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County SCHOOL DISTRICT

*FACILITY SECURITY ACCESS CONTROL, INTRUSION DETECTION, AND
SURVEILLANCE DESIGN SPECIFICATIONS FOR
NEW CONSTRUCTION, ADDITIONS, AND MAJOR RENOVATIONS*

Department of Information Technology

Charleston County School District

Charleston, South Carolina

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Overview

This document provides the general guidelines and specifications for architects and designers to incorporate the facility security (access control, intrusion detection, and surveillance) systems in Charleston County Schools. The specifications apply to any new building, addition, or major renovation.

Purpose

The purpose of the facility security system is to provide a safe learning and work environment for both students and staff. When designing a new school, addition, or major renovation, always consider these facility security specifications as a necessary and important part of the overall plan. Failure to follow these specifications may put students and staff at risk.






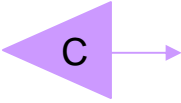
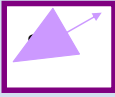

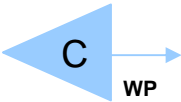
These specifications address three types of security risks.

1. Destruction of property
2. Physical threats to students and staff
3. Planned intrusion and acts of terrorism

By following these specifications, you can provide a school design that is both safe and efficient.

Abbreviations, acronyms, and symbols

Use these symbols for all CCSD drawings.

	Access control panel
	Access control server
AFF	Above finished floor
AFG	Above finished ground
	Card reader
DPS	Door position switch, referred to as a recessed door contact
	Electrified door strike
	Electrified RIM device
FSR	Facility security room
	Surveillance camera
	Surveillance monitor
	Surveillance server
TVSS	Transient voltage surge suppression
	Waterproof surveillance camera

General specifications

Use the general specifications for all schools.

- Provide all conduits and sleeves with uncut plastic bushings and pull strings for facility security systems.
- Provide fire rated sleeve assemblies for all wall penetrations.
- Provide firestopping on all penetrations through firewalls. Consult with CCSD/IT Project Manager for specific firestopping materials.
- Use EMT conduit in the interior and PVC conduit in exterior above ground areas per code.
- Design both the interior and the exterior building fascia or landscaping for optimal surveillance camera coverage.
- Provide electrical circuits no more than 18" away from the device that requires power.
- **Note:** Electrical contractors should coordinate with access control, intrusion detection, and surveillance vendors before installation of boxes, conduit, pathways, and power supplies.

Boxes and outlets

- All outlets should be 4"x4" deep with a single gang plaster ring and appropriate conduit knockouts unless otherwise specified.

Electrical outlet

Use the following specifications for electrical box design and installation.

- Coordinate with the CCSD IT Project Manager to plan electrical box spacing.
- Provide 4"x4" deep electrical boxes with a single gang plaster rings unless otherwise specified.

Data outlet

Use the following specifications for data box design and installation.

- Provide 4"x4" deep data outlets with single gang plaster rings for data communication.
- Provide a quad receptacle next to each data communication outlet.
- Mount data outlets on walls next to an interior corridor to enable the shortest conduit and cable placement.

Cables

- Facility security access control and surveillance systems cables and patch cords are yellow.
- Facility security for intrusion detection and fire detection systems cables and patch cords are red.
- **Note:** Labeling must be approved by the CCSD Director of Facility Security.

Cable support

Use the following specifications for cable support designs and installation.

- Provide the following types of support for cables.
 - Cable tray or NEC and OSF approved wireway/raceway
 - EMT, rigid, or IMC conduits (flex is acceptable in proper lengths)
 - J hooks specifically designed for CAT6 (with written permission from CCSD/IT Project Manager)
 - Sleeve assemblies from an approved manufacturer
- Ensure that no cable rests on ceiling tiles or T-bars.
- Never tie-wrap or secure cable to other conduit or pipe.
- Never support cable using suspended ceiling support wires.
- Provide cable tray supports from the same manufacturer as the cable tray.

Cable trays

Use the following specifications for cable tray design.

- Always use flexible, basket-type cable trays and a wall or trapeze mounting bracket. Never use solid bottom, whalebone, or covered cable trays. Never use a center mount for a cable tray.
- Preferred cable tray manufacturers include Chatsworth™, Cablofil®, and MP Husky™. Cable trays and supports must be from the same manufacturer.
- Ensure that installation contractors use proper mounting methods in accordance with the manufacturer's maximum weight load specifications. If there is not a manufacturer's specification, provide support at a minimum of every 5'.
- Install cable trays in all main corridors and any other area that has a large cable count.
Note: Cable trays should not pass through classrooms.
- Stop cable trays 6" to 12" away from firewalls.
Note: In schools with sprinkler systems, cable trays can pass through all fire rated walls if the integrity of the wall is maintained.
- Design for minimal elevation changes.

Conduits

Use the following specifications for conduit design and installation.

- Provide conduit behind walls in all new schools and additions. Never put conduit in or under the slab of a building. You must get a written exception from the CCSD/IT project manager for any other design.
- Terminate conduit within 6" of the cable tray. Do not pass any plane of the cable tray. Other trade cannot pass the plane of the cable tray either. There must be at least 8" clearance if parallel and 12" if perpendicular.
- Design conduit to protrude a minimum of 2" into each ceiling space. Never flush mount conduit.
- Provide all conduits with bushings and pull strings unless otherwise specified.
- Provide all outdoor conduits with footage markers (mule tape).
- Place supports at distances that allow for maximum weight support as determined by the NEC guidelines.
- Use conduit above the ceiling from the cable tray to surface mounted raceways for block walls in major renovations. If the walls are not block material, install conduit behind walls.
- Provide handholds and pull boxes for every 100' of conduit. No more than two 90 degree bends are allowed between pull boxes. Pull boxes must not change the direction of the conduit run.
- Do not use LB or other tight 90-degree fittings.
- Install a separate conduit that turns out to the cable tray for each outlet box.

