**Introduction**

This document contains design and specification considerations that must be adhered to by the designing Architect/Engineer (A/E) and all consultants involved in the design process.

Variance from these design standards and considerations can be requested by Architect/Engineer and will be reviewed by ACCS. If variance is approved, a copy of the variance will be inserted into the design documents project manual.

Recommendations for changes to this document are welcome and can be submitted to ACCS. The recommendation is reviewed by ACCS and if accepted will be incorporated into this document.

**Document Organization**

This document is currently organized by General Instructions to A/E, Space Types, and ASTM Uniformat II. Some instructions are intentionally repeated in several sections to ensure they are easily referenced and followed.

**Document Purpose**

The purpose of the document is to provide the design professionals with minimum standards for designing facilities owned by the Alabama Community College System. These standards apply to all facilities owned and/or leased by the Alabama Community College System. Leased facilities that are not owned by the Alabama Community College System may not be subject to the standards required in this document. Variance from these standards requires written approval from the Alabama Community College System’s Facilities Division.

**Building Code**: Refer to the ACCS Construction Manual of Procedures.

**Design**

* Exterior Aesthetic: Prior to beginning schematic design for a project, Design Professionals shall study the existing architecture and overall planning of campus infrastructure and elements to establish design parameters for the specific project. These parameters shall be discussed with the College and ACCS Facilities Division prior to starting any design.

Campus Architecture in the Alabama Community College System varies from college to college and campus to campus. College Presidents are required to develop a vision for what the image and character of their College’s campuses should be. Design Professionals are encouraged to help the President and College realize and refine this vision in every project they engage in. Design professionals shall evaluate nearby campus features and existing facilities scale, proportions, materials, height, etc. to ensure that a new or renovated building does not alienate itself from the rest of the campus.

All conceptual designs and associated design narratives shall be approved by the ACCS Facilities Division prior to progressing into the schematic, preliminary and/or final design stages of a project.

Design Professionals shall be responsible for ensuring that exterior materials and features are easy to maintain, repair and/or replace. Overly designed, customized spaces that contain rare materials and/or equipment should be avoided.

* Interior Aesthetic: Colleges need to have the interiors of their facilities designed to meet the program needs of their students, faculty, and staff. The interior aesthetic of a space will meet the desires of the College and President. Design Professionals are, again, encouraged to help the President and College realize and refine their ideas in every project they engage in.

Design Professionals shall be responsible for ensuring that interior designs and associated FF&E are easy to maintain, repair and/or replace. Overly designed, customized spaces that contain rare materials and/or equipment should be avoided.

**Budgeting and Construction Cost Estimates**

* The selected Design Professional will include all relevant construction costs in the budgeting process. ALL costs shall be taken into consideration, including direct purchases.
	+ Information Technology/data equipment, furniture, soil reports, surveys, construction testing, landscaping, interior and exterior trash receptacles, hand dryers, interior and exterior signage, carpet, lock, and keying core allowance etc.… Design Professionals shall designate each item as one of the following:
		- Contractor Furnished; Contractor Installed (CFCI)
		- Contractor Furnished; Owner Installed (CFOI)
		- Owner Furnished; Contractor Installed (OFCI)
		- Owner Furnished; Owner Installed (OFOI)
	+ The costs and designated responsibilities of items listed above shall be reviewed and coordinated with the College and ACCS Facilities Division for final approval.

**Drawings and Specifications**

* Electronic Copies: Design Professional will provide pdf copies of all bid documents, drawings and specifications to the Owner immediately following approval of successful bid. Following the notice of completion of the project the A/E will provide an electronic copy of the floor plans including all changes that took place during construction. The drawings will include at minimum, the floor plans with room numbers, the door and window locations, roof plans and exterior elevations of the building submitted in AutoCAD format. It will also include the location of all mechanical and electrical equipment.
* Equipment Specifications: Design Professional is only to specify equipment with replacement parts distributed in North America. This instruction is for all types and categories of equipment specified. If any part of the equipment is not commonly distributed in North America, it is not to be specified.
* Room Numbers: At the completion of design development drawings, the architect will submit an electronic copy of the floor plans. The Design Professional will develop room numbers based on requirements from College. The owner assigned room numbers will be printed on all “for construction” documents to ensure proper labeling of electrical panels, fire alarm system, HVAC controls, key/lock inventory and so forth. These numbers will also be used for room number signs to be furnished and installed by the owner prior to the final punch list being completed.
* **APROVALS and ACCEPTANCE**: Before project bidding at a minimum the following must approve and sign off on specifications and drawings to ensure proper design and adherence to Instructions.
	+ ACCS Regional Project & Facilities Director

