DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

281300 - ACCESS CONTROL

A. General

At the beginning of the project, schedule a meeting with the Facilities Access/Maintenance Coordinator located in Facilities Management with questions and concerns. Phone number is 319-273-6109. No equipment or locks should be specified without approval from the Facilities Access Office.

B. Software

Lenel Onguard is utilized as the University's electronic access software. ~~Communications Engineering Company (CEC) 319-294-9000 is the University's value added reseller and partner~~. All readers, door contacts/resistors, intrusion alarms, interface modules, configuration and programming should be provided through ~~CEC~~ the same vendor.

C. Access Control System

1. All access controls will be integrated into the Lenel system.
2. Confirm proper specification and installation of access control with the Facilities Access Office located at Facilities Management.
3. The campus access control system operates with the campus HID iclass card. Only factory certified dealers are authorized to purchase and install this equipment.
4. All database programming is performed by the owner.
5. Lenel system shall be fully integrated with the ADA devices on all doors where applicable.
6. The electrical contractor shall furnish and install dedicated conduit raceways for the system. Conduit, IT cable tray, or J-hooks are acceptable.
7. In locations where existing devices are to remain, the conduits that serve them must be concealed.
8. All locks shall be full mortise style unless otherwise approved.
9. If possible recessed j-boxes are required for all card reader locations and must be sized accordingly (single or double gang). Lenel panel outputs shall be used to

control all door locks.

10. Locate all door position switches (contacts) on top of door and recessed in the top door frame rail between 3”-6” of the latch side of the frame. Do not locate door contacts in the vertical section unless Schlage 300/400 lockset.

D. Qualifications

The Lenel system must be furnished and installed by a factory authorized security integrator who also meets the following minimum requirements:

1. Physical office located within 60 miles of the campus.

2. Firm has achieved the status of Advanced Integrator or higher from Schlage and/or Lenel approved training. Certified technicians shall be at the local level.

3. The project manager and/or lead technician assigned to the project shall be personally certified at the Install/Maintainer level or higher.

4. Photocopies of certifications should be included in the submittals.

5. The security integrator shall provide a turn-key installation including but not limited to all low voltage wiring, installation, termination of field devices and control panels, system programming, provisioning, testing and certification.

E. Construction:

1. Submit as-built CAD drawings identifying each component, system operation, and wiring system to the Facilities Access Office.

2. Submit factory authorized wiring diagram for all electro-mechanical hardware.

3. During the close out portion of the project, the contractor will:

a) Perform start-up of system, a full system check-out, and any required adjustments to confirm system meets the Facilities Access Office requirements.

b) Demonstrate system operation to Facilities Access Office and instruct personnel on proper operation and maintenance of each item.

c) Coordinate final inspection with Facilities Access Office. Project will not be completed until Facilities Access Office has completed inspection and provided approval.

F. Material list for Electronic Doors:

1. Electric Hinges:
    a) Preferred products:
    b) HES, Marray, or Ives

2. Door Contacts:
    a) GRI 8080-TWG-W

3. Request to Exit Device:
    a) Only in Von Duprin panic devices or Schlage AD300 or AD400 locksets.
    b) No Request to Exit sensors shall be installed.

4. Electric Strikes:
    a) Von Duprin, HES or Marray
    b) Use only if approved by Facilities Access Office

5. Lenel Boards:
    a) Intelligent Dual Reader Controller LNL-2220
    b) Intelligent Single Reader Control LNL-2210
    c) Dual Reader Interface Module LNL-1320
    d) Input Control Module LNL-1100
    e) Output Control Module LNL-1200

6. HID iclass SE readers:
    a) HID R10, HID R40, and HID RK40 (keypad)

7. Lock Power Supply:
    a) Altronix – AL600ULPD8CB
    b) Integrated Lock device license LNL SWG-1800-N-PL

8. Lenel Panel:
    a) LNL-AL600ULX-4CB6 comes with the board.
    b) Battery for box ABS-12V7T1PC
    c) Von Duprin distribution board 900-4RL
    d) Von Duprin fire alarm module 900-FA