Pathways and raceways

- Provide PANDUIT® Corp.'s Pan-Way® T-70 or LD-10 raceway when you must add cables in a major renovation with block walls.
- Provide recessed identically colored raceways in major renovations with sheetrock.

Sleeves

Use the following specifications for sleeve design and installation.

- Ensure that sleeves are from an approved manufacturer.
- Use throat, screw-on, or knock-on type uncut plastic protective bushings on each side of the sleeve to prevent jacket chaffing. Seal the bushings according to the original rating of the penetrated wall.
- Install sleeves that provide the same number of square inches as the cable tray that serves that wall. For example, if a cable tray is 12"x4", provide 48" square inches of sleeve area.
- Locate sleeves directly in line with the cable tray to ensure that there is minimal change in pathway elevation.
- Provide mechanical support for all cables outside of the sleeve to prevent slippage of the cable to the lower end of the sleeve.
- Use fire rated sleeve assemblies, from an approved manufacturer, equal to the capacity of the cable tray, wherever a cable tray pathway penetrates a firewall.
- For all exterior penetrations, provide sleeves and sealant for protection against the weather. Either use the manufacturer provided gaskets/seal or color appropriate caulking.
- Provide four 4" floor-to-floor sleeves between vertically stacked FSRs or within 6" of the cable tray when the FSRs are not vertically stacked.
- Permanently affix the installation and re-entry label on a wall within 12" of the sleeve.
- Use sleeves large enough to accommodate immediate and future cable requirements.
- Provide a minimum of 1" of space between sleeves.

Access control general specifications

Access control designs should provide a limited amount of access control entry into the school. Use the following specifications when you plan for access control doors and panels.

Interior access control doors

- Design all Facility Security Rooms (FSRs), main and intermediate telecommunication rooms (TRs), and the reception office door with the infrastructure for single electrified strike doors with proximity card readers on the exterior wall of the room.
- Provide a double gang electrical box with a single gang plaster ring for the proximity card reader. Mount this box on the exterior of the room's wall near the door at 42" centerline and above finished floor (AFF).
- Provide 3/4" conduit with bushings and pull string stubbed from the cable tray to the card reader on the room's exterior wall.
- Provide 1/2" conduit with bushings and pull string from the power supply to the door strike.

Exterior access control doors

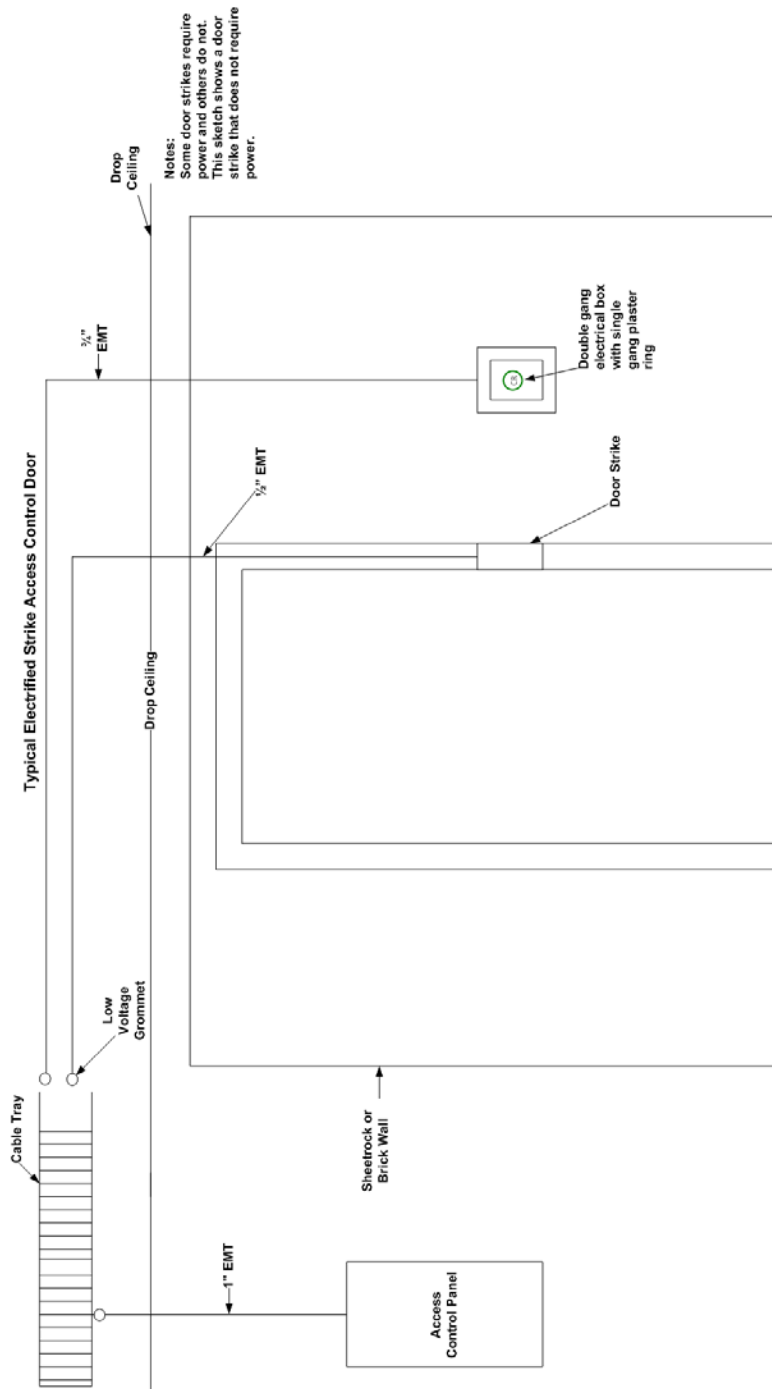
- Use electrified RIM device doors for exterior access control and the doors leading from the vestibule to the main corridor. Double doors require 3/4" conduit with bushings and pull strings on the hinge side of each door for power transfer.
- Ensure that there is a hex dogging device on electrified RIM device doors.
- Verify that the door hardware and electronics are compatible with the RIM device. Failure to do so can void the factory warranty.
- Design access control doors with a proximity card reader that mounts on an exterior wall at 42" centerline AFF or AFG. The card reader mounts on a double gang box with a single gang plaster ring near the door. **Note:** Doors on the exterior of the building must have a weatherproof faceplate and a recessed electrical box.
- Provide 3/4" conduit with bushings and pull string stubbed from the cable tray to the double gang box with a single gang plaster ring for the card reader on an exterior wall.
- Provide 3/4" conduit with bushings and pull string from the power supply to the cable tray.
- Provide 1/2" conduit with bushings and pull string from the power supply to the RIM device.
- Provide a door power supply that connects directly to a 120V circuit. **Note:** If power supply is not available at time of installation, provide a 4"x4" square electrical box above the drop ceiling. Leave enough room for the future installation of the power supply.
- When designing a doorframe for a door that meets the requirements for the Americans with Disabilities Act (ADA), verify your design with the Director of Facility Security.

