SECTION 280500 - COMMON WORK RESULTS FOR ELECTRONIC SECURITY

PART 1 GENERAL

1.1. SCOPE OF WORK

A. SCOPE OF WORK FOR DESIGNER AND/OR CONSULTANTS

1. Individuals or companies acting as security designers or consultants for projects owned by University of Florida (UF) in new construction or retrofit projects shall follow specification sections listed under Division 13 of the UF Design and Construction Standard (http://www.facilities.ufl.edu/forms/dcs.php). The designer or consultant shall provide construction documents complete enough for contractors to bid the project. The level of completeness of the design documents shall, at a minimum, include the following information:

a. Floor plan drawings indicating all security devices, including card reader, locking devices, sensors, detectors, keypads, panels, power supplies, cameras, racks, etc. The designer or consultant shall establish a security plan based on his/her expertise and with input from the facility’s users to determine where is the recommended location in the floor plans for all security devices.

b. Rough-in details for security devices indicating all sizes of junction box mounting heights, conduit, power and raceways requirements.

c. Security panel elevations indicating all power supplies, access control panels, alarm panels with quantities, manufacturer information and part numbers of electronic boards within those panels.

d. Schematic drawings indicating connections to all security components and interconnection to other buildings, if applicable.

e. For retrofit projects, the designer or consultant shall send all design documents to UF PPD ITS for review. Approval from this department shall be granted before commencement of any work.

2. The designer or consultant shall extract all paragraphs of the specifications listed under Division 13 sections that apply to the project being designed and shall incorporate them into the design documents. Special conditions particular to the project, whether or not indicated in this specification section, shall be indicated in the design documents as to allow the contractor bidding the project to account for all issues affecting price and schedule within a reasonable (industry standard) level of accuracy.

3. The designer or consultant shall pick all applicable door elevations and mounting details, from all available details in this guideline, and include them into their design documents. UF standard details shall be modified to reflect special conditions applicable to the project being designed. This is especially important with storefront or glass wall installations, where supplied door typical do not reflect the exact setup of the doorway. The designer or Consultant shall be prepared to explain during
reviews, the particular situations in the project that caused the deviation from the standard.

4. The designer or consultant shall coordinate with the project’s electrical designer/engineer all power requirements for the security system. The electrical design for the project shall include all power outlets, power junction boxes, and all raceways required for access control and alarm panels, power supplies, cameras and any other devices part of the security system.

5. The designer or consultant shall coordinate with the project’s architect or door hardware consultant on all locking and sensing devices mounted in door frames or doors. The end result shall ensure the building users a system compliant with all applicable building codes and the level of safety and security in accordance with the requirements given to the designer or consultant by the users during the design process.
B. SCOPE OF WORK FOR CONTRACTORS

1. Individuals or companies acting as general contractors or security contractors bidding or executing projects involving security equipment, in buildings owned by University of Florida (UF) in new construction or retrofits projects shall follow all specification sections under Division 13 of the UF Design and Construction Standard (http://www.facilities.ufl.edu/forms/dcs.php). Contractors shall factor in their proposals or GMP (Guarantee Maximum Price) for the projects the following tasks:
   
a. Supply and installation labor of all devices, raceways and wiring part of the security systems.

b. Supply of all spare parts for the security systems, as indicated in the project's design documents.

c. Production and delivery of all submittals for all security systems part of the project, as indicated in the design documents.

d. Production and delivery of all as-built information for all security systems part of the project as indicated in the design document.

e. All cost (materials, labor and transportation) associated with warranties for the security systems as indicated in the design documents.

2. The contractors shall also factor into their proposals all the requirements in the front end specifications or general requirements (Division 1) part of the project.

3. The contractor shall provide all information as required in this specification section for the owner to program the access control system when the system is tied to the main access control system in the UF campus.

4. The contractor shall provide all software licenses for administration or programming of security equipment.

5. The contractor shall not base their quote or GMP in equipment substitutes or alternate methods unless the contractor has previously received an approved variance form from UF PPD ITS for such substitute equipment or alternate methods.

