryption and HTTPS secure protocol.

17. The Recorder shall have the capacity to redirect audio/video streams to active viewing clients on the network using unicast UDP or TCP.

18. The Recorder shall empower the administrator with a full range of disk management options:

    a. The Recorder shall allow the administrator to choose which disks to use for RECORDING and to set a maximum quota for each.

    b. The Recorder shall allow the administrator to spread the RECORDING of different cameras on different disk groups (groups of disks controlled by the same controller) so that RECORDING could be carried out in parallel on multiple disks.

19. The Recorder shall offer the following options to clean up old archives, on a camera by camera basis:

    a. After a preset number of days.

    b. Write over the oldest archives first when disks are full (FIFO – First In First Out).

    c. Stop RECORDING when disks are full.

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20.   The Recorder shall allow important video sequences to be protected against normal disk cleanup routines.

21.   Users shall have the following options when protecting a video sequence:

   a.   Until a specified date.

   b.   For a specified number of days.

   c.   Indefinitely (until the protection is explicitly removed).

22.   The Recorder shall allow the administrator to put a cap on the percentage of storage space occupied by protected video.

23.   The Recorder shall have the capacity to down-sample video streams for storage saving purposes. The down-sampling options available are the following:

   a.   For H.264, MPEG-4, and H.265, streams the down-sampling options are: all key frames, 1 fps, 2 sec./frame, 5 sec./frame, 10 sec./frame, 15 sec./frame, 30 sec./frame, 60 sec./frame, 120 sec./frame.

   b.   For MJPEG streams the down-sampling options are: 15 fps, 10 fps, 5 fps, 2 fps, 1 fps, 2 sec./frame, 5 sec./frame, 10 sec./frame, 15 sec./frame, 30 sec./frame, 60 sec./frame, 120 sec./frame.

C.   VMS CLIENT USER INTERFACE (UI)

1.   The Client Application shall provide the user interface for VSS configuration and monitoring over any network and be accessible locally or from a remote connection.

2.   The Client Application shall provide an easy-to-use graphical user interface (UI).

3.   The Client Application shall allow users to access up to 10,000 video end points.

4.   The Client Application shall allow users the capability to access up to 5 million video end points when in federator type of architecture.

5.   The client application for monitoring shall support running oin 64-bit mode.

6.   Logging on to a Client Application shall be done either through locally stored user accounts and passwords the operator's credentials when Active Directory integration is enabled.

7.   When integrated with Microsoft's Active Directory, the Client Application shall authenticate users using their Active Directory credentials.

8.   The Client Application shall fulfill the role of a Unified Security Interface that is able to monitor intrusion detection and access control events and alarms, as well as view live and recorded video.

9.   The Client Application shall provide a graphical user interface to control and monitor VSS. It shall allow administrators and operators with appropriate privileges to monitor their unified security platform, run reports, and manage alarms.

10. The Client Application shall include advanced video capabilities, including:

    a. Advanced live video viewing functionality.

    b. Advanced archive playing and video playback functionality.

    c. Monitoring and management of video system events and alarms.

    d. Intercom or duplex audio or SIP based application.

    e. Generation of video reports.

    f. Control of PTZ cameras.

    g. Creating and monitoring archive transfer requests.

    h. Display metadata overlaid on live or playback video.

11. The live video viewing capabilities of the Client Application shall include:

    a. The ability to display all cameras attached to the NVR's.

    b. Support for live video monitoring on each and every display tile within a task in the user's workspace.

    c. The ability to drag and drop a camera into a display tile for live viewing.

    d. The ability to drag and drop a camera from a map into a display tile for live viewing.

    e. Support for digital zoom on live camera video streams.

    f. The ability for audio communication with video units with audio input and output.

    g. The ability to control pan-tilt-zoom, iris, focus, and presets.

    h. The ability to bookmark important events for later retrieval on any RECORDING camera and to uniquely name each bookmark in order to facilitate future searches.

    i. The ability to start/stop recording on any camera in the system that is configured to allow manual recording by clicking on a single button.

    j. The ability to activate or de-activate viewing of all system events as they occur.

    k. The ability to switch to instant replay of the video for any RECORDING camera with the simple click of button.

    l. The ability to take snapshots of live video and be able to save or print the snapshots.

    m. The ability to view the same camera multiple times in different tiles.