9. Electrical Power Transfer:
    a) Von Duprin EPT-10
    b) Securitron CEPT 10

10. Continuous Hinges:
    a) Shall not be used on campus

11. Exit Devices:
    a) Von Duprin LX-RX-LC QEL 99 series

12. Camera Equipment:
    a) Axis camera equipment
    b) Contact ITS Systems/Applications Administrator at 319-273-2038

G. Cable & Cable Requirements

1. The electrical contractor shall furnish and install a dedicated conduit raceway system. The cable must be put in the raceway or cable tray. Wires shall not hang by themselves unless using a J hook.
    a) Equipment preferred products:
    b) Access Control Cable “Banana cable” A0251822B West Penn AC251822BYE for traditional hardware
    c) Wires to use if don’t pull banana cable: West Penn 25244BGY and/or West Penn 25290B and/or cable RS485 - West Penn D4852GY and/or West Penn 253270B

H. Warranties:
Provide a 2 year warranty on failure on parts of all electro-mechanical hardware.

I. Physical Location Requirements:

1. Before installing the Lenel system “head-end equipment” (control panels and power supplies) ensure that adequate wall space is reserved for this equipment during the initial design stage. Coordinate with ITS Network Services and Facilities Access Office to determine the location.

J. Mechanical Hardware, Locksets & Keys

1. All locks shall be full mortise style unless otherwise approved.

2. Installation: Use of self-tapping screws is prohibited on all locksets, panic devices, door closers/ADA operators, etc. Use threaded machine screws or through bolts. No power driven tools shall be used for installation of locksets and hardware on doors.

K. Exterior Doors

1. All doors must be hard wired. No wireless allowed.

2. Exterior doors will be designed to be equipped with a key-override for emergency and maintenance personnel use in the event that the card access system is not available.

3. Exterior doors should be equipped with Von Duprin panic device hardware with QEL (Quiet Electronic Retraction), latch bolt monitoring and request-to-exit kit built in. No electric strike plates or PIR Request to Exit Motion Sensors.

4. All exterior doors must be hardwired back to the Lenel panel. Von Duprin 99 series rim panic exit device or mortise locks, on all exterior doors.

5. All doors must have position switches (door contacts and resistors) installed to ensure door is in the closed position for monitoring reasons.

6. Proximity readers should be installed at doors identified for after-hours access. One handicap entrance is to be identified for after-hours access.

7. All door that are monitored must have a closing device on door.

8. Interlock handicap operators with door access system to prevent operation if door is locked.

9. A Schlage AD-300 is an option, if an electrified mortise lock or panic device is not feasible.

10. On an aluminum or steel door, use Securitron Electronic Power Transfer (EPT 10).

L. Interior Doors

1. For monitoring reasons, all interior doors should have position switches installed.

2. No electric strike plates or PIR Request to Exit Motion Sensors, unless approved by Facilities Management Facilities Access Office.

3. All interior doors must be mortise locks. If using a panic device, it must be Von Duprin with QEL, latch bolt monitoring and request-to-exit kit built in. Must be hardwired back to Lenel panel. Electric strike maybe an option if doing an interior retrofit. This must be approved by Facilities Management Facilities Access Office.

4. Electrified mortise lock must have a door position switch (door contacts/resistors) and a request to exit included.

5. A Schlage AD-400 wireless, is an option, if an electronic hardwire lock is not feasible. Must be cleared by Facilities Management Facilities Access Office.

M. Additional

1. All electronic locks on campus must have “Best Locks” (7 pin core) lock cylinder, for a key override.

2. All circuit boards must be in a panel box that is lockable. Before mounting a panel box in a data closet area, space must be approved by Facilities Management Facilities Access Office.

3. All readers must be mounted straight and level. Door contacts/resistors need to flush and match the color of the door frame as much as possible. Panic bar and request to exit need to be tight, straight and level. Card reader and keypad required for certain locations, verify with Owner.

5. If an electrified mortise lock or panic device is not feasible, Schlage AD-300 is an option.

6. Fail secure (locked when unpowered) electronic locking device must be on all latching and locking devices.

7. The electronic door access system components should be on emergency power. Any telecommunications equipment that is required for connecting the electronic door access system to the campus network is also required to be on emergency power.

