ATTENTION: This is not an order. Read all instructions, terms and conditions carefully.

IMPORTANT: BID AND ADDENDUM MUST BE RECEIVED BY 07/25/2019 @ 3:00 P.M. LEXINGTON, KY TIME

Bidder must acknowledge receipt of this and any addendum as stated in the Invitation for Bids.

1. Please modify Addendum 1 as follows:

   Please refer to and incorporate within the Offer the attached Addendum Number One from Omni Architects, pages 1 thru 65, Improve Student Center Space 1 - Harris Ballroom, Project #2505.0, and RFP #UK-1921-19 dated July 2019.

2. Also, add the following written question and Response:

   Question: Drawing ESS1.0 appears to require new access control and camera equipment. There weren’t any specifications for them, that I found. Please clarify and/or provide specs.

   Response: Refer to the attached ADDENDUM NUMBER TWO from Omni Architects, pages 1 thru 19, dated July 2019.
ADDENDUM NUMBER TWO

Bidders shall conform to the following changes, as same shall become binding to the Bid Documents for the purpose of bidding.

CORRECTIONS AND CLARIFICATIONS:

1. Refer to new Specifications Section 281643 “Perimeter Security Safety”: See attached new section 281643.
2. Refer to new Specifications Section 282300 “Video Surveillance”: See attached new section 282300

End of Addendum #2 Refer to attachments.
SECTION 281643 - PERIMETER SECURITY SAFETY

PART 1 - GENERAL

1.1 SCOPE
A. This section details product and execution requirements for Security Management System (SMS) for the project.
B. Work includes furnishing all labor, materials, tools and equipment, and documentation required for a complete turnkey working system as specified in this Section. SMS shall consist of but not be limited to Door Controllers, Card Readers, Sensors, Switches, Conduit, Boxes, Cable and Wired Devices. Programming and cardholder enrolling are also considered as part of installation as well as coordination with UKPD.
C. Unless noted otherwise, “Contractor” shall refer to SMS Integrator & Installer.

Communications routing from SMS to door controllers shall be via Owner LAN.

1.2 RELATED WORK
A. Related Sections in other divisions of Work:
   087100 - DOOR HARDWARE
   260000 - ELECTRIC
   270000 - COMMUNICATIONS

1.3 REFERENCES AND STANDARDS
A. Work under this Section is subject to requirements of Division 1 General Requirements.
B. Other applicable standards are as follows:
   UL 294 - Access Control System Units.
   UL 1076 - Proprietary Burglar Alarm Units and Systems.
   FCC Rules and Regulations Part 15, Radio Frequency Devices
C. All work and materials shall conform in every detail to rules and requirements of National Fire Protection Association, Kentucky Electrical Code, University of Kentucky Standards and University of Kentucky ITS Standards. UKITS standards can be found online at the following link: https://www.uky.edu/cpmd/design-standards/divisions-20---29---facility-services-subgroup and click on Division 270000 to find the latest version.
D. All materials shall be listed by UL and shall bear UL label. If UL has no published standards for a particular item, then other national independent testing standards shall apply and such items shall bear those labels. Where UL has, an applicable system listing and label entire system shall be so labeled.

1.4 DEFINITIONS AND ABBREVIATIONS
A. SMS – Security Management System

1.5 WORK BY OWNER
A. Owner shall:
   Provide list of cardholders for initial SMS programming by Contractor.
   Provide scheduling of each door, including:
   a. Alarm activations and distribution.
   b. Door lock and unlock.
c. Cardholder validation by day and time.
d. Delay time of door open alarm.
e. Duration of lock activation upon credential authorization.

1.6 SUBMITTALS
A. Product Data: For each type of product indicated.
B. System Design drawings with cable routing, device location and labeling.
C. Operation statements for all SMS doors.
D. Communication Closet layout drawings.
E. Certifications for BICSI as required by UKITS per Division 27.
F. Owner Operation Manuals for all installed equipment as well as documentation of all programming.
G. As built drawings showing cable pathways and routing. As built drawings to also show any changes made to original ESS drawings.

1.7 QUALITY ASSURANCE
A. Security Management System Contractor shall:
   Have successfully completed two (2) Security Systems projects in equal magnitude of the system specified in following sections. Contractor shall be a Lenel Authorized VAR in good standing. Proper proof of certifications will be submitted at time of Bid. Be responsible for complete turnkey system up to but not including SMS programming, programming cost will be included in BID with programming work being done by UKPD’s Lenel VAR of Record. Be responsible to coordinate with UKPD’s Lenel VAR of Record to complete system installation. Comply with all certification requirements set out in Division 27 as it related to the installation of DATA cabling. Specifically, contractor will comply with the requirement of all DATA cabling being installed by BICSI certified installers and installation supervised by a registered in good standing RCDD in the full-time employee of the project contractor.

1.8 GUARANTEE
A. Warranty requirements for Security Management System (SMS) shall be two (2) years on all parts and labor commencing on Date of Substantial Completion. Those requirements apply to all components covered in this section.