12. The video playback (archive playing) capabilities of the Client Application shall include:

    a. Support for audio and video playback for any time span.

    b. Support for video playback on each and every display tile.

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     c.   The ability to instantly replay the video for any RECORDING camera with the simple click of a button.

     d.   The ability to select between instant synch of all video streams in playback mode, allowing operators to view events from multiple angles or across several camera fields, or non-synchronous playback.

     e.   The ability to simultaneously view the same camera in multiple tiles at different time intervals.

     f.   The ability to control playback with:

         (1)   Pause.

         (2)   Lock Speed.

         (3)   Forward and Reverse Playback at: 1x, 2x, 4x, 6x, 8x, 10x, 20x, 40x, 100x.

         (4)   Forward and Reverse Playback frame by frame.

         (5)   Slow Forward and Reverse Playback at: 1/8x, 1/4x, 1/3x, 1/2x.

         (6)   Loop playback between two time markers.

13.   The ability to display a single timeline or one timeline for each selected video stream, which would allow the operator to navigate through the video sequence by simply clicking on any point in the timeline.

14.   The ability to display the level of motion at any point on a timeline.

15.   The ability to clearly display bookmarked events on the timeline(s).

16.   The ability to query archived video using various search criteria, including, but not limited to, time, date, camera, and area.

17.   The tool necessary for searching video and associated audio based on user-defined events or motion parameters.

18.   The ability to define an area of the video field in which to search for motion as well as define the amount of motion that will trigger search results with the client or with intelligent video analytics. The Client Application shall then retrieve all archived video streams that contain motion that meets the search parameters. There shall be a graphical timeline on which the time of each search hit shall be indicated.

19.   The ability to browse through a list of all bookmarks created on the system and select any bookmarked event for viewing.

20.   The ability to add bookmarks to previously archived video for easier searching and retrieval.

21.   Support for digital zoom on playback video streams.

22.   Still image export to PNG, JPEG, GIF, and BMP format with Date and Time stamp, and Camera Name on the image (snapshot).

23.   Tools for exporting video sequences in standard video formats, such as ASF.

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24. The ability to encrypt exported video files.

25. The ability for an operator to load previously exported video files from their computer or network.

26. The ability for queries to be saved upon closing the Client Application and reappear when the application is reopened.

27. The ability to dynamically block, on demand, video stream dynamically to lower level users to prevent access, for a specific time, to live and recorded video.

28. A tool building and exporting a set of videos into a single container. This tool shall allow the operator to build sequences of video to create a storyboard and allow the export of synchronous cameras.

29. The ability to store the video export and still image export at a pre-defined storage location.

30. An interface with the ability to list, search, and manipulate previously generated video exports.

31. The ability to export sequences of video in open standards including ASF and MP4

32. Visual Tracking

   a. The Client Application shall support the ability to manually track a moving target with the single click of a button.

   b. The ability to switch from one camera view to an adjacent camera shall be done within a single display tile.

   c. Switching between camera streams shall be accomplished by simply clicking on a semi-transparent shape or overlay.

   d. Visual tracking shall be available with both live and recorded video.

D. WEB CLIENT

1. The VSS shall provide a desktop application and a web client interface for configuration, management, and/or viewing.

2. The web client shall be a truly thin client with no download required other than an internet web browser or standard web browser plugins.

3. The web client shall be platform independent and run within Microsoft Internet Explorer, Firefox, Safari, and Google Chrome.

4. Video Stream shall be redirected to the Web Client with no stream transformation or re-encoding for all streams in H264, H265, and Mpeg4 ISO.

5. The CONTRACTOR shall provide up to 10 number of simultaneous Web Clients.

6. Functionalities:

   a. Login using name and password or Active Directory support shall be available.

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    b.   Encrypted communications for all transactions.

    c.   Print reports and export to CSV file.

    d.   Video

        (1)   Live and playback video at 320 x 240, 640 x 480 or 1280 x 1024 @ 15 fps.