**Space Type**

This section contains instructions and considerations of design of specific space types. Definition of these space types is provided by the Postsecondary Education Facilities Inventory and Classification Manual – May 2006 (FICM Manual). Standards for these space types are found after the definition.

**Space Definitions**

**Gross Area** – The total floor area of the structure within the outside faces of the exterior walls.

**Net Assignable Area** – The sum of all areas on all floors of a building assigned to, or available for assignment to, as occupant or use, excluding spaces defined as building service, circulation, mechanical, and structural areas. This is also referred to as Net Assignable Square Feet (NASF).

**Space Type Standards**

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| **Administrative Space Planning** |
| **Room Type** | **Area** (NASF) | **Commentary** |
| President's Office | 275-325 |   |
| Dean and Vice-President Office | 200-250 |   |
| Director/Department Head Office | 140-160 |   |
| Faculty Office | 100-120 |   |
| Adjunct Faculty Offices | 64-80 |   |
| Faculty workstations (FF&E) | 32-64 |   |
| Adjunct Faculty workstations (FF&E) | 32-64 |   |
| Flex/Shared workstations (FF&E) | 32-64 |   |
| Conference/Meeting Room |  N/A  | Area dictated by required number of occupants. |

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| **Auxiliary Space Planning** |
| **Room Type** | **Area** (Maximum) | **Commentary** |
| Primary Custodial Closet | 100-130 | Include mop sink; Storage for custodial cart, vacuum, supplies, mops, brooms, etc.; mop racks must hang over sinks. |
| Secondary Custodial Closet | 48-64 | Storage for supplies |
| IT/Telecom (Main Distribution Frame) | 64-100 | Painted plywood walls for mounting equip; Climate controlled. |
| IT/Telecom (Intermediate Distribution Frame) | 32-48 | Painted plywood walls for mounting equip; room must be well ventilated to climate-controlled space or climate controlled itself. |
| AV Closet | 10-32 | Wall or floor mounted cabinets also permitted |
| Break Rooms | Size varies based on end-user needs. Shared usage among multiple departments encouraged. | Include utilities connections for refrigerators, sinks, coffee makers and microwaves. Dishwashers and garbage disposals are not recommended.  |
|  Work Rooms | Size varies based on end-user needs. Shared usage among multiple departments encouraged. **When possible, share with break room.** | Include power and data connections for printer/copiers. When necessary incorporate sending/receiving for mail. Include millwork/casework for paper storage and office supplies. |

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| **General Classroom Space Planning** |
| **Room Type** | **Area** (Maximum) | **Commentary** |
| General Education Classroom | Determined by desired seat count. | Review needs of space with College. General classrooms should accommodate a wide variety of teaching formats to ensure maximum utilization. |
| Science Wet Lab  | Determined by desired seat count. | Fume hoods shall have the ability to be turned on/off while allowing the lab to still function. Fume hoods should be designed in a manner that noise created by its use does not disrupt other activities in the building.  |
| Science Dry Lab | Determined by desired seat count. | Same as general education classroom, but with adequate secure storage to lab supplies and equipment. |
| Student Group Study Rooms | Area varies. Sized for 4-8 people. | Provide space for no less than 4 (four) occupants. Connections: TV monitors and Wi-Fi required.  |
| Student Study Stations (FF&E) | Determined by desired seat count. | Power connections for task lighting, personal devices required. Coordinate with furniture supplier to ensure connections are located correctly. (laptops, tablets, cell phones, etc.) |