PART 2 - PRODUCTS

2.1 GENERAL
A. Security Management System shall provide ability to:
   Unlock electrified door locks upon authentication of submitted credential to local card readers.
   Monitor door alarms and remotely unlock.
   Lock doors on an automated schedule from central system.
   Unlock doors as required by code via fire alarm relays.
   Annunciate intrusion alarms from remote sensors.
   Unlock individual doors manually via operator interface.
   Lock doors from central Operations Center.

B. System must support the Campus Central One Card ID Badge.
2.2 NETWORK SMS
   A. Manufacturer: Lenel Security Systems

2.3 SYSTEM CONTROLLER
   A. Manufacturer: Mercury Systems LNL-2220. Controllers will include all power supplies, Life Safety FPO250 or Mercury Systems approved equal and Battery Back Up Units. All parts and pieces needed for a complete UL listed working turnkey system. All Lenel Licensing required for UK Campus Enterprise System shall be included Contractors Bid.

2.4 MULTI-DOOR DOOR CONTROLLER
   A. Manufacturer: Mercury Systems LNL-1320.
      Controller shall accommodate minimum two card readers and associated inputs/outputs.

2.5 MULTI-INPUT / OUTPUT CONTROLLER
   A. Manufacturer: Mercury Systems LNL-1100 / LNL-1200.
      Controller shall accommodate 16 programmable inputs; 2 programmable relay outputs

2.6 PROXIMITY CARD READERS
   A. Manufacturer: HID.
      Wall-mount: Model RP40 (6125C) iClass Standard Reader.
      Mullion-mount Reader RP15 (6145C) multiCLASS.
   B. General
      Reader(s) shall:
      a. Be furnished in Wiegand output model and shall be sealed in a polycarbonate enclosure designed to withstand harsh environments.
      b. Unless otherwise specified, reader covers shall be furnished in “black” color – Classic design.
      c. Recognize 125 kHz and iClass 13.56 MHz signals
      d. Contain an indicator to indicate valid and invalid card
      e. Be designed for ambient operating environment.
      f. Be powered remotely using centralized power supplies.
      g. Read iClass Corporate 1000 sector information
      h. Include Near Field / Bluetooth capabilities.

2.7 DOOR CONTACTS (DPS / Monitor Points when not included in Door Hardware)
   Steel Door contacts.
   Manufacturers: GE Interlogix 1078 Series or approved equal.

2.8 REQUEST-TO-EXIT MOTIONS SENSORS (When not included in Door Hardware)
   Manufacturers: GE, Honeywell, or approved equivalent.
   1. Provide door header mounted request to exit motion sensors as indicated on Drawings.
   2. Minimum Specifications
a. Detection technology Passive infrared  
b. Detection pattern Narrow beam 35-degree cone  
c. Output contact normally open contact is closed when sensing zone is entered or exited  
d. Power requirements 12 – 24 VDC  
e. Mounting: Door header

2.9 POWER SUPPLIES

A. As required to support Card Reader(s), Door Controller(s), Strike(s), Sensor(s), Eye Scanners and other components for fully operational turnkey system. Each component connected to power supplies shall be independently fused with rated fuses to match the manufacturer requirements for each specific device. Power supply cabinets shall have door locks included and keys shall be turned over to UKPD at substantial completion.

B. Electrified Door hardware power supplies shall be specified by Division 8. Each component connected to power supplies shall be independently fused with rated fuses to match the manufacturer requirements for each specific device.

2.10 CABLING

A. General

Cable shall be:

a. Plenum Rated.

B. Reader Cable

Construction:

a. 18 AWG stranded or as recommended by system manufacturer.  
b. Aluminum/Mylar shield with drain wire applied over assembled conductors.

C. Door Lock Power Cable

Provide and install as required for door hardware. Refer to Architectural Door Schedule and Door Hardware documents.

D. Door Contact / Signal Cable

Door Contact/Signal Cable used for monitoring purposes.  
Construction:

a. 22 AWG twisted, stranded or as recommended by system manufacturer.  
b. Aluminum/Mylar shield with drain wire applied over assembled conductors.

E. Request-to-Exit Motion Detector Signal Cable

Motion Detector Signal Cable used for monitoring purposes.  
Construction:

a. 20 AWG stranded or as recommended by system manufacturer.  
b. Aluminum/Mylar shield with drain wire applied over assembled conductors.

F. Door Controller Cable

Provide all LAN patch cables, jacks, and faceplates.
PART 3 - EXECUTION

3.1 PRE-INSTALLATION COORDINATION

A. Coordinate with Electrical Contractor (Division 260000) that:
   - Section 280000 provided pathways and equipment back boxes are completed and are coordinated with no conflicts for system installation.
   - Adequate power has been provided and properly located for security system equipment.
   - Code-complying fire alarm relays will be installed for cable termination. Fire Alarm contractor will provide relay contacts in Com Closet for connection to Access control panels. Contractor is responsible for coordination with Fire Alarm Contractor. Access control Contractor shall provide all parts and pieces including all cabling from Access control panel to Fire Alarm Contact point. Coordinate scheduling of work to make sure there are no conflicts.