        (2)   Video export.

        (3)   1, 4, 6 or 9 tiles.

        (4)   Basic PTZ Controls (Pan/Tilt, Zoom, go to presets, start pattern).

        (5)   Start / Stop recording.

        (6)   Alarm report.

E.   MOVILE APPLICATION GENERAL REQUIREMENTS

    1.   The VSS shall support mobile apps for various off-the-shelf smartphones and tablets. The mobile apps shall communicate with the Mobile Server of the VSS over any WiFi or mobile network connection.

    2.   Mobile apps shall communicate with the VSS via a Mobile Server. Communication between the mobile device and the Mobile Server shall support optional encryption.

    3.   Supported manufacturers shall include:

        a.   Apple IOS devices.

        b.   Android based tablets and Smartphones.

        c.   Microsoft Windows based devices.

    4.   It shall be possible to download the mobile apps from the Central application store (Apple iTunes App Store, Google Play, Windows Store).

    5.   Functionalities:

        a.   Live monitoring and command and control of the VSS.

        b.   Receive alarm push notifications from the Apple Push Notification Server or from the Google Android push server.

        c.   Alarm management (view and acknowledge alarms, video tied to alarms).

        d.   View VSS hierarchy and search for entities.

        e.   Stream video from the mobile device using the built-in camera.

        f.   Video streams from mobile devices shall be available in the VSS to be viewed in live and recorded on the Archiver.

        g.   Video system shall provide the following:

            (1)   View live and playback video at 320 x 240, 640 x 480 or 1280 x 1024 @ 15 fps.

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(2)   Monitor camera status.

(3)   View up to 6 video feeds.

(4)   Control PTZ functionality of a camera, including access to PTZ presets.

(5)   Save snapshots locally on the device.

(6)   View video tied to access control events, and alarms.

F.   AUDIO SURVEILLANCER SYSTEM REQUIREMENTS

1. The Audio Surveillance System shall include the following:

a. Audio surveillance equipment shall consist of microphones, speaker/microphones, combiners, and call stations with alarming base station. An alarm will be announced during a cry for help, distress call, breaking glass, or sounds of vandalism.

b. System shall be able to listen-in to zone that is in alarm, talkback, and interrogate situation with 2-way communication.

c. System components shall be as follows:

d. Audio surveillance controller shall consist of a microprocessor-based monitor contained within a 19-inch standard rack panel 5-1/4 inches high. It will process input from microphones of condenser electret quality, phantom-powered with frequency characteristics of 20HZ through 15 KHz + 4, -5 db. Microphone zones will be listening constantly, and up to six microphones may be combined in one zone. In addition, standard cone speakers or re-entrant projector horns may be combined with the system to allow audio interrogation, as required, to zones for 2-way communication.

e. Provide zone cards with the following features and functions:

f. N/O or N/C dry contact outputs for activation of CCTV system, remote alarm device, or annunciator panel

g. LED zone alarm identification

h. Two-second audio alert tone to sound when a zone goes into alarm state.

i. Two continuously variable alarm threshold levels for amplitude of sound

j. Two user-selectable, frequency-sensitive filters to match user-frequency demand

k. Three-position selector switch for monitor/off/talk/back with spring return to off position

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l. Frequency and amplitude sensitivity adjustments shall be secured from unauthorized tampering by a panel door integral with unit, but accessible to operator from front panel.

m. Provide 19-inch rack panels with the following:

n. Front panel-mounted "ALLZONE RESET" button

o. Day/night threshold sensitivity switch with user-programmable 24-hour clock

p. Controller shall be sound activated monitor base station Louroe Electronics No. DG-25 III and listen/talkback amplifier companion, or equal.

q. Microphones:

r. Microphones shall be omni-directional on stainless steel cover for mounting to single-gang box.

s. Frequency response shall be 40 Hz to 15 KHz and supply voltage shall be 12 volt DC supplied from controller.

t. Microphone shall be Louroe Electronics Verifact D, or equal.

u. Microphone Mixer/Combiner:

v. Mixer/combiner shall add up to 6 microphones per zone with sensitivity controls for zone balance for microphones. Unit shall be Louroe Electronics No. MLA-6, or equal.