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| **Workforce Space Planning** |
| **Room Type** | **Area** (Recommended) | **Commentary** |
| Drafting/Parametric Design/Graphic Design/Computer Labs |   |   |
| Cosmetology  |   |   |
| Construction - HVAC Training |   |   |
| Construction - Electrical Training |   |   |
| Construction - Construction Trades / Construction Sciences |   |   |
| Construction - Marine Technology |   |   |
| Construction - Welding |   |   |
| Construction - Masonry |   |   |
| Health Science - Nursing  |   |   |
| Health Science - Emergency Medical Services |   |   |
| Health Science - Physical Therapy  |   |   |
| Health Science - Veterinary Technician |   |   |
| Child Development |   |   |
| Mechatronics/Industrial Electronics |   |   |
| Advanced Composites |   |   |
| Airframe Mechanics and Aircraft Maintenance Technology |   |   |
| Automotive - Diesel Mechanics |   |   |
| Automotive - General Mechanics |   |   |
| Automotive - Autobody Repair |   |   |
| Horticulture/Turf management |   |   |
| Forestry  |   |   |
| Commercial Driving License (CDL)/Heavy Machinery Training |   |   |
| Lineman Training |   |   |
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**Classroom** – A room or space primarily used for scheduled instruction and that is not tied to a specific subject or discipline by equipment in the room or the configuration of the space.

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| **Classroom** |
| **Technology** |
| Provide lectern station/instruction desk with power, a/v control access to monitors and projectors.  |
| Provide a/v wall mounted cabinet or closet to serve the classroom technology needs.  |
| All Classrooms are required to have magnetic dry eraser whiteboards. |
| All Classrooms are required to have access to Wi-Fi. |
| All Classrooms are required to have tv monitor and/or projection systems. TV Monitor or Smart Board system preferred by ACCS.  |
| All Classrooms are required to be equipped with infrastructure to install wall mounted tv monitor, pan tilt zoom camera and projection system. (i.e., wall blocking, power, HDMI, coax, CAT 6, etc.) |
| Review supplemental requirements with college president and/or Owner’s Designated Rep. |
| **Windows** |
| Any classroom with windows shall have dual roller window screens with solar and blackout treatment. Treatments are permitted to be manual or motorized. If motorized, all windows should be controlled with one switch or zoned in a manner that an instructor can operate intuitively. |
| **Lighting** |
| Lighting controls - All classrooms shall have dimmable, zoned controls to allow the classroom to be dimmed from front of the class to the rear of the class. Lighting controls are required to be preset with no more than 3 dimmable zones. Two zones preferred. Zones shall be approved by the college.  |
| Light fixtures: 2x4 or 2x2 LED (special classrooms identified by College may supplement lighting with LED down lights and LED cove lighting.) |
| Lighting Color Temp: 3500  |
| Lighting Foot Candle: Average maintained level of 40 FC minimum. No area shall be less than 30 FC.  |
| **Finishes** |
| Carpet Tile or LVT; Carpet tile recommended.  |
| Base: 4” Rubber  |
| Wall: Gypsum board; painted (satin) |
| Ceiling: 2x2 Acoustical Ceiling Tile |
| **Access Control/Hardware** |
| Doors: Solid Wood w/ accessible viewing glass lite |
| Hardware: Mortise cylinder Lock – classroom lockset (equal to ASSA ABLOY) |
| Frame: Hollow Metal Frame |

**Laboratory** – A space characterized by special purpose equipment or a specific configuration that limits instructional or research activities to a particular discipline or a closely related group of disciplines.