B. Coordinate with Door Frame supplier (Division 8):
   - Doors and door frames are properly prepared for electric locking hardware and door position switches are furnished by door type.
   - Locations of all devices prior to installation.
   - Electric door power supply locations and connections requirements.

C. Coordinate with the Communications Contractor (Division 27):
   - Locations of all LAN-connected devices with no conflicts.
   - Coordinate scheduling of work.

D. At a minimum, coordinate the following with Owner:
   - VLAN/or network partitioning for SMS system.
   - Owner-provided IP addresses for SMS devices.
   - Network infrastructure requirements at SMS head-end Next Level Gateway-6100UK.
   - Initial database programming.
   - Planned system downtime.
   - Programming and training for new system.

E. Coordinate with Construction Manager as required providing a fully functioning turnkey Security system.

F. Coordinate with all trades on the operation and installation of ADA entrance doors with relation to Long Range Card Readers and interconnection with door actuator plates, motor units, Fire Alarm and Smoke Evacuation System. Contractor will supply any and all associated timer boards or additional parts required for complete operating doors system.

G. Coordination Meetings shall be scheduled and conducted beginning within 60 days of contract award and continuing till project conclusion inclusive with the A/E team and Commissioning Agent.

3.2 INSTALLATION

A. General
   - Verify acceptance of each type of specified request-to-exit hardware for each application with local life safety code officials.
   - Provide tamper proof fasteners for all equipment in public areas. Fastener finish shall match equipment finish.
Maintain minimum three feet of access in front of class 1 electrical equipment.

B. Delivery, Storage, and Handling

Deliver products to and receive products at site under provisions of General Requirements.
Materials shall be stored according to manufacturer's recommendations at minimum.

C. Equipment

Provide equipment as indicated on Drawings and specified herein. Additional specific installation requirements are as follows:

Door Controllers
a. Provide Door Controllers in Data Closets as shown on Drawings.
b. Provide connection to 120 VAC via hardwire conduit. Coordination with Division 260000.
c. Separate 24 VDC and 120 VAC, wire, cable, and devices by 12” minimum space.
d. Enclose wire and cable in wire ways or bundle with wire exiting wire ways to terminal strips or panel mounted devices.
e. Space controllers according to manufacturer’s requirements. Ensure adequate space is allowed for device heat dissipation.
f. Do not place controller or control devices on enclosure sides.

Card Readers
g. Provide card readers and card reader devices as shown on Drawings.
h. Wire card reader LEDs to indicate valid and invalid card reads, and door locked and unlocked conditions. All card reader LED indicators shall operate identically throughout Project. LED shall be red in normal, secured state, and shall be green on valid card read and while door is unlocked.

Electric Locking Mechanics
i. Interface with electric locking mechanics as required by the door hardware.
j. Provide lock control of electrified locking mechanics through output contacts activated by Door Controller.

Electrified Panic Devices

k. Interface with electrified panic devices as indicated on Drawings. Provide all low-voltage wire and connections between SMS power transfer device and electric locking mechanics.
l. Provide lock control of electrified panic devices through output contacts activated by Door Controller.
m. Provide all 120VAC if required for Device operation per hardware specifications. Provide connection to Fire Alarm connection points as required by Code. Fire Alarm Contractor to provide relay contacts in Com closets for this purpose. Contractor is responsible for all parts and pieces including cable from Access control panel to the Fire Alarm relay contract. Contractor is responsible for coordination with Fire Alarm contractor.

Door Position Switches

n. Install as shown on drawings.
o. Coordinate pathways.

Request-to-Exit Motion Sensors
p. Provide as shown on drawings.
q. Coordinate pathways.

Fire Alarm Interface
r. Connect (hard wire) door controller to building fire alarm system for fail-safe release upon any fire alarm.
s. Interface with low voltage / low current normally closed dry contact from fire alarm system provided by fire alarm Contractor (verify exact location in Data Closet for connection with FA). Contact shall open on any fire alarm condition.
t. Provide all additional UL listed fail-safe relays and power supplies necessary to interface to this contact and unlock all fail-secure doors.
u. Coordination Meetings with Fire Alarm Contractor shall be scheduled and conducted beginning within 60 days of contract award and continuing till project conclusion inclusive with the A/E team and Commissioning Agent.