1.2. RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Design and operation of the security systems shall conform to the following referenced codes, regulations, and standards as applicable:
1. National Electrical Code (NEC)
2. Life Safety Code (NFPA 101)
4. Electronic Industry Association ANSI/EIA/TIA
5. National Electrical Manufacturers Association (NEMA)
6. Underwriters Laboratories UL 294, UL 639, and UL 1037, UL 1076
7. National Fire Protection Association (NFPA)
8. Federal Communications Commission (FCC) 47 CRF Part 15 and 90

1.3. CONTRACTOR QUALIFICATIONS

Follow all contractor qualifications described in Division 13 of the UF Design and Construction Standard.

1.4. SUBSTITUTIONS

Follow all requirements for product substitutions described in Division 13 of the UF Design and Construction Standard.

1.5. SUBMITTALS

Follow all submittal requirements for electrical work in Division 13 of the UF Design and Construction Standard.

PART 2 PRODUCTS

2.1. CONDUIT AND RACEWAYS

See product requirements for electrical work in Division 16 of the UF Design and Construction Standard.

2.2. CABLE TRAYS

See product requirements for cable tray systems in University of Florida Telecommunications Standard (http://net-services.ufl.edu/infrastructure/)

2.3. SLEEVE SEALS

A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Advance Products & Systems, Inc.
   b. Calpico, Inc.
   c. Metraflex Co.
   d. Pipeline Seal and Insulator, Inc.

2. Sealing Elements: interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.

3. Pressure Plates: Stainless steel. Include two for each sealing element.

4. Connecting Bolts and Nuts: Stainless steel of length required to secure pressure plates to sealing elements. Include one for each sealing element.

2.4. GROUT

   Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, non-staining, mixed with water to consistency suitable for application and a 30-minute working time.

PART 3 EXECUTION

3.1. COMMON REQUIREMENTS FOR ELECTRONIC SAFETY AND SECURITY INSTALLATION

   A. The only two approved methods for running security system wiring are:
      1. Complete conduit run from security devices to security panels.
      2. Complete conduit run from security devices to cable tray system and complete conduit from cable tray system to security panels.

   B. J- Hooks for cabling part of the security systems are not allowed.

   C. Uses of hollow molding, storefront frame or door jamb as a raceway are not permitted.

   D. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.

   E. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
F. ADA requirement: Any boxes for wall mounted security cameras, in circulation paths (corridors, hallways, lobbies, etc.) shall always be installed at a height that ensures that the lowest portion of the camera is at least at 6'-8" from finished floor.

G. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electronic safety and security equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.

3.2. COORDINATION

A. Coordinate arrangement, mounting, and support of electronic security equipment:

1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.

2. To provide for ease of disconnecting the equipment with minimum interference to other installations.

3. So connecting raceways, cables, wire ways, cable trays, and bus ways will be clear of obstructions and of the working and access space of other equipment.

B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

3.3. SLEEVE INSTALLATION FOR ELECTRONIC SAFETY AND SECURITY PENETRATIONS

A. Electronic safety and security penetrations occur when raceways, pathways, cables, wire ways, or cable trays penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.

B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.

C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.

D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with fire stop system used are fabricated during construction of floor or wall.

E. Cut sleeves to length for mounting flush with both surfaces of walls.

F. Extend sleeves installed in floors 2 inches above finished floor level.

G. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway or cable, unless indicated otherwise.

H. Seal space outside of sleeves with grout for penetrations of concrete and masonry
1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.

I. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with all fire stop requirements of the UF Design and Construction Standard.

J. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with fire stop materials. Comply with all fire stop requirements of the UF Design and Construction Standard.

K. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.

L. Aboveground, Exterior-Wall Penetrations: Seal penetrations using cast-iron pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

M. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

3.4. SLEEVE-SEAL INSTALLATION

A. Install to seal exterior wall penetrations.

B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

END OF SECTION