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| **Laboratory** |
| **Technology** |
| Provide lectern station/instruction desk with power, a/v control access to monitors and projectors.  |
| Provide a/v wall mounted cabinet or closet to serve the classroom technology needs.  |
| All Labs are required to have magnetic dry eraser whiteboards. |
| All Labs are required to have access to Wi-Fi. |
| All Labs are required to have tv monitor and/or projection systems. TV Monitor or Smart Board system preferred by ACCS.  |
| All Labs are required to be equipped with infrastructure to install wall mounted tv monitor, pan tilt zoom camera and projection system. (i.e., wall blocking, power, HDMI, coax, CAT 6 etc.) |
| Review supplemental requirements with college president and/or Owner’s Designated Rep. |
| **Fume Hoods (Chemistry Labs)** |
| Facilities make-up air and exhaust should be able function independently of a fume hoods operation. Fume hoods shall have the ability to be switched on and off by the College end-user.  |
| Sounds generated by fume-hood operations shall be isolated from the lab they are operated in. |
| **Plumbing** |
| Provide sinks. Each station or only one location |
| Gas |
| Floor drains |
| Eye wash/showers |
| **Windows** |
| Any classroom with windows shall have dual roller window screens with solar and blackout treatment. Treatments are permitted to be manual or motorized. If motorized, all windows should be controlled with one switch or zoned in a manner that an instructor can operate intuitively. |
| **Lighting** |
| Lighting controls - All classrooms shall have dimmable, zoned controls to allow the classroom to be dimmed from front of the class to the rear of the class. Lighting controls are required to be preset with no more than 3 dimmable zones. Two zones preferred. Zones shall be approved by the college.  |
| Light fixtures: 2x4 or 2x2 LED (special classrooms identified by College may supplement lighting with LED down lights and LED cove lighting.) |
| Lighting Color Temp: 3500  |
| Lighting Foot Candle: Average maintained level of 40 FC minimum. No area shall be less than 30 FC.  |
| **Finishes** |
| Epoxy, Stained/sealed concrete or LVT  |
| Base: Epoxy or 4” Rubber  |
| Wall: Gypsum board; painted (satin) |
| Ceiling: 2x2 Acoustical Ceiling Tile |
| **Access Control/Hardware** |
| Doors: Solid Wood w/ accessible viewing glass lite |
| Hardware: Mortise cylinder Lock – classroom lockset (equal to ASSA ABLOY) |
| Frame: Hollow Metal Frame |
| **Computer Lab** |
| When utilizing a multipurpose space to accommodate a computer lab, it is recommended to line 3 walls with power and network drops using standard computer tables with cable management.  |
| In the middle of this lab, it is recommended to use active learning tables (have wheels and can be configured in a variety of ways) ideally with 4 locations of power access in the floor.  |
| Depending on the size of the space, the Audio Visual may need multiple displays in addition to the front of the room which will need ceiling power and two network drops. |

**Office** – A space housing faculty, staff, or students working at one or more desks, tables, or workstations.

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| **Office** |
| **Technology** |
| Office Space Standards |
| Offices are required to have access to Wi-Fi. |
| All Offices are required to be equipped with infrastructure to install computers, telephones, and printers/scanners/copiers. (i.e., CAT 6 and power) |
| Review supplemental requirements with college president and/or Owner’s Designated Representative. |
| **Windows** |
| Any office with windows shall have roller window screens with solar treatment. Manual treatments only.  |
| **Lighting** |
| Light fixtures: 2x4 or 2x2 LED  |
| Lighting Color Temp: 3500  |
| Lighting Foot Candle: Average maintained level of 40 FC minimum. No specific area shall be less than 30 FC. |
| **Finishes** |
| Carpet Tile or LVT |
| Base: 4” Rubber  |
| Wall: Gypsum board; painted (satin) |
| Ceiling: 2x2 Acoustical Ceiling Tile |
| **Access Control/Hardware** |
| Doors: Solid Wood w/ full glass lite |
| Hardware: Mortise cylinder Lock – Entry lockset (equal to ASSA ABLOY) |
| Frame: Hollow Metal Frame |

**Study Space** –

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| **Study** |
| **Technology** |
| All Study rooms are required to have access to Wi-Fi. |
| All Study rooms are required to be equipped with infrastructure to install telephones, TV Monitors/Smart board, and laptop computers. (i.e., wall blocking, CAT 6, and power) |
| Review supplemental requirements with college president and/or Owner’s Designated Representative. |
| **Windows** |
| Any office with windows shall have roller window screens with solar treatment. Manual treatments only.  |
| **Lighting** |
| Light fixtures: 2x4 or 2x2 LED  |
| Lighting Color Temp: 3500  |
| Lighting Foot Candle: Average maintained level of 40 FC minimum. No specific A room or area shall be less than 30 FC. used by individuals to study at their convenience, the space not being restricted to a particular subject or discipline by contained equipment. |
| **Finishes** |
| Carpet Tile or LVT |
| Base: 4” Rubber  |
| Wall: Gypsum board; painted (satin) |
| Ceiling: 2x2 Acoustical Ceiling Tile |
| **Access Control/Hardware** |
| Doors: Solid Wood w/ full glass lite |
| Hardware: Mortise cylinder Lock – Entry lockset (equal to ASSA ABLOY) |
| Frame: Hollow Metal Frame |