Cable Installation
v. Visually inspect all wire and cable for faulty insulation prior to installation.
w. Furnish and install all specified wire and cable as required for functioning SMS system.
x. Neatly lace, dress and support cabling.
y. Pull cables in accordance with cable manufacturer’s recommendations University of Kentucky ITS and ANSI/EEE C2 Standards.
   1) Do not exceed manufacturer’s recommended pulling tensions.
   2) Do not install bruised, kinked, scored, deformed, or abraded cable.
   3) Do not splice cable between indicated termination, tap, or junction points.
   4) Remove and discard cable where damaged during installation and replace it with new cable.
   5) Pull all cable by hand unless installation conditions require mechanical assistance.
z. Run all wire and cable continuous from device location to final point of termination. No mid-run cable splices shall be allowed.
   aa. Cables shall not be attached to existing cabling, plumbing or steam piping, ductwork, ceiling supports, or electrical or communications conduit.
   bb. Cable shall never be laid directly on a ceiling grid or attached in any manner to ceiling grid wires.
   cc. Furnish and install all cable such that ample slack is supplied at device terminating end of cable to compensate for any final field modifications at install locations.
      1) Loosely coil slack in “Figure-eight” in a manner that prevents kinking.
      2) Loop radius shall be at least 4X minimum bend radius for cable.
      3) Slack length of cable shall be 4 feet (minimum).
   dd. Provide code-compliant fire proofing techniques for all penetrations of fire rated partitions and slabs, where penetrations are made by or used for installation of SMS System.
   ee. Coordinate routing of wire and cable requiring isolation from power, radio frequency (RF), electromagnetic interference (EMI), telephone, etc. with General Contractor.
   ff. At no time, shall any cable be subjected to a bend less than manufacturer’s specified minimum radius and UK ITS Standards.
   gg. Provide grommets and strain relief material where necessary to avoid abrasion of wire and excess tension on Wire and Cable.
hh. Make connections with solder-less devices, mechanically and electrically secured in accordance with manufacturers’ recommendations. Wire nuts shall not be an acceptable means of connecting wire and cable.

ii. Utilize conduit and cable trays and or pathways to route SMS cables from each door or device to Door Controller. Follow University of Kentucky ITS standards for low voltage cabling.

jj. No A/C current-carrying conductors are allowed in same pathway as signal or low-voltage power cables.

kk. Wire and cable within Door Controllers, enclosures and or other security enclosures shall be neatly installed, completely terminated, pulled tight with slack removed and routed in such a way as to allow direct, unimpeded access to equipment within enclosure. All wire and cable shall be bundled and tied. Ties shall be similar to T&B TyRap cable ties.

ll. Use of electrical tape for splices and connections shall not be acceptable.

mm. Make connections with solder less devices, mechanically and electrically secured in accordance with manufacturers’ recommendations. Wire nuts shall not be an acceptable means of connecting wire and cable.

nn. All system cabling within vertical risers (as required) shall be bundled, wrapped and tied to structure at three-meter intervals in order to isolate it from other wire and cable within riser. Additionally, all wire and cable within shaft shall be supported at least every two floors using Greenlee Slack Grips (Split Mesh Lace Closing) or approved equal. Provide all personnel and equipment necessary to install and support cable. All equipment shall be UL listed for application.

D. System Programming and Data Entry

Collect all data required to make the Security Management System operational. Deliver data to Owner on data entry forms, utilizing data from Contract Documents, Contractor’s field surveys and all or pertinent information in Contractor’s possession required for complete installation database. Identify and request from Owner any additional data needed to make SMS System fully operational and integrated. Completed forms shall be delivered to Owner for review and approval at least 30 days prior to Contractor’s scheduled needed date. Contractor will coordinate with University of Kentucky Police Department Campus Security System Lenel VAR of Record (Stanley Security) for database and Campus Cloud Services programming and Integration. Contractor shall provide Door Counts, Panel Counts and locations, Reader Counts and input, output counts. Contractor shall also supply any special devices or operations that may require special programing. Examples would be Elevators, Biometric readers and others. Contractor shall request a quote for this programing work, two (2) Client Workstation Licenses and any other Lenel Licenses required from Stanley Security. Stanley Security Group Contact person is Vicky Daugherty (912-246-9466) Vicky.Daugherty@sbdinc.com. This and any fees associated with the Lenel programing shall be included in Contractor’s Bid. Contractors Bid shall be for a complete turn key total functional system. Contractor shall provide time in Bid to coordinate and participate with Stanley Security during their testing and programing.

Provide all initial system information for SMS setup including, but not limited to following:

a. SMS Card Reader Information

1) Coordinate all card reader values and text, including descriptors, alarm messages, map call up and identification with Owner.
b. Input and output points for SMS. Coordinate all input and output priorities and text, including descriptors, alarm messages, Video Camera call up, and map call up and identification with Engineer.

c. Initial system users, including levels of access. This shall include designation of Owner’s representative at "Super User" level immediately upon SMS initialization.

d. Provide Elevator access per cardholder by cab and floor.

E. Furnish and install all SMS wire and cable including LAN cabling.

F. Provide code-compliant fire proofing techniques for all penetrations of fire rated partitions and slabs, where penetrations are made by or used for installation of SMS.