Note: ADA doors require a specific power supply to operate the controller. Verify power requirements meet manufacturer's standards.

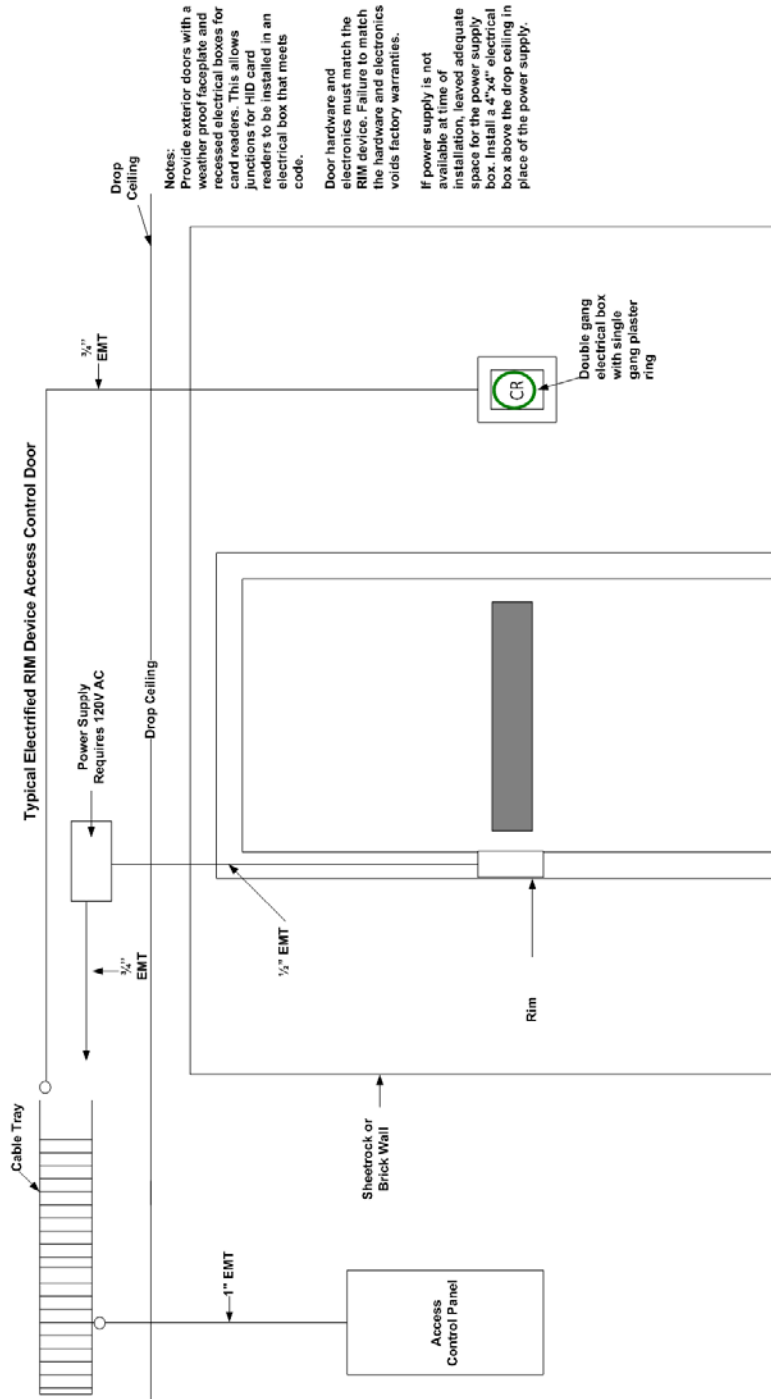
Access control panels

- Design a place for an access control panel for every four doors. Provide 1" conduit bushings and pull string from the cable tray to the access control panel. Provide a duplex receptacle for every two access control panels. Coordinate locations with CCSD HVAC Maintenance Department and the CCSD/IT Project Manager.
- Cable runs from the access control doors to the access control panels must be 800' or less. If an FSR is not available for an access control panel, get permission from the appropriate HVAC Maintenance Department manager to mount the panel in another area.

Example of a typical electric strike access control door



Example of typical electrified RIM device access control door



Intrusion detection general specifications

There are three types of devices that you must use for intrusion detection.

1. Motion sensors
2. Overhead door contacts
3. Recessed door contacts

Motion sensors

All doors to the exterior of the building require motion sensors. There are two types of motions sensors.