**Special Use Space** – A space that is sufficiently specialized in its primary activity or function and may provide service to other areas, but its special use or configuration dictates that this area (military training, athletic activity, media production, clinical activities, demonstration, agricultural field activities, and animal and plant shelters) not be coded as a service space.

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| **Special Use** |
| **Technology** |
| All Special use spaces are required to have access to Wi-Fi. |
| Review supplemental requirements with college president and/or Owner’s Designated Representative. |
| **Windows** |
| Any classroom with windows shall have dual roller window screens with solar and blackout treatment. Treatments are permitted to be manual or motorized. If motorized, all windows should be controlled with one switch or zoned in a manner that an instructor can operate intuitively.  |
| **Lighting** |
| Light fixtures: 2x4 or 2x2 LED (special classrooms identified by College may supplement lighting with LED down lights and LED cove lighting.) |
| Lighting Color Temp: 3500-5000 (review with College president and/or Owner’s Designated Representative to meet special use space needs.) |
| Lighting Foot Candle: Refer to the IEC (Illuminating Engineering Society) Footcandle chart for guidance.  |
| **Finishes** |
| Review with College president and/or Owner’s Designated Representative to meet special use space needs. |
| **Access Control/Hardware** |
| Doors: Review with College president and/or Owner’s Designated Representative to meet special use space needs. |
| Hardware: Review with College president and/or Owner’s Designated Representative to meet special use space needs. |
| Frame: Hollow Metal Frame |

**General Use Space** – A space that is characterized by a broader availability to faculty, staff, students, or the public and comprise a campus general service or functional support system (assembly, exhibition, dining, relaxation, merchandising, recreation, general meetings, day care) for the institutional and participant community populations.

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| **General Use** |
| **Technology** |
| All general use spaces are required to have access to Wi-Fi. |
| Review supplemental requirements with college president and/or Owner’s Designated Representative. |
| **Windows** |
| Any classroom with windows shall have dual roller window screens with solar and blackout treatment. Treatments are permitted to be manual or motorized. If motorized, all windows should be controlled with one switch or zoned in a manner that an instructor can operate intuitively. |
| **Lighting** |
| Light fixtures: 2x4 or 2x2 LED (special classrooms identified by College may supplement lighting with LED down lights and LED cove lighting.) |
| Lighting Color Temp: 3500-5000 (review with College president and/or Owner’s Designated Representative to meet special use space needs.) |
| Lighting Foot Candle: Refer to the IEC (Illuminating Engineering Society) Footcandle chart for guidance.  |
| **Finishes** |
| Review with College president and/or Owner’s Designated Representative to meet general use space needs. |
| **Access Control/Hardware** |
| Doors: Review with College president and/or Owner’s Designated Representative to meet general use space needs. |
| Hardware: Review with College president and/or Owner’s Designated Representative to meet general use space needs. |
| Frame: Hollow Metal Frame |

**Support Space** (**Information Technology/Telecommunications)** – The Main Distribution Frame (MDF) is the central point of the network, where all network cables converge. The Intermediate Distribution Frame (IDF) is a secondary point that provides connectivity between the MDF, and the devices located on each floor of a building or in a specific area. A centralized space for various auxiliary indirect support systems and services that help keep all institutional programs and activities operational (data processing, telecommunications, shop services, general storage and supply, vehicle storage, printing, shipping, and receiving, laundry and hazardous material areas).