w. Frequency response: 100 Hz to 10 KHz

x. Input level: 3dB

y. Output level: 13 dB

z. Supply voltage: 12 volt DC

aa. Call station shall consist of stainless steel cover-plate with red "CALL FOR HELP" panic button, containing 3 KHz oscillator to trigger controller zone sensor. Unit shall be Louroe Electronics No. DCS, or equal, and flush-mounted to single-gang box. Output shall be 1.5 volts RMS into 10K ohm load at 3 KHz.

bb. Talk/listen 2-way security station shall consist of stainless steel cover-plate and red "CALL FOR HELP" button. Unit shall be Louroe Electronics No. TLMC, or equal, and flush-mounted to 8 inch x 6 inch x 4 inch backbox.

cc. Microphone frequency response: 40 Hz to 15 KHz

dd. Microphone supply voltage: 12V DC

ee. Microphone current drain: 3 MA

ff. Speaker frequency response: 150 Hz to 12KHz

gg. Speaker power handling: 2 watts

hh. Speaker voice coil impedance: 8 ohms

ii. Speaker input voltage: 70.7V

jj. Microphones and Call Stations Cable:

1. Cable Type B for, 2-conductor, 22 AWG (7" x 30") with 24 AWG (7" x 32") drain. West Penn No. 452, or equal.

kk. Mixer/combiners, 2-Way Call Stations and Speakers/Microphones cable:

1. Cable Type C, 4-conductor, 2 shielded 20 AWG (7" x 28"), 2 unshielded 18 AWG (7" x 26") with No. 22 AWG (7" x 30") drain wire. West Penn No. 356, or equal.

PART 3 - EXECUTION

3.01   DEPLOYMENT

A.   Deployment Management Service

1.   The Deployment Management service from the vendor shall include a Project Manager acting as the single point of contact for all communications between the CONTRACTOR and the vendor organization and who will be responsible for:

a.   Conducting a Risk Assessment of the impact of potential risk factors on the operation of the vendor's ISMS.

b.   Providing a project plan for the deployment of the vendor's ISMS.

c.   Managing the development and deployment of the custom solution components that will be integrated into the vendor's ISMS (if applicable).

d.   Providing a scope of work detailing the services to be provided by the vendor to assist in the deployment of the vendor's ISMS.

e.   Coordinating and scheduling the vendor field services with the CONTRACTOR to assist with the deployment of the vendor's ISMS.

    f. Providing regular project status updates to the CONTRACTOR regarding the development of custom solutions (if applicable) and the deployment of the vendor's ISMS.

   2. System Configuration and Commissioning Service. The System Configuration and Commissioning service from the vendor shall include a Field Engineer who will be responsible for:

    a. Assisting the CONTRACTOR's or subcontractor's onsite/remote technicians with the configuration and commissioning of the vendor's ISMS at the client site.

    b. Conducting a test of the ISMS following the deployment of the system using real-world operator scenarios to ensure optimal system performance.

    c. Providing the CONTRACTOR with a Service Report detailing the tasks completed during the deployment of the ISMS at the client site, as well as any recommendations for improving the performance of the ISMS that must be implemented by the CONTRACTOR.

    d. Providing a knowledge transfer of the vendor's ISMS to the CONTRACTOR following the deployment of the ISMS at the client site.

3.02 INSTALLATION

  A. The CONTRACTOR or subcontractors main resources within the project shall carry proper professional certification issued by the manufacturer and verified by a third party organization to confirm sufficient product and technology knowledge.

  B. The CONTRACTOR shall carefully follow instructions in documentation provided by the manufacturer to ensure all steps have been taken to provide a reliable, easy-to-operate system.

  C. All equipment shall be tested and configured in accordance with instructions provided by the manufacturer prior to installation.

  D. All firmware found in products shall be the latest and most up-to-date provided by the manufacturer, or of a version as specified by the integrator of the VSS system.

  E. All equipment requiring users to log on using a password shall be configured with user/site-specific password/passwords. No system/product default passwords shall be allowed.