1. Ceiling mount
2. Wall mount

In most cases, plan for a ceiling mount motion sensor at no more than 10' away from the door. However, you can use a wall mount sensor when there is not enough ceiling space or the coverage area is small. Place wall mount motions sensors on the wall exactly opposite the door. Provide 3/4" conduit with bushings and pull string from the cable tray to the motion sensor.

Overhead door contacts

Any roof access hatch requires an overhead door contact. Provide 3/4" conduit with bushings and pull string from the cable tray to the overhead door contact.

Rolling door contacts

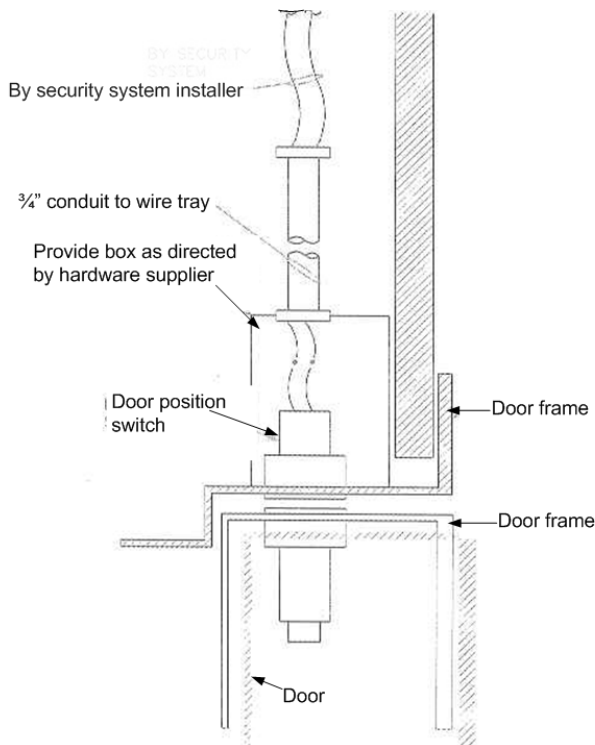
Any rolling door to exterior of the school requires an armored contact. Provide 3/4" conduit with bushings and pull string from a single gang box with a blank faceplate to the cable tray.

Recessed door contacts

All exterior doors require recessed door contacts (DPS). Provide 3/4" conduit with bushings and pull string from the DPS box to the cable tray.

Order door frames with the appropriate frame box.

Recessed door position switch mounting



Main VistaKey panel

The main VistaKey panel requires a 3/4" conduit with bushings and pulls string to the main fire control panel. It requires a dedicated 110V circuit with an enclosed transformer and two telephone lines. Locate this panel inside the FSR at a height of 60" AFF.

Depending on the size of the school, it may be necessary to install polling loop extender modules. If you have over 60 monitoring devices in a building, you must add a polling loop extender for every additional 60 devices. Coordinate with the CCSD HVAC Maintenance Department to mount the polling loop extender in an electrical closet. It requires 110V outlet with its own transformer and 3/4" conduit with bushings and pull string to the cable tray.

Security keypads in each zone require a 4"x4" box with a single gang plaster ring and 3/4" conduit with bushings and pull string to the cable tray. Install the box at a height of 60" AFF. Coordinate the location of the keypads with the Director of Facility Security.

Surveillance cameras general specifications

The purpose of the camera is to enable facial recognition. In order to fulfill this goal, design for camera locations that provide the best view of the area. Do not put cameras in locations that make installation and maintenance difficult.

There are three types of surveillance camera mounts.

1. Interior ceiling
2. Interior wall mount (preferred)
3. Exterior mount

Interior ceiling mount

Use the following specifications when you plan for interior ceiling mount surveillance cameras.

- Provide approved back box, T-bar, flexible conduit, and brackets for each camera at no higher than 12'8" AFF, prefer distance of 8' AFF.
- Provide the infrastructure for a camera every 60' in large rooms or corridors.
- Provide 3/4" conduit bushings and pull string from the cable tray to the camera.
- Plan for cable runs no more than 800' from the camera to the surveillance server.

Interior wall mount

Use the following specifications when you plan for interior wall mount surveillance cameras.

- Provide a double gang junction box with a single gang plaster ring for mounting at a height of 8' AFF.
- Provide one camera every 60' in large rooms or corridors.
- Provide 3/4" conduit with bushings and pull string from the cable tray to the camera.
- Plan for cable runs no more than 800' from the camera to the surveillance server.

Exterior mount

Use the following specifications when you plan for exterior wall mount surveillance cameras.

- Provide the infrastructure for mounting a waterproof camera over a 3/4" stubbed conduit with bushings and pull strings at 12'8" to 16' from ground.
- Locate cameras so there is a clear line of sight completely around the exterior of the building and into playground and parking areas.
- Do not design exterior building fascia or landscaping that obscures observation by surveillance cameras.
- Design mounting areas for cameras in a height appropriate to other exterior devices, such as lights, horns, or speakers.
- Provide underground conduit with bushings and pull string to any cameras in parking areas or along perimeter fences as necessary. This conduit must contain a footage marker (mule tape).
- Verify the design with the Director of Facility Security.
- Plan for cable runs no more than 800' from the camera to the surveillance server.

Location specifications

Auditorium or theatre

Access control

This room requires an access control door for entrance into the auditorium from the exterior of the building.

Intrusion detection

This room requires a motion sensor and recessed door contacts (DPS) on all doors to the exterior of the building.

Surveillance

This room requires interior wall mount surveillance cameras every 60' and at a height of 8' AFF.

Bathrooms

Access control

These types of rooms do not require access control.

Intrusion detection

These types of rooms do not require intrusion detection.

Surveillance

Surveillance cameras in the hallways should have a clear line of sight to the outside of the bathroom doors.

Bookrooms, storage areas, and workrooms (without exterior doors)

Access control

These rooms do not require access control.

Intrusion detection

These rooms do not require intrusion detection.

Surveillance

These types of rooms do not require surveillance.