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| **Support** |
| **Technology** |
| All MDF and IDF rooms are required to have access to Wi-Fi. |
| All MDF rooms shall provide no less than (1) 4-inch schedule 40 PVC conduit from the appropriate manhole/handhole to the building MDF room.  |
| Review supplemental requirements with college president, College IT Director, Regional ACCS IT Director and Owner’s Designated Representative. |
| **Windows** |
| Not recommended. |
| **Lighting** |
| Light fixtures: 2x4 or 2x2 LED  |
| Lighting Color Temp: 3500  |
| Lighting Foot Candle: Average maintained level of 40 FC minimum. No specific area shall be less than 30 FC. |
| **Mechanical** |
| Climate control: MDF and IDF rooms are required to be climate controlled.  |
| **Finishes** |
| Floor: Concrete |
| Base: None |
| Wall: Plywood; painted |
| Ceiling: None |
| **Access Control/Hardware** |
| Doors: Solid Wood  |
| Hardware: Mortise cylinder Lock – Entry lockset (equal to ASSA ABLOY) |
| Frame: Hollow Metal Frame |

**Health Care Space** – Patient care areas that are in separately organized and budgeted human and animal health care areas (student infirmaries and centers, teaching hospitals, clinics, and veterinary and medical schools) that may also house areas that are classified under different classification codes.

* Section not in use.

**Residential Space** – Housing for students, faculty, staff, and visitors to the institution (some spaces within residential facilities might have different codes like libraries, lounges, study rooms, dining areas and recreation rooms).

* Section not in use.

**Unclassified Space** –

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| **Unclassified** |
| **Storage** |
| Dead space, wherever possible, should be developed for storage. |
| **Windows** |
| Not recommended. |
| **Lighting** |
| Light fixtures: 2x4 Assignable areas that are inactive or 2x2 LED  |
| Lighting Color Temp: 3500  |
| Lighting Foot Candle: Average maintained level unassigned; in the process of 40 FC minimum. No specific area shall be less than 30 FC. being altered, renovated, or converted, or in an unfinished state. |
| **Finishes** |
| Floor: Concrete |
| Base: None |
| Wall: Gypsum; painted |
| Ceiling: 2x2 Acoustical Ceiling Tile |
| **Access Control/Hardware** |
| Doors: Solid Wood |
| Hardware: Mortise cylinder Lock – Entry lockset (equal to ASSA ABLOY) |
| Frame: Hollow Metal Frame |

**Building Service Space** – Areas of a building used for custodial supplies, janitorial sink rooms, janitorial closets, and public restrooms.

* Custodial Facilities: These rooms will not in any case be shared with mechanical, electrical, or communication spaces.

Custodial closets will all be furnished with a floor sink in the back corner. with splash guard panels protecting the walls surrounding the sink.

Custodial closets will be found on each floor of a building and at least one will have sufficient space to accommodate large equipment and storage of housekeeping supplies. The minimum dimensions for “Primary Custodial Closet” shall be 9'-4" deep by 7'-4" wide.

**Restrooms** –

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| **Restrooms** |
| **Technology** |
| All Restrooms are required to have access to Wi-Fi. |
| **Windows** |
| Windows shall have obscure glazing. |
| **Lighting** |
| Light fixtures: 2x4 or 2x2 LED  |
| Lighting Color Temp: 3500  |
| Lighting Foot Candle: Average maintained level of 40 FC minimum. No specific area shall be less than 30 FC.  |
| **Finishes** |
| Floor: Porcelain tile  |
| Base: Porcelain tile |
| Wall: Porcelain tile preferred. 48” tall porcelain tile wainscot on wet walls with painted, moisture resistant gypsum board is also acceptable.  |
| Ceiling: 2x2 Acoustical Ceiling Tile |
| **Access Control/Hardware** |
| Doors: Solid Wood |
| Hardware: Push/pull entry with door closer  |
| Frame: Hollow Metal Frame |
| Toilet Partitions: Stainless steel or Solid Plastic |
| **Plumbing** |
| Wall mounted, tankless toilets only, exception urinals) |
| Flush valves only |
| Touch free fixtures or manual fixtures are permitted. Battery operated fixtures are prohibited.  |
| No slope floor w/ floor drains. Trap primers required. |
| **Dispensers** |
| Toilet Paper Dispensers: FF&E item. Located on drawings by Design Professional. (OFCI)  |
| Soap Dispensers: FF&E item. Located on drawings by Design Professional. (OFCI) |
| Paper Towel Dispensers: FF&E item. Located on drawings by Design Professional. (OFCI) |
| Air Hand Dryer: Provide at request of college. Battery operated prohibited, High velocity hand dryers only. Acceptable manufacturers: Dyson, Saniflow and Xlerator.  |

**Circulation Space** – Areas of a building required for physical access to some subdivision of space, whether physically bounded by partitions or not.