  F. A proper installation shall meet NEC (National Electrical Code) per the guidelines of that year's revision. When properly installed equipment meets Low Voltage, Class 2 classification of the NEC.

3.03 AUDIO SURVEILLANCE SYSTEMS INSTALLATION

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A. Cable runs shall be continuous between devices. Connectors, fittings, terminations, splices, and passive devices shall not be installed in inaccessible locations. Provide connections only at outlets, junction boxes, and terminal cabinets and as indicated on Drawings.

B. Exterior junction boxes for conduit and cable runs shall be 6 inch x 6 inch x 4 inch weatherproof enclosures, Federal No. A6R44, or equal. Conduit entries to junction boxes shall be furnished with compression waterproof connectors.

C. Coaxial cable connectors shall be solderless type with nominal impedance of 75 ohms.

D. Cables entering and exiting terminal cabinets and junction boxes shall be tagged with plastic-coated cable markers wrapped around cable.

E. Cable connectors shall be installed with factory-recommended tools designed for connectors being installed.

F. Provided cables provided shall be new and of recent manufacture. Cables with abrasions, kinks, or other damage shall not be installed.

G. Wiring enclosures, terminal cabinets, outlets, control boxes, frames of cabinet racks and other enclosures shall be grounded.

H. Work shall conform to California Electrical Code regulations and applicable local ordinances.

3.04 NAMING CONVENTIONS

A. Cameras - All cameras shall be named in the NVR configurations using the following labeling scheme:

LOCATION CODE					CAMERA NUMBER				CHANNEL	
8	4	3	6	-	0	0	1	-	0	1

Example 1 → 8436-001-01 Camera No. 1   Channel 1

LOCATION CODE					CAMERA NUMBER				CHANNEL	
8	4	3	6	-	0	0	1	-	0	1

Example 2 → 8436-102-04 Camera No. 2   Channel 4

B. Weather proof labels showing the corresponding camera number shall be applied to each camera's housing.

3.05 TESTING

A. The VSS system shall be tested in accordance with the following:

1. Conduct a complete inspection and test of all installed access control and security monitoring equipment. This includes testing and verifying connection to equipment of other divisions such as intrusion detection and access control systems.

2. Provide staff to test all devices and all operational features of the Security Management System for witness by the Owner's representative and authorities having jurisdiction as applicable.

3. Correct deficiencies until satisfactory results are obtained.

B. Submit written copies of test results.
    Complete Checklist for Security VSS provided in Appendix A.

3.06   PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.07   OWNER ORIENTATION (TRAINING)

A. Before contract closeout provide the following training and orientation:

1. Provide a minimum 48 hours training for LAUSD designated representatives. The content of the training is advanced instruction on the use, programming, maintenance and troubleshooting of the video surveillance system, devices and components.

    a. Materials shall include training manuals and hands-on lab exercises.

    b. The training shall be provided at the equipment manufacturer's authorized training facility located in Los Angeles County.

    c. Training shall consist of classroom instruction including intensive course work covering the following topics:

        (1) Product Features and Technical Specifications

        (2) Implementation and Design as–built documentation, including familiarization with drawing sets, symbols and notation as well as other record documents.

        (3) Complete understanding of the system architecture and design of implemented solution.

        (4) Complete function and feature analysis on implemented solution including programming, operation, trouble shooting, error messages, etc.

3.08   CLEANUP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

APPENDIX A

<u>Checklist for Security CCTV</u>

The following criteria must be met before ITD will accept this system for maintenance.

