1 General
Provide all material, labor, engineering and operations necessary for the installation of a complete, operable intrusion alarm system as shown on the drawings and as specified herein. The application of this standard shall be utilized for all customer requested and university guided intrusion systems.

2 Related Requirements
2.1 Division 27 – Communication

3 Reference
3.1 Abbreviations and Acronyms:
- AFF - At Finished Floor
- BICSI – Building Industry Consulting Service International
- EC – Electrical Contractor
- EHPS – Environmental Health and Public Safety
- EOLR – End of Line Resistor
- FM – Factory Mutual
- IBC – Indiana Building Code
- IEC – Indiana Electrical Code
- IFC – Indiana Fire Code
- NFPA – National Fire Protection Association Codes and Standards
- PIC – Purdue Information Connection
- PIR – Passive Infrared
- PUPD – Purdue University Police Department
- TR – Termination Room

4 Submittals
4.1 An action submittal for all intrusion alarm systems shall be submitted to EHPS for review and approval prior to system installation. The layout shall include the following:
- Sensors
- Sensor room number
- Sensor name/tag
- Height (above grade, at finished floor)
- PIC ID’s
- PIC detail showing junction routing
- Manufacturer’s product data sheets for all intrusion alarm systems equipment. Indicate which products will be used in the project.

5 Quality Assurance
5.1 Contractor Qualifications:
- Work shall be performed by a contractor regularly engaged in the design and installation of intrusion alarm systems.

5.2 Regulatory Requirements:
- System design, installation and materials shall comply with the applicable regulating agencies and organizations, which include, but are not limited to the following:
  - UL
  - FM
  - Purdue University
  - Manufacturer installation instructions and best practices.

5.3 System design, installation and materials shall comply with applicable codes, standards, and regulations, which include, but are not limited to the following:
- IBC
- IFC
- IEC
- NFPA
- BICSI

5.4 It is the contractor’s responsibility to notify the engineer, architect and owner in writing prior to installation if there is a conflict or discrepancy between the applicable codes, standards or regulations and the drawings or specifications.

5.5 The contractor shall assume full financial responsibility for compliance with all applicable codes, standards and regulations. This includes compliance for modification or extension of existing systems. All deficiencies shall be corrected at no additional cost to the Owner.

6 Products
6.1 All products, equipment and materials shall be new, listed and installed in accordance with the manufacturer’s instructions and its listing.

7 Installation Of Equipment
7.1 Intrusion systems shall be limited to a single partition.
7.2 Smoke/heat detectors are not permitted to be installed on intrusion systems.
7.3 Panic/hold up buttons are not permitted to be installed on intrusion systems.
7.4 Key switch for arming/disarming is not
permitted.

7.5 Wireless devices for intrusion systems require prior approval from EHPS before planning and/or installation.
   - Wireless keypads are not permitted.
   - Repeaters are not permitted.

7.6 All wiring shall be installed in unshared, continuous conduit.

7.7 Cable shall be Windy City #444391-08 or approved equal.

7.8 Cable shall be labeled with the following:
   - Room Number
   - Zone Number
   - Device name / tag

7.9 The following wire color code shall be followed:

7.9.1 For device connections:
   - Red and black for DC power
   - White and green for alarm contacts
   - Blue and brown for tampers

7.9.2 For bus and loop connections:
   - Red and black for DC power
   - Bus A green
   - Bus B white

7.10 All field devices that are equipped with tamper switches shall be connected to the intrusion system.
   - Only one tamper switch is permitted per zone.

7.11 Tamper switches shall be installed on all cabinets.

7.12 EOLR’s shall be installed at the field device(s).
   - Exception: EOLR’s for cabinet tamper switches shall be installed within the enclosure that it protects.

7.13 Keypad height shall be 48 inches AFF to the top of the unit.

7.14 Motion detector/PIR units shall not point at a heat source and/or windows.

7.15 Height of the motion detector/PIR shall be determined by manufacturer instructions and application needs.

7.16 After motion detectors are installed and walk tested - the alarm LED shall be defeated (turned off).

7.17 Roller ball switches shall be installed on the hinged side of the frame.

7.18 Sirens are not permitted on intrusion alarm systems unless approved by PUPD.

7.19 Telephone (PIC) line shall be dedicated to the intrusion alarm system. RJ31X jacks and sharing of telephone lines are not permitted.

7.19.1 The Telephone (PIC) jack shall be installed in the intrusion alarm panel.

7.19.2 PIC shall be homerun from the TR without additional jacks or jumpers installed between the intrusion panel and TR.

7.20 The power supply(s) shall be installed in secure location. Installation of power supplies in common areas is not permitted.

7.21 System batteries shall be replaced every four years.

8 Approved Products

8.1 All Intrusion panels and parts shall be approved by EHPS prior to system installation.

9 Reporting

9.1 Intrusion systems that report to PUPD shall use Contact ID.

9.2 Intrusion systems that include environmental monitoring are not permitted to report to PUPD. Such systems shall report to an off campus monitoring station.

9.3 Intrusion systems that report to PUPD shall not have zone restoral turned on.

10 Programing

10.1 Intrusion systems are not permitted to receive alarms on, or be controlled by personal and/or departmental electronic devices, i.e. smartphones, tablets, email, etc.

11 Closeout Activities

11.1 Preparation for intrusion alarm system testing:

11.1.1 Verify that all intrusion alarm system sensors are installed in accordance with the drawings, specifications and all applicable codes.

11.1.2 PIC test reports shall be given to ITIS no less than fifteen business days prior to requesting intrusion alarm systems connection/system demonstration.

11.1.3 EC and/or Purdue Electronic Shop is responsible for coordinating ITIS approved PIC
ID’s with the appropriate department for PIC activation. Allow seven business days for PIC activation.

11.1.4 All intrusion alarm system sensors shall be installed in final form, including walktesting.

11.1.5 Request Contact ID account number from EHPS. Attach the following information with the request, and allow seven business days for processing:

- Complete zone list, with device type and room number per zone.
- Complete call list in the order to be called. Include the words home, cell, work, etc. before each phone number to be called.

11.1.6 EHPS shall schedule a time to confirm all alarm signals into PUPD for each intrusion system.

11.1.7 It is the responsibility of the EC and/or Purdue Electronics Shop to be present and able to access all intrusion alarm system sensor locations during the agreed upon date/time to finalize adjustment of sensors.

11.2 System Acceptance

11.2.1 The Owner’s personnel shall be given instruction for operation of the intrusion alarm system.

11.2.2 Provide the closeout submittal to the Owner upon completion of the system acceptance. The following shall be supplied to the Electronics Shop:

- Furnish spares of each sensor model installed on the project. One spare for each of each sensors type shall be provided, but not less than one device. This includes all adapters and mounting hardware.