G. 120 VAC power dedicated to security system shall be on provided Emergency Generator Power. Gateways shall be on properly sized UPS units on Emergency Generator backup circuits. UPS units are provided by UKITS. Contractor shall coordinate with UKITS to provide power requirements for all equipment. A meeting with UKITS to coordinate this and other IT related issues will be scheduled within 60 days of Contract award and be inclusive of A/E Team, UKITS and Commissioning Agent.

H. Connect to AC power with provided UL listed power supplies and transformers to distribute low voltage power to system components as required.

I. Provide hinged cover UL listed terminal cabinets with tamper switches for all power supplies, transformers and power distribution terminal strips. Provide all conduit and wiring from AC power facilities to terminal cabinets.

J. Provide protection against spikes, surges, noise, and or line problems for all system equipment and components.

K. Provide protection on all exterior, control, power, signal cables and conductors against power surges. Each surge protector shall be UL Listed.

L. In no instance, shall any UL labeled door or frame be drilled, cut, penetrated, or modified in any way.

M. Contractor shall be responsible for replacing any labeled door or frame that is modified without written approval from project Engineer.

N. Label all controls as necessary to agree with their function.

O. Label all Wire and Cable in common at both ends using a permanent method such as self-laminating cable marking tape.

   Tags shall be attached to wire and cable nylon cable ties in an accessible location so that they can easily be read.

   Tags shall be installed when wire and cables are installed.

   Labeling shall be consistent with existing cable labeling system and agree with Record Documentation.

P. Place wire identification numbers at each end of conductor involved by using sleeve type, heat shrinkable markers. Markers shall be installed so as to be readable from left to right or top to bottom.

Q. Mark all connectors with common designations for mating connectors. Connector designations shall be indicated on record drawings.

R. Coil all spare conductors in device back box, panel wire way, or top of panel where wire way is not provided. Conductors shall be neatly bundled and tagged.
S. Install integrated security and communication system in accordance with manufacturer's instructions at locations indicated on the Drawings.

T. Mount equipment plumb, level, square, and secure. For video entrance stations and video door stations, comply with manufacturer's design requirements to provide optimum picture quality of station monitoring.

3.3 DEMONSTRATION AND TRAINING

A. Coordinate with Owner and UKPD to establish required training.

B. Contractor shall be on call during Warranty period to answer any questions Owner might have. The Owner reserves the right to use any excess training hours, not used by time of system completion, for future training as requested by Owner until total number of training hours has been used.

C. Demonstration:

Demonstrate that integrated security and communication system functions properly. Perform demonstration at final system inspection by qualified representative of manufacturer working with UK Lenel VAR of Record.

3.4 SYSTEM START-UP

A. Start-up includes all Contractor-Furnished, Contractor-Installed (CFCI) systems and equipment.

B. Work shall be complete and ready to operate prior to final acceptance.

C. All database programming for systems up to inaugural day of beneficial use of Security System shall be coordinated thru UKPD and UK Lenel VAR of Record.

D. Adjust integrated security and communication system for proper operation in accordance with manufacturer's instructions.

3.5 SYSTEM ACCEPTANCE

A. Final acceptance testing of Work will be coordinated and observed by owner representatives and UKPD in coordination with Stanley Security Solutions.

B. Prior to testing, Contractor shall submit two sets of preliminary (draft) Record Drawings to owner and UKPD. Preliminary Record Drawings are to be used by owner and UKPD to conduct system final test.

C. At completion of Work, remove all waste materials, rubbish, Contractor’s and subcontractors’ tools, construction equipment, machinery and all surplus materials.

3.6 PROTECTION

A. Protect installed integrated security and communication system from damage during construction.

END OF PERIMETER SECURITY SAFETY
SECTION 282300 - VIDEO SURVEILLANCE

PART 1 - GENERAL

1.1 SCOPE

This section details product and execution requirements for VIDEO MANAGEMENT SYSTEM for the project.

Work includes furnishing all labor, materials, tools and equipment, and documentation required for a complete turnkey working system as specified in this Section. VMS shall consist of but not be limited to, Cameras, Monitors, Conduit, Boxes, Cable and Wired Devices. Programming work sheets and camera view setup is considered part of installation as well as coordination with UKPD, Stanley Security and Salient Systems.

Unless noted otherwise, "Contractor" shall refer to VMS Integrator & Installer.

Communications routing from VMS Servers to Cameras shall be via Owner LAN.

Coordinate with any and all trade contractors as required to provide a fully functioning system.

Unless noted otherwise, "Contractor" shall refer to security system integrator & installer.

Applicable provisions of Division 1 shall govern all work under this section.

Video surveillance can be restricted or prohibited by law. This document details technical considerations only. It is assumed that registration, licensing, policies regarding disclosure and privacy (notification, processing of images, time and date stamping, recording of sound, etc.), and or legal obligations are responsibility of Owner.

1.2 RELATED WORK

Related Division 28 Sections include:

1. 281643 - PERIMETER SECURITY SAFETY

Related Sections in other divisions of Work:

2. 087100 - DOOR HARDWARE
3. 260000 - ELECTRIC
4. 270000 - COMMUNICATIONS

1.3 REFERENCES AND STANDARDS

Work under this Section is subject to requirements of Contract Documents including General Conditions, Supplementary Conditions, and sections under Division 1 General Requirements.