Bus loop

Access control

This area requires an access control door leading from the bus loop to the interior of the building.

Intrusion detection

This area requires a motion sensor and recessed door contacts (DPS) on all doors to the exterior of the building

Surveillance

This area requires exterior wall mount surveillance cameras that cover the entire bus loop and under the canopy. The cameras must offer a view of people getting on and off the school buses. Coordinate the location of security cameras with the CCSD Director of Facility Security.

Cafeteria or cafetorium

Access control

This room requires an access control door if there is an entrance from the exterior of the building.

Intrusion detection

This room requires a motion sensor and recessed door contacts (DPS) on all doors to the exterior of the building.

Surveillance

This room requires interior wall mount surveillance cameras every 60' and at a height of 8' AFF. Coordinate the location of security cameras with the CCSD Director of Facility Security.

Refer to page 19 for specific information regarding the kitchen and loading dock area.

Classrooms without exterior doors

Access control

This room does not require access control.

Intrusion detection

This room does not require intrusion detection.

Surveillance

This room requires installation of the conduit and mounting for an interior wall mounted camera in the event that there is a future request for a surveillance camera. Mount camera over entrance doorway facing into interior of the room.

Classrooms with exterior doors going to a playground

Access control

This room requires an access control door to the playground.

Intrusion detection

This room requires a motion sensor and recessed door contacts (DPS) on the door to the exterior of the building.

Surveillance

This room requires installation of the conduit and mounting for an interior wall mounted camera in the event that there is a future request for a surveillance camera. The camera location is over the entrance doorway and facing into interior of the room.

Conference rooms

Access control

This room does not require an access control door.

Intrusion detection

This room does not require intrusion detection.

Surveillance

This room does not require surveillance cameras.

Detention or suspension rooms

Access control

This room does not require an access control door.

Intrusion detection

This room does not require intrusion detection.

Surveillance

This room requires installation of an interior wall mounted surveillance camera over the entrance doorway and facing into interior of the room.

Exterior doors (other than the main entrance)

Access control

Doors from the exterior that allow entrance into the interior of the building require access control.

Intrusion detection

Exterior doors require a motion sensor and recessed door contacts (DPS).

Surveillance

Exterior doors do not require a surveillance camera unless otherwise specified.

Facility security rooms

Access control

All facility security rooms (FSRs) require an access control door. See Specific design requirements for the facility security room on page 24.

Intrusion detection

FSRs do not require intrusion detection.

Surveillance

All FSRs require an interior wall mounted surveillance camera on the inside of the room and facing the servers and other equipment.

Gymnasium and field house

Access control

This room requires access control if there is a door leading from the exterior into the interior of the building.

Intrusion detection

This room requires a motion sensor and recessed door contacts (DPS) on all doors to the exterior of the building.

Surveillance

This room requires interior wall mount surveillance cameras every 60' and at a height of 12'8" AFF.

Kitchen and loading dock

Access control

The kitchen requires an access control door to the loading dock. Verify requirements with the Director of Facility Security.

Intrusion detection

The kitchen requires a motion sensor and recessed door contacts (DPS) on all doors to the exterior of the building.

Surveillance

Both the kitchen and the loading dock area require surveillance cameras.

This area requires one exterior wall mount camera to view the exterior of the kitchen door, one to view the loading dock, and an interior wall mount camera inside the kitchen area.

Library or media center

Access control

The library does not require access control unless there is a door to the exterior.

Intrusion detection

The library does not require intrusion detection unless there is a door to the exterior.

Surveillance

The library requires interior wall mount cameras wherever necessary to enable surveillance.

Note: If there are obstructions to the surveillance cameras present, use ceiling mount cameras. When using ceiling mount cameras, ensure that there is the proper ceiling mount boxes, flex conduit, T-bar, and brackets for each camera. Coordinate the location of cameras with the CCSD/IT Project Manager.

Corridors, common areas, and courtyards

Access control

This area does not require an access control door unless there are doors to the exterior of the building.

Intrusion detection

This area does not require intrusion detection unless there are doors to the exterior of the building.

Surveillance

This area requires a series of interior wall mount surveillance cameras every 60' and at 8' AFF.

Note: If there are obstructions to the surveillance cameras present in the main corridors, use ceiling mount cameras. When using ceiling mount cameras, ensure that there is the proper ceiling mount boxes, flex conduit, T-bars, and brackets for each camera.

Main entrance and reception area

Access control

This area requires an access control door from the vestibule to the main lobby and from the vestibule to the reception area. See Specific design requirements for the main entrance and reception area on page 27.

Intrusion detection

The area requires motion sensors and recessed door contacts (DPS) on all doors to the exterior of the building. See Specific design requirements for the main entrance and reception area on page 27.

Surveillance

This area requires interior wall mount cameras. See Specific design requirements for the main entrance and reception area on page 27.

Parking lots

Access control

This area requires access control. Where possible, plan for access controlled gates to parking areas. Provide access control doors for entrances and exits adjoining the parking areas.

Intrusion detection

This area does not require intrusion detection.

Surveillance

This area requires exterior surveillance cameras. Review the design with the Director of Facility Security.

Perimeter fences

Access control

If there are gates, this area may require access control. Review the design with the Director of Facility Security.

Intrusion detection

This area does not require intrusion detection.

Surveillance

If there are gates, this area may require exterior surveillance cameras and underground conduit with pull string. Review with the Director of Facility Security.

Rolling doors

Access control

This door does not require access control.

Intrusion detection

This door requires intrusion detection.

Surveillance

This area may require a surveillance camera. Review the design with the Director of Facility Security.

Roof access hatch

Access control

This area does not require access control.

Intrusion detection

This area requires an addressable overhead door contact but does not require a motion sensor.

Surveillance

This area does not require a surveillance camera.

Stairways

Access control

This area requires access control for any doors that lead into the interior from the exterior of the building.