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| **Circulation** |
| **Technology** |
| All corridors are required to have access to Wi-Fi. |
| **Corridors** |
| Special consideration should be given to durability of walls in corridors and on columns. Corner guards are required on all outside corners.  |
| **Lighting** |
| Light fixtures: 2x4 or 2x2 LED (specific corridors identified by College may supplement lighting with LED down lights and LED cove lighting.) |
| Lighting Color Temp: 3500 (review with College president and/or Owner’s Designated Representative to meet special use space needs.) |
| Lighting Foot Candle: 40 FC Minimum. Refer to the IEC (Illuminating Engineering Society) Footcandle chart for guidance. |
| **Finishes** |
| Review with College president and/or Owner’s Designated Representative to meet circulation space needs. |

**Mechanical/Electrical Rooms** – **Space** – Areas of a building designed to house mechanical equipment, utility services, and shaft areas.

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| **Mechanical/Electrical**  |
| **Technology** |
| All Mechanical and Electrical rooms are required to have access to Wi-Fi. |
| **Lighting** |
| Light fixtures: 2x4 or 2x2 LED  |
| Lighting Color Temp: 3500  |
| Lighting Foot Candle: Average maintained level of 40 FC minimum. No specific area shall be less than 30 FC. |
| **Finishes** |
| Floor: Sealed Concrete or epoxy  |
| Base: None or epoxy |
| Wall: Concrete block or impact/moisture resistant gypsum; painted  |
| Ceiling: None |
| **Access Control/Hardware** |
| Doors: Solid Wood; Exterior painted steel.  |
| Hardware: Mortise cylinder Lock – Storeroom lockset (equal to ASSA ABLOY |
| Frame: Hollow Metal Frame |

**ASTM Uniformat II**

This section includes standards and considerations of building systems & components organized by Uniformat II. Additional sections were added for use by ACCS.

**A: Substructure**

**A10: Foundations**

A1010 : Standard Foundations

A1020 : Special Foundations

A1030 : Slab on Grade

**A20: Basement Construction**

A2010 : Basement Excavation

A2020 : Basement Walls

**B: Shell**

**B10: Superstructure**

B1010 : Floor Construction

B1020 : Roof Construction

**B20: Exterior Enclosure**

* Silicone: Silicone joint sealants are recommended for exteriors. The best solution is the recommendation from manufacturers of their products (vinyl windows, brick, etc.).

B2010 : Exterior Walls

* Brick: Design Professional to provide 3 or 4 brick selections, Owner will pick the color and brick.
* Colors: Architect must provide a color board of all finishes and have them approved by the College prior to the purchase of any finishes. The owner shall be provided with a mockup.

B2020 : Exterior Windows

* Windows: Aluminum windows will have exposed mullions, will be double hung
* Window Maintenance: Provision will be made to wash all windows in the project without the expense of scaffolding or ladders. Windows should be energy efficient. When determining window placement, consideration should be given to the location of the sun to reduce the heating load on the building.

B2030 : Exterior Doors

* Doors: The interior of the door will have aluminum kick plates along the bottom.
* Closers: Closers will need to be properly sized to accommodate the size, weight, and use of the door.
* Locks: Locks must be compatible to accept College cores.
* Panic Devices: Panic devices are to be Von Duprin devices or approved equal. When a panic device is included on a door it must be externally mounted.

**B30: Roofing**

B3010 : Roof Coverings

* TPO (Thermoplastic Polyolefin) roofing is prohibited.
* Gutters: will be continuous and be covered sufficiently to allow water to enter but prevent leaves from entering.
* Internal gutters and roof drains are prohibited.

B3020 : Roof Openings/ Access

* All roofing systems must provide secured access to the roof from the interior or exterior of the building.

**C: Interiors**

* Colors: Architect must provide a