All work and materials shall conform in every detail to rules and requirements of National Fire Protection Association, Kentucky Electrical Code, University of Kentucky Standards and University of Kentucky ITS Standards. UKITS standards can be found online at the following link: https://www.uky.edu/cpmd/design-standards/divisions-20---29---facility-services-subgroup and click on Division 270000 to find the latest version.

All materials shall be listed by UL and shall bear UL label. If UL has no published standards for a particular item, then other national independent testing standards shall apply and such items shall bear those labels. Where UL has an applicable system listing and label entire system shall be so labeled.

Other applicable standards are as follows:

2. NFPA 70-1999 - National Electrical Code
4. NTSC/EIA RS-170A Video Standard
5. IEEE 802.3 standards for CSMA/CD (Ethernet) based LANs
7. CE: EN50082-01 (Immunity)
8. CE, UL 1950; CUL 1950 CE: EN60950 (Safety)
9. State of Kentucky
10. City of Lexington, KY

1.4 DEFINITIONS AND ABBREVIATIONS

VMS – Video Management System
LAN – Local Area Network

1.5 WORK BY OWNER

Owner shall provide:
1. Verify exact security device mounting locations.
2. Verify Acceptable per-camera field-of-view information.
3. Enterprise-wide Data Network / LAN to be utilized by VMS system.
4. Cross-connections from VMS components to building LAN, contractor provides all interconnection cables (Patch Cables) as needed but may not connect to LAN without ITS oversight and approval.
5. All active LAN components (switches, routers) as required for Security system function.
6. IP-address allotment and management for VMS devices as needed.

1.6 SUBMITTALS

Product Data: For each type of product indicated.
System Design drawings with cable routing, device location and labeling.
Communication and Security Closet layouts.
Camera View Modeling.

1.7 QUALITY ASSURANCE

Video Management System Contractor shall:
1. Have successfully completed two (2) Salient Systems projects in equal magnitude of the system specified in following sections. Be fully certified by Salient Systems for Sales and Installation of Salient equipment. Proper proof of certification with Salient will be submitted at time of Bid.

1.8 GUARANTEE

Warranty requirements for Video Management System (VMS) shall be two (2) years on all parts and labor commencing on Date of Substantial Completion. Those requirements apply to all components covered in this section.
PART 2 - PRODUCTS

2.1 GENERAL

VMS system shall deliver high quality; color video over an IP, UTP structured cable system using H.264 /H.265 compression and shall provide for monitoring and recording of all cameras in system as indicated herein and on project Drawings. The VMS allows event-based monitoring of campus and situational awareness though IP cameras centrally managed from the University of Kentucky Police Department Operations Center. The VMS utilizes analytics to identify potential situations on campus and preserving evidence for authorities to review. The Salient VMS has the capability to be securely monitored via mobile devices or off-campus locations, video sharing with outside public safety first responders.

Video shall be configurable from a workstation on the University LAN using standard Browser software.

2.2 IP VIDEO CAMERA (FIXED)

Interior Camera shall be: Sony SNC-VM601, Axis P3374-V, Samsung SND-7084 or approved equivalent.

Elevator Cameras shall be: Axis M3047-P or approved equivalent.

Camera shall:
1. Be ceiling / wall mountable dome-type.
2. Be IP-native.
3. Utilize Power-over-Ethernet (PoE) for device power.
4. Be designed to provide video streams at the minimum HDTV 720p (1280x720) resolution at 30 frames per second using H.264 / H.265.
5. Be equipped with Day/Night functionality, Wide Dynamic Range (WDR), color video to ½ lux, black and white below ½ lux and feature remote back focus capabilities.
6. Be provided complete with standard interior (3-9 mm nominal) auto-iris lens.
7. Per-camera lens selection dependent upon Owner-required field-of-view.
8. Have a smoked bubble.
9. Have housing and mount color to match surrounding architectural colors.

2.3 NETWORK VIDEO SERVER:

Security Cameras shall be connected to the owners Security LAN by UKCNS personnel and SMS VAR of Record, Stanley Security. Cameras shall be routed to Management Servers and Recording Servers via the Owners Security VAN. Installing Integrator shall complete all Camera Programming worksheets and provide to Stanley Security for System Programming and addition of Cameras to the Campus VMS. Integrator shall coordinate with VAR of Record, Stanley Security to include the cost of this programing in their bid for project.

2.4 WIRE AND CABLE

General

1. Provide and install all device DATA cables as per UKITS and Division 270000 requirements. DATA cabling for Security cameras shall be terminated in each DATA Closet, in approved labeled patch panels (As per Division 270000 requirements). Camera cabling should be terminated in jacks at the camera device. Contractor to provide all patch cables. All exterior camera cables shall be provided with Surge protection units on each cable. Proper cable types must be must as per UKITS standards and Division 270000 requirements.
2. Provide all interconnecting system cabling at Security Closets and Communication Closets as well as at security device endpoints. All UKITS standards must be followed. Exterior cameras that exceed the normal distance for copper cable must be installed with Fiber Cable as per UKITS Standards and Division 270000 requirements. At these fiber locations a Rugged / Hardened Switch is required, this switch should be provided by contractor by purchase thru UKITS.