Intrusion detection

This area requires a motion sensor and recessed door contacts (DPS) for any doors that have access to the exterior of the building.

Surveillance

This area requires interior wall mount cameras at each landing at 8' AFF.

Note: If there are obstructions to the cameras present in the stairways, use interior ceiling mount cameras. When using ceiling mount cameras, ensure that there is the proper ceiling mounting box, flex conduit, T-bar, and brackets.

Telecommunication rooms

Access control

All main telecommunication rooms (MTRs) and intermediate telecommunication rooms (ITRs) require an access control door.

Intrusion detection

This type of room does not require intrusion detection.

Surveillance

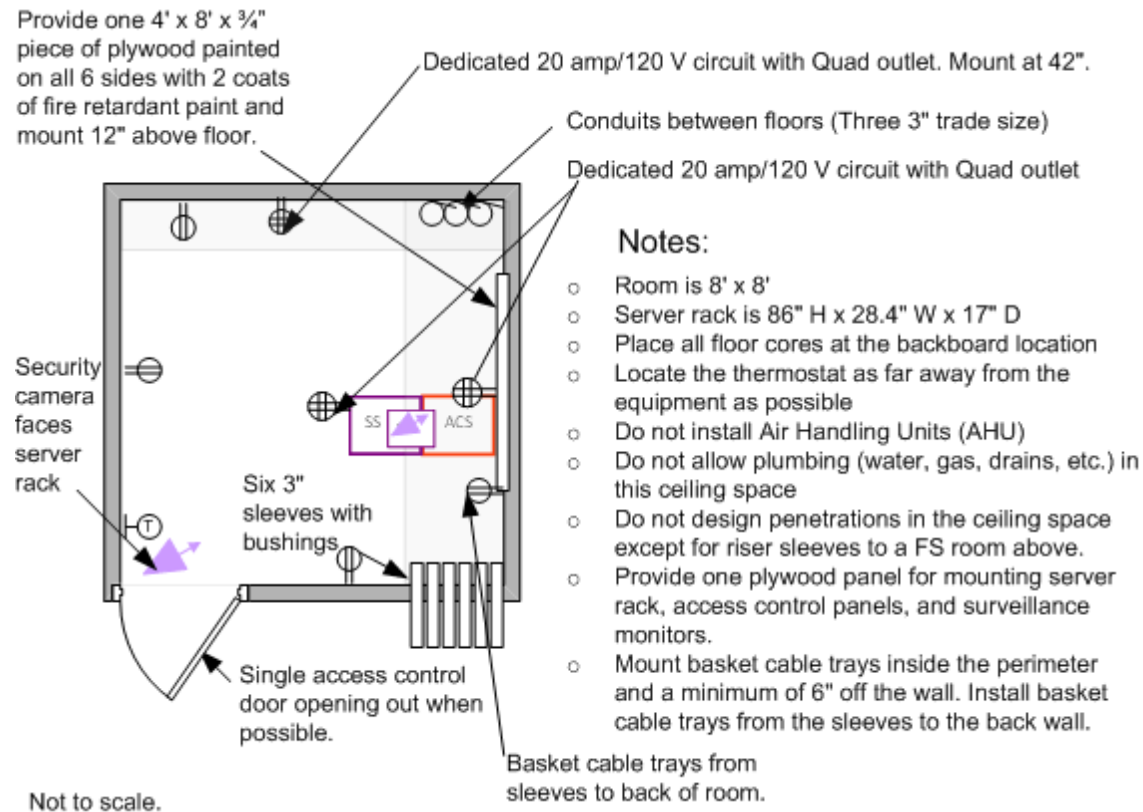
All MTRs and ITRS require a surveillance camera in the interior facing towards the equipment.

Specific design requirements for the facility security room

The Charleston County School District now requires a minimum of one Facility Security Room (FSR) for each new school, addition, or major renovation. The standard for determining the number of FSRs and the location of a FSR is the distance limit of 800' or less from the surveillance server rack to a camera. The main VistaKey panel belongs in the FSR.

Use the following specifications when designing an FSR.

- Provide an 8'x8' room with space for a NFR-84 security rack.
- Provide wall space for a piece of plywood 4'x8'x3/4" and mount vertically 12" AFF. Paint the plywood on all six sides with two coats of white fire retardant paint.
- Provide six 3" sleeves and conduit from the cable tray to the FSR server rack location. Provide basket cable trays from the sleeves to the back wall.
- Provide a 3/4" conduit with bushings and pull string from the main VistaKey panel to the main fire control panel. It requires a dedicated 110V circuit with an enclosed transformer and two telephone lines. Locate this panel inside the FSR at a height of 60" AFF.



FSR access control door

Use the following specifications for the FSR door.

- Provide an electrified strike, access control door with a proximity card reader at 42" centerline AFF near the door and on the exterior wall of the FSR. See general specifications on page 8.
- Key the door lock differently from the rest of the doors in the building.
- Provide a gasket or sweep to prevent water, wax, and dirt from entering the room.
- Place in the corner of the room to maximize the usable wall space when possible.
- Provide a door frame that is a minimum of 36"Wx80"H without a doorsill and hinged to open outward.

FSR HVAC

Use the following specifications for the FSR HVAC.

- Maintain a temperature equal to or less than 80 °F with 60% to 70% humidity.
- Do not use variable air volume devices.
- Design the FSR for an operating period of 24 hours a day and 7 days a week.

FSR ladder racks

- Use ladder racks to connect cable trays to the top of the equipment rack.
- Mount ladder racks a minimum of 3" off the wall to enable interconnection with each service.

Note: CCSD/IT contractors install the ladder racks.

FSR Power

Use the following specifications for the FSR power.