8. No more than 2 doors with exit devices per independent 24v power supply.

28 31 00 - FIRE ALARM SYSTEMS

A. General

1. Design Requirements

a) Meet current NFPA 72 (National Fire Alarm Code), NFPA 101 (Life Safety Code) ADA, UBC, Iowa State Building Code, paying particular attention to the Fire Safety Rules for School and College Buildings.

b) Require strict compliance with audibility requirements.

c) Owner desires to install analog type addressable systems in new buildings and major remodels in existing buildings. Smaller buildings and minor additions to

existing systems may still be hard wired. Voice systems are also desired in most new construction. Discuss the basic system type with the Owner prior to design.

2. Materials

   a) University standard fire alarm control panel is Simplex 4100 Series. All wiring to be in conduit.

3. Preferred Zoning/Annunciation:

   a) Addressable systems:

      1) Annunciate each device or group of devices by room number and room function, on the LCD display.

B. Fire Alarm Control Panel (FACP)

1. Power Supplies:

   a) Primary power source from normal 120 VAC building power with emergency generator backup if available. Secondary power source is an internal battery pack.

   b) Provide adequate internal power supply capacity for 25% future growth.

   c) Furnish a dedicated circuit for each fire alarm control panel.

   d) Provide a convenience receptacle, for service purposes, within 3' of the FACP.

2. Generally control panels should be located at the fire department "attack" entrance. Discuss locations with Owner's Representative.

3. Voice Systems:

   a) Provide a microphone and audio switches at the FACP and at the "attack" entrance annunciator(s).

C. Local alarm panel communication with campus emergency responders.

1. Owner has a Siemens Automation System (BAS) in most campus buildings. Discuss system availability and connection point location with Owner before fire alarm design. Owner prefers a stand alone fire alarm system in each building, with connection to the BAS system indicating:

   a) General alarm

   b) System trouble

2. Provide a ¾" conduit with cables, as required, between the FACP and the nearest

building automation panel.

D. Annunciator

1. Provide 4100ES annunciator at fire department “Attack” entrance(s). LCD type preferred. Mount in shaded location so sunlight will not wash out LCD display.

2. Annunciator type, quantity and location(s) to be discussed with Owner’s Representative at schematic design phase.

3. Operating controls such as reset, acknowledge and smoke control accessible by key only.

E. Auxiliary Systems

1. Fan shutdown equipment:

   a) Provide fan shutdown(s) where required by current codes.

2. Door holders:

   a) 24V

3. Smoke elimination:

4. Extinguishing Systems

   a) On Drawings show wiring between any extinguishing systems and the building fire alarm system as well as the Constructor responsible for installation.

F. Coiling Doors/Fire Curtains (Roll Up Metal Doors)

1. The use of this type door is strongly **discouraged**, and only by specific permission of the Owner’s Representative.

G. Wiring

1. Mark junction boxes and conduit by painting red.

2. Min. size # 18 AWG with larger sizes as needed, stranded wire allowed. Fire alarm cable to be plenum rated, even when used in non-plenum areas or in raceway. Type per Simplex approved list.

3. Complete raceway system required.

H. Job Site Considerations

1. When working on operating fire alarm systems, only circuits(s) affected may be

bypassed or disconnected and only during working hours. Panel must be operational at end of working hours. Disconnections and bypasses to be done only by Owner's Representative(s).

2. Detectors in construction areas to be "Bagged" during dust producing operations. Working detectors to be "uncovered" at end of working hours.

I. Testing:

1. Start up and certification testing to be done by a qualified fire alarm technician. Technician's name and certification number to appear on documents.

2. Acceptance testing to be witnessed by Owner's Representative. Owner to receive copies of all test results immediately upon completion, 100% of the devices must be tested.
3. Test in accordance with NFPA 72 – Chapter 7. Provide documentation per 7-5.

4. All A/V devices must be uniquely identified with a bar code - Barcode Reader to be turned over to owner.

5. Walk test program to record/download test results must be included. Hardware and software to be turned over to the owner.