3. Bond metallic system components in all Communications Closets and Security Closets to existing in-room ground bar.

4. Confirm and provide any necessary interface cabling with existing Access Control system.

PART 3 - EXECUTION

3.1 GENERAL

Work performed for installation of VMS system shall be performed by Security System Integrator – “Contractor”.

Provide equipment as indicated on Drawings and specified herein.

Provide all labor and materials necessary to construct systems as described herein to include furnishing and installing all system equipment, interconnecting cabling, programming and start-up, software (including software upgrades and reprogramming as necessary), termination components, mounting hardware, incidentals, accessories, testing, labeling, documentation and training as detailed in following sections.

1. Neatly lace, dress and support cabling.
2. Coordinate any downtime with Owner.

Prior to installation:

3. Conduit and equipment back boxes are as required. Contractor is responsible for coordination with all trades to ensure that conduit and back boxes are correctly placed for VMS use. Contractor is responsible for coordinating installation of conduit and boxes to make sure they are installed on schedule with other trades and are coordinated as to not interfere with other systems or pathways.

4. 120V AC Power is as required and is properly located.
5. LAN structured cabling is as required and properly located and installation has been coordinated with other trades.
6. Coordinate all devices and locations prior to equipment installation with owner.
7. Coordinate Owner-desired camera views, providing camera modeling prior to installation.
8. Coordinate Camera housing and mount finishes with Architect and Owner.

Install and wire equipment in accordance with University of Kentucky ITS Standards, manufacturer’s recommendations, and accepted engineering and installation practices.

Mount system components as recommended by manufacturer. All equipment mounting in Communication Closets must be approved by UK ITS prior to installation.

9. Arrange equipment to facilitate permanent access for use and maintenance.

3.2 CABLE INSTALLATION

Neatly lace, dress and support cabling.

Pull cables in accordance with cable manufacturer’s recommendations and ANSI/IEEE C2 Standards as well as University of Kentucky ITS Standards and all Division 270000 requirements.

1. Do not exceed manufacturer’s recommended pulling tensions.
2. Do not install bruised, kinked, scored, deformed, or abraded cable.
3. Do not splice cable between indicated termination, tap, or junction points.
4. Remove and discard cable where damaged during installation and replace it with new cable.
5. Pull all cable by hand unless installation conditions require mechanical assistance.

Run all wire and cable continuous from device location to final point of termination. No mid-run cable splices shall be allowed.

Furnish and install all cable such that ample slack is supplied at device terminating end of cable to compensate for any final field modifications in camera location.

6. Loosely coil slack in “Figure-eight” in a manner that prevents kinking.
7. Loop radius shall be at least 4X minimum bend radius for cable.
8. Slack length of cable shall be 4 feet (minimum).

Provide code compliant fire proofing techniques for all penetrations of fire rated partitions and slabs, where penetrations are made by or used for installation of Video System.

Coordinate routing of wire and cable requiring isolation from power, radio frequency (RF), electromagnetic interference (EMI), telephone, etc. with Engineer.

At no time shall any cable be subjected to a bend less than manufacturer’s specified minimum radius. Also refer to UKITS Standards.

Provide grommets and strain relief material where necessary to avoid abrasion of wire and excess tension on Wire and Cable.

Make connections with solder-less devices, mechanically and electrically secured in accordance with manufacturers’ recommendations. Wire nuts shall not be an acceptable means of connecting wire and cable.

3.3 IP VIDEO CAMERAS

Mount Video Cameras per project drawings.

Field-verify exact locations and field-of-views with Owner prior to installation.

Provide video camera lenses to accommodate Owner-coordinated field-of-view per camera.

1. Field verify and confirm views with Owner prior to procurement and final installation and adjust camera positions and lens sizes as required upon installation.

Configure resolution, frame rate, password, etc. to match existing system installation, coordinate with UKPD.

Coordinate with Owner prior to installation to confirm required parameters.

Wire interface(s) to external alarms.

3.4 NETWORK CONNECTION

Cross-connections to building LAN by Owner, NO EQUIPMENT MAY BE CONNECTED TO UK NETWORKS BY ANY SUB CONTRACTOR, ONLY BY UK ITS personnel.

3.5 LABELING AND IDENTIFICATION

Labeling protocols to match all UK Security System installations.

1. Cabling, Hardware and Equipment shall be clearly labeled using a Code identifying each piece as unique throughout Video Camera System. This code will aid in identifying hardware for servicing and maintenance.