- Support power distribution using a building based transient voltage surge suppression (TVSS) system. Install a separate panel inside to feed only this room. The CCSD/IT Project Manager is responsible for approving the TVSS.
- Provide TVSS protection at each power panel in renovations that do not allow for a building based protection system.
- Provide one single receptacle at the rack location with one 120V circuit to feed this receptacle. Mount the receptacle next to the rack. Coordinate with CCSD/IT Project Manager for location and scheduling.
- Provide each rack location and server rack with two 4-plex receptacles, each on a dedicated 20-amp circuit. Mount receptacles on the rack. Coordinate with CCSD/IT Project Manager for location and scheduling.

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- Provide a minimum of one duplex receptacle on each wall for convenience outlets.
- Provide a grounding plate that bonds to the building ground.
- Provide support from the building's backup generator when possible.

FSR surveillance rack location

Locate the NFR-84 surveillance rack 4' from the wall.

FSR sign

Provide two signs, one with the letters FSR and the room number (example, FSR 1, FSR 2) and the other with the words, "Sensitive electronics. No storage allowed."

FSR surveillance camera

Provide an interior wall mounted surveillance camera facing the equipment inside the room. See general specifications on page 14.

Specific design requirements for the main entrance and reception area

Use the following specifications when designing the main entrance and reception area.

- Provide a set of exterior doors with recessed door contacts (DPS) and motion sensors.
- Provide a vestibule between the exterior and interior doors.
- Provide an access control door from the vestibule to the main corridor.
- Provide a visitor's entrance in the vestibule with an access control door to the reception area, interior wall mount camera, doorbell or buzzer, and remote control latch.
- Provide 3/4" conduit with bushings and pull string from the buzzer or doorbell to the cable tray.
- Provide a place in the reception area for surveillance monitors that only the office staff can view. **Note:** Typical surveillance monitors are 19". Every 56 cameras require one surveillance monitor. Provide necessary power and conduit for either desk or wall mounting.

Design specifications quick reference by location

Location	Access Control	Intrusion Detection	Surveillance
Auditorium or Theater	Yes—Exterior entrance/exit doors	Yes—Exterior entrance/exit doors	Yes*—Interior (prefer wall mount) cameras every 60'
Bathrooms	No	No	No—Corridor cameras must have line of sight to the outside of bathroom doors
Bookrooms, Storage Areas, and Workrooms (without exterior doors)	No	No	No
Bus Loop	Yes—Exterior entrance/exit doors	Yes—Exterior entrance/exit doors	Yes—View of all buses, entrance to bus loop doors, and under bus loop canopy
Cafeteria or Cafetorium	Yes—Exterior entrance/exit doors	Yes—Exterior entrance/exit doors	Yes*—Interior (prefer wall mount) cameras every 60' and at exit doors See Kitchens on page 19.
Classrooms (without exterior doors)	No	No	Yes*—Provide infrastructure for one interior wall mount camera facing the interior of classroom
Classrooms (with exterior doors going to an enclosed playground)	Yes	Yes	Yes*—Provide infrastructure for one interior wall mount camera facing the interior of classroom
Classrooms (with exterior doors going to an open playground)	Yes	Yes	Yes*—Provide infrastructure for one interior wall mount camera facing the interior of classroom
Computer Labs	No	No	Yes*—Provide conduit with bushings and pull string and power for one interior wall mount camera facing the interior of classroom
Detention or Suspension rooms	No	No	Yes*—One interior wall mount camera facing the interior of the room
Exterior doors—Entrance (other than main entrance)	Yes	Yes	Yes*—One interior wall mount camera over the access controlled door

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Location	Access Control	Intrusion Detection	Surveillance
Exterior doors—Exit only (other than main entrance)	No	Yes	Yes*—One interior wall mount camera
FSR	Yes	No	Yes—One interior wall mount camera facing equipment
Gymnasium	Yes	Yes	Yes*—One interior wall mount camera every 60' at 12'8" AFF
Kitchen and Loading Dock	Yes Backdoor	Yes Backdoor	Yes—Exterior cameras facing the loading dock and the entrance to the back door and one interior wall mount camera* facing into kitchen
Library or Media Center	No	No	Yes*—Interior wall mount cameras. Coordinate with CCSD IT Project Manager'
Corridors, Common Areas, and Courtyards	No	No	Yes*—One interior wall mount camera every 60' and 8' AFF
Main Entrance and Reception Area	Yes	Yes	Yes—Refer to the Main entrance and reception area surveillance section on page 21.
Offices	No	No	Yes/No—Provide surveillance monitors upon request. Coordinate surveillance requirements with the CCSD/IT Project Manager and the Director of Facility Security.
Parking Lots	Yes	Yes	Yes—Verify design requirements with the Director of Facility Security.
Perimeter Fence	No	No	Yes—Verify design requirements with the Director of Facility Security.
Rolling Doors to the Exterior	No	Yes	Yes—Verify design requirements with the Director of Facility Security. .
Roof Access Hatch	No	Yes— Overhead electrified contact	No
Stairways	Yes—When there is an exit to the exterior	Yes	Yes*—One interior wall mount camera at each landing

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Location	Access Control	Intrusion Detection	Surveillance
Telecommunication Rooms	Yes	No	Yes*—One interior wall mount camera facing equipment

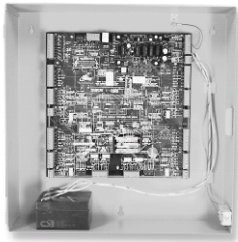
*Whenever possible, use interior wall mount cameras at a height of 8' AFF. Be aware of and plan around interior structures that can obstruct the camera view. If you must use a ceiling mount, refer to the general specifications on ceiling mount surveillance cameras on page 14.

Equipment types and descriptions

In most cases, other vendors provide and install the equipment in this section. This section is for reference purposes only.