CCTV Installation Check List	Y	N	Initials
Is all equipment installed as specified?	☐	☐	
Monitors (For campus CCTV, verify its location is a secured)	☐	☐	
NVR Image Server (For campus CCTV, recording is limited to 30 days max)	☐	☐	
Video/Matrix Controllers Make_____ Model_____	☐	☐	
Cameras	☐	☐	
Verify cameras are not viewing area off campus, aimed towards rest room entrances, or any other areas with an expectation of privacy)	☐	☐	
Camera housings and brackets for inside and outside applications	☐	☐	
Rack and terminal cabinets/ cable and connectors	☐	☐	
Does installation follow industry standards and specifications? Does installation comply with LAUSD Video Surveillance Policy?	☐	☐	
Are all cable terminations in terminal cabinets labeled properly?	☐	☐	
Are cables marked clearly and indelibly marked?	☐	☐	
Does cable number match with posted list?	☐	☐	
Are all outdoor cameras protected from direct sunlight?	☐	☐	
Are charts posted at console and terminal cabinets?	☐	☐	
Is cabling in terminal cabinets and console loomed and helically wrapped?	☐	☐	
Is there other media cabling sharing the conduit? Have the proper connectors and crimpers been used?	☐	☐	
Are cameras which are out of reach of ladders and require a lift for maintenance, located where a lift can easily be placed underneath?	☐	☐	
Circle One: Cameras use data network (IP-based, VLAN 4), or use separate, isolated fiber and/or Cat 5E/6 cabling.	☐	☐	
Explicit approval documentation provided for any Wireless Cameras	☐	☐	
If wireless cameras are used, list approved Security features _____			
Are terminal cabinets and cross-connects installed indoors? Are ground connections to specification?	☐	☐	
Have zones coverage been identified? Is each camera's coverage as specified?	☐	☐	
# of pan/tilt/zoom cameras: _____ # of fixed cameras: _____			
Can 16 cameras output be displayed individually, quad format, 9 split screen, 10 split screen and all at once.	☐	☐	
Is image and color display on playback and real time clear?	☐	☐	

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Functionality Check List	Pass	Fail	Initials
Can camera controls be adjusted manually and remotely?	☐	☐	
Pan/Tilt/Zoom Operation. Has a joystick for pan/tilt/zoom been provided?	☐	☐	
List make and model of PTZ cameras: Make/Model_____	☐	☐	
List make and model of fixed cameras: Make/Model_____	☐	☐	
Iris control and focus	☐	☐	
Test recording modes	☐	☐	
- Motion activated	☐	☐	
- Time activated	☐	☐	
- Continuous recording	☐	☐	
- Alarm activated	☐	☐	
- Pre-alarm and Post-alarm recording	☐	☐	
Is recording storage capacity as specified?	☐	☐	
Is recording storage configured for RAID V?	☐	☐	
Does the system resume operations after a power outage? (With no operator assistance)	☐	☐	
Does the system provide notice of an alarm by visual notification, callback, pager, or e-mail to designated operator without interrupting the recording process?	☐	☐	
Does the system provide an alarm history buffer as specified? (1000 incidents)	☐	☐	

Audio Surveillane Check List	**Pass**	**Fail**
Functionality Check List	**Pass**	**Fail**
Test audio surveillance.	☐	☐
Does the alarm annunciation provide 2-way communication?	☐	☐
Does an alarm provide zone identification?	☐	☐
Does an alarm provide an alert annunciation tone?	☐	☐
Is the 2-way communication clear?	☐	☐
Does the 3-position call switch work as specified?	☐	☐

All above criteria has been verified: (*check all that apply*)

Type of CCTV System:
Front Door/Main Office Intercom-CCTV ☐   *Staff Parking Lot CCTV* ☐   *Campus CCTV* ☐

Location/address [   ]

School Principal _____   _____   _____
                        (Print Name)   Signature

                                                                                        Date

OWNER/Project Manager _____   _____   _____
                              (Print Name)   Signature

                                                                                        Date

ITD QA Representative _____   _____   _____
                             (Print Name)   Signature

                                                                                        Date

ITD Quality Assurance _____   _____   _____
Deputy Director   (Print Name)   Signature   Date

School Accepted?   Yes_____   No_____   Date _____

Los Angeles Unified School District

INVOICE

Maintenance & Operations

333 S. Beaudry Ave., 22nd Floor

Los Angeles, CA 90017

Phone 213-241-1198

INVOICE #	DATE
ITD_Security Camera	**7/25/2023**

COMPLEX PROJECT MANAGER	PREPARED BY
Maria Thorpe	**Carmen De Paz**

BILL TO

SITE	TERMS
Orchard Academies (5154)	Due Upon Receipt

Magnolia Science Academy Bell (5166)

6411 Orchard Ave

Bell, CA 90201

Attn:

Cafer Turan/Controller cturan@magnoliapublicschools.org

Steve Budhraja/CFO sbudhraja@magnoliapublicschools.org

Lesia Nwankwo lnwankwo@magnoliapublicschools.org

Make all checks payable to:

Los Angeles Unified School District and send to:

LAUSD Maintenance & Operations,

Attn: Christine Esto

333 S. Beaudry Ave., 22nd Floor

Los Angeles, CA 90017

DESCRIPTION		Total
LAUSD _ITD to perform installation of security cameras		
Equipment	$	21,993.67
DQAB Installation, Configuration, and Training Services	$	18,720.00
CSIB Infrustruture and Camera Mounting Labor	$	46,200.00

Thank you for your business!	GRAND TOTAL	$	86,913.67

Documentation Reviewed

7/25/2023

Maria Thorpe — Date

Complex Project Manager

For any follow up questions, please contact Maria Thorpe at 1-213-503-5437

Magnolia Charter on Orchard Academy (????)

Site: **6411 ORCHARD AVE, BELL, CA 90201**

Part Number	Product Description	Manufacture	MSRP (USD)	Discount	Price (USD)	Quantity	Extended	Taxable	Contract Section
SVW-304E-SF1S1000-I7	Streamvault™ 304E Series - 1-Bay SFF Workstation 1x NVIDIA Quadro 1000 Series GPU 1x Core i7-11700 16GB 1x 256GB M.2 SSD 1x 1TB SATA 1x 1GbE RJ45 1x 300W PSU Windows 10 Embedded 5YR NBD KYHD Warranty - Genetec™ Security Center pre-installed.	Genetec	$ 3,410.00	23%	$ 2,625.70	1	$ 2,625.70	Y	II-A
SV-2020E-R4-24T-8-236	Streamvault™ 2020E Series - 1U 4-Bay Appliance 24TB Raw RAID 5 1x Xeon E-2236 16GB RAM 2x 240GB M.2 SSD 3x 8TB NLSAS 2x 1GbE RJ45 2x 350W PSU Windows Server 2019 Standard 5YR NBD KYHD Warranty - Genetec™ Security Center pre-installed. License sold separately.	Genetec	$10,600.00	23%	$ 8,162.00	1	$ 8,162.00	Y	II-A
SV-E-ACC-SRV-IDRAC-ENT-14G	IDRAC ENTERPRISE LICENSE 14G SERVERS	Genetec	$340.00	23%	$ 261.80	1	$ 261.80	Y	II-A
GSC-Om-E-1C	1 camera connection	Genetec	$ 250.00	23%	$ 192.50	6	$ 1,155.00	N	II-C
ADV-CAM-E-5Y	GENETEC, Advantage for 1 Omnicast Pro Camera - 5 years	Genetec	$ 144.00	23%	$ 110.88	6	$ 665.28	N	II-C
02060-001	AXIS P3818-PVE 4 Element 180	Axis	$ 1,349.00	24%	$ 1,024.97	2	$ 2,049.94	Y	II-A
01500-001	AXIS 4 ELEMENT 270/360 P3719-PLE	Axis	$ 1,599.00	24%	$ 1,214.92	2	$ 2,429.84	Y	II-A
02415-001	AXIS P4705-PLVE 2x2 dual sensor multidirectional camera with 360° IR	Axis	$ 899.00	24%	$ 683.06	2	$ 1,366.12	Y	II-A
TAX			9.50%				$ 1,777.99		
MISC	Network Upgrades, Monitor and Shipping Allowance						$ 1,500.00		
						Sub-Tot H	$ 21,993.67		
	DQAB Installation, Configuration, and Training Services						$ 18,720.00		
	CSIB Infrustruture and Camera Mounting Labor						$ 46,200.00		
						Total Estimate	$ 86,913.67		

☐ YES. Please proceed with the Job

USE THE FUNDING:

SAP Fund	Requesting Cost Center	Functional Area	WBS Element (Level 4)
		.	.

Area Fiscal Specialist Name: _____

Telephone Number: _____

☐ NO. Please do not proceed with the Job

NAME   _____

TITLE   _____

SIGNATURE   _____   Date: _____