2. Labels and Tags shall be machine-generated using English character set in black ink on white background labels and Tags.
a. Self-laminating permanent labels are required on cables; permanent non-marring labels are required on all other hardware/cabinets.
b. No hand-written Labels or Tags shall be allowed.
c. Dymo or Kroy type adhesive backed lettering is not acceptable.

Identify and tag all cables to denote function.

3. Tag shall indicate:
   a. System of which cable is a part,
   b. Indication of cable destination (e.g. room or component), and
   c. Unique alpha-numeric identifier that distinguishes cable from all others in system.

All labels shall be machine generated. Handwritten labeling is not acceptable.

Label all front panel controls used in normal operation of system using plastic laminate engraved labels or approved equal.

4. Firmly affix to panel or device.

Labeling Formats

5. To be defined by Owner prior to construction following practice for all campus Security System installations.

3.6 SYSTEM TESTING AND ACCEPTANCE

System shall be complete and fully operational before requesting final acceptance and scheduling system Integration into the Campus VMS.

Installation of all field devices will be inspected by Owner or Owner’s representative. Inspection will consider overall neatness and quality of installation, functionality of each individual device, mounting, wiring and labeling.

Conduct a seven-day burn-in test. Intent of burn-in test shall be to prove System by placing it in near real operating conditions prior to connection to Campus VMS.

1. During this period System shall be fully functional and programmed so that all points, controls, messages, prompts, etc. can be exercised and validated.

Provide written notification to Owner that system is completely installed, integrated, burn-in testing completed and is fully functional as specified herein.

2. Submit schedule for acceptance testing. Representatives of Owner, UKPD and/or representative may witness test procedures.

3. Notify Owner UKPD and the representative in writing a minimum of two weeks in advance to allow for such participation.

4. Describe test procedures prior to testing and submit sample test form to Owner / Representative.

Prior to final acceptance test, equipment rooms and similar areas should be free of accumulation of waste materials or rubbish caused by operations under Contract.

Equipment shall be on and fully operational during any and all testing procedures.

5. Provide all personnel, equipment, and supplies necessary to perform site testing.

6. Supply a form of communication with remote parties in the team for use during test.

7. A manufacturer’s representative shall be present on site to answer any questions that may be beyond technical capability of Contractor’s employees, if Contractor so elects or by specific request of Representative Owner, at no charge to Representative or Owner.
During course of final acceptance test, Contractor shall be responsible for demonstrating that, without exception, provided VMS complies with contract requirements.

Testing shall include but not be limited to:

8. Continuity and conductor/connector integrity on all cables.
9. Demonstrate functionality of all cameras including:
   a. Owner-acceptable field of view.
   b. Response to alarms.
   c. Response to Access Control System inputs.
10. Confirm remote viewing, configuration and camera control via Browser and in the UKPD Operations Center. Confirm all Analytic uses on Cameras programmed for Analytic use.
   a. Confirm system rights settings for authorized users.
11. Demonstrate storage and retrieval of recorded video by date/time.

Owner retains the right to suspend and/or terminate testing at any time when system fails to perform as specified.

12. In event it becomes necessary to suspend test, Contractor shall work diligently to complete / repair all outstanding items to condition specified in Specification and as indicated on Security Drawings.
13. All of Owner’s / Representative Fees and expenses related to suspended test will be deducted from Contractor’s retainage.
14. Contractor shall supply Owner with a detailed completion schedule outlining phase by phase completion dates and a tentative date for a subsequent punch list retest.
15. During final acceptance test, no adjustments, repairs or modifications to system will be conducted without permission of Owner.

Upon successful completion of final acceptance test (or subsequent punch list retest) Owner or Representative will issue a letter of final acceptance.

Records of Test Results shall be included in System Documentation and submitted as detailed below.

3.7 OWNER TRAINING

Training course for system covered in this section shall be a minimum of 6-hours.

Maximum number of students to be (6).

1. Training materials shall be provided to all students.

Record, label, and catalog all training on DVD Videodiscs. Provide discs to Owner for future in-house training sessions and / or reviews. Furnish all temporary equipment necessary for taping all training sessions. Maintain accurate and up-to-date time sheets of all training sessions.

Contractor shall be on call during Warranty period to answer any questions Owner might have. The Owner reserves the right to use any excess training hours, not used by time of system completion, for future training as requested by Owner until total number of training hours has been completed.

3.8 DOCUMENTATION

All Owners manuals and or maintenance information shall be provided in printed form as well as electronic PDF format to the owner and owner representative.

3.9 WARRANTY AND SUPPORT
Unless otherwise noted, Contractor shall guarantee all materials, equipment, etc., two (2) years from date of final Owner acceptance of system. This guarantee shall include all labor, material and travel time.

Contractor/Integrator and/or manufacturer(s) of system equipment must offer:

1. Technical Support Capabilities (Technician onsite) response time onsite within 4 hours, 24-hours/7-days per week (“24/7”), and 365 days per year.
2. 24-hour turn-around (from receipt of item) for Repair or Replacement of failed components, 7-days per week.

END OF SECTION