Access control panel

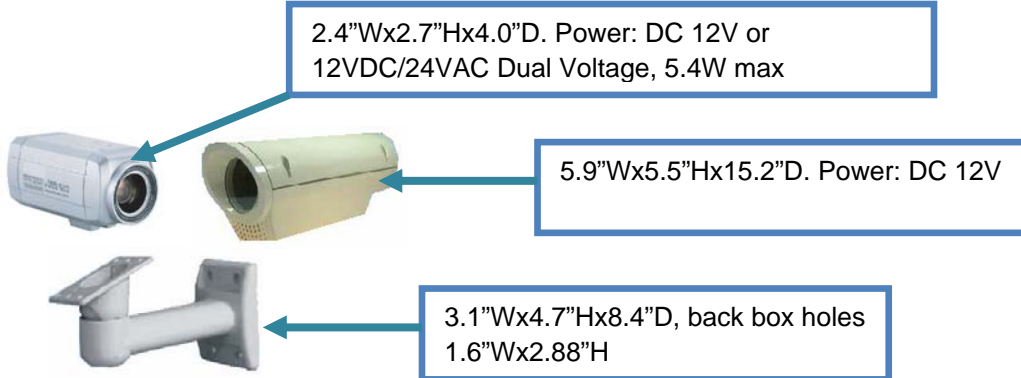
This is an example of an access control panel. Locate in a secure area. This panel controls and powers a maximum of four proximity card readers. Provide 1" conduit with bushings and pull string from the cable tray to the panel. Maximum length from the panel to the door it controls is 1,000'. Provide 1" conduit with bushings and pull string from the access panel to the cable tray inside the security room. Other vendors supply and install this equipment.



16.25"Hx16.4"Wx4.2"D. Power: Input power: 24 VAC @40 VA. Battery backup: 24 VAC (batteries included)

Camera, exterior waterproof

This is an example of the exterior camera and mounting. Locate on the exterior walls at a height of up to 16' AFG and for best surveillance of the exterior of buildings, playgrounds, and parking lots. Requires 3/4" PVC conduit with bushings and pull string stubbed to the exterior walls and a single gang back box. Maximum distance from a camera to a surveillance server is 800'. Other vendors supply and install this equipment.



2.4"Wx2.7"Hx4.0"D. Power: DC 12V or 12VDC/24VAC Dual Voltage, 5.4W max

5.9"Wx5.5"Hx15.2"D. Power: DC 12V

3.1"Wx4.7"Hx8.4"D, back box holes 1.6"Wx2.88"H

Camera, interior

Locate in the interior of the buildings. It requires 3/4" conduit with bushings and pull string from the camera to the cable tray and mounts over a double gang junction box with a single gang plaster ring. Maximum distance from a camera to a surveillance server is 800'. For ceiling mount interior cameras, provide a back box with 5' flex conduit and T-bar mounting. Other vendors supply and install this equipment.



4.6"Wx3.0"H. Power: DC12V/AC24V,
180mA Max

Door, electrified rim device

This is an example of an electrified RIM device. Use this type of door in the vestibule going to the main corridor and on doors to the exterior of the building. Provide 1/2" conduit with bushings and pull string from the door's power supply to the electronic door hinge feed thru. Provide a hex dogging device. Door hardware vendors supply this item and general contractors provide installation.



Door, electrified strike

This is an example of an electrified strike device. Use this type of door in TRs, FSRs, and Visitors entrance. Supply 1/2" EMT conduit with bushings and pull string from the single gang junction box above the ceiling to the door strike plate. Door hardware vendors supply this item and general contractors provide installation.



Door position switch or recessed door contact

This is an example of a DPS or recessed door contact. The DPS requires 3/4" conduit with bushings and pull string from the DPS box to the cable tray. Other vendors supply and install this equipment.



FSR server rack

This is an example of the surveillance and access monitoring server rack. The dimensions are 86"Hx 28.4"Wx17"D. It requires two 5-20R quad receptacles with dedicated 20-amp circuits. Allow 4' clearance from wall in the FSR. Use NFR-84 type racks. Other vendors supply and install this item.



Motion sensor

These are examples of motion sensors. Locate in the interior and no more than 10' away from exterior doors. Mount ceiling motion sensors at a height of 7'. Other vendors supply and install this equipment.



Overhead door contact

This is an example of an overhead door contact. Locate on roof access hatch. It has an aluminum housing and adjustable L bracket type magnet. The standard gap is 2". It requires 3/4" conduit with bushings and pull string to the cable tray. Other vendors supply and install this equipment.



Polling loop extender module

This is an example of the polling loop extender module. Provide one module for every 60 intrusion detection devices. Provide 110V outlet with its own transformer and 3/4" conduit with bushings and pull string to the cable tray. Other vendors supply this item.



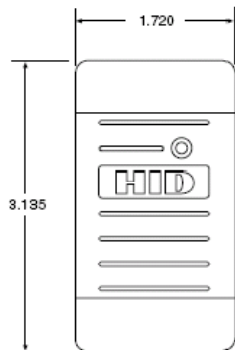
Power supply

This is an example of the power supply. Locate above the ceiling for card reader, electrified RIM device, and 120V power connect. Verify that the power supply is sufficient for the device it powers. Door hardware suppliers and general contractors provide and install the power supply.



Proximity card reader

This is an example of the proximity card reader. Locate card reader next to an access control door at a height of 42" centerline AFF or AFG. Provide 3/4" conduit with bushings and pull string from the card reader to a double gang box with a single gang plaster ring on the exterior wall of room or building. For exterior card readers, provide a weatherproof faceplate. Other vendors supply and install the card reader and cards.



Recessed junction boxes

This is an example of a recessed junction box. Locate recessed junction boxes no further than 18” away from the device requiring power. Mount in hallways at 12” below drop ceilings, in stairwells at 8’ AFF, and in gyms at 12’8” AFF. General contractors, electrical contractors supply and install recessed junction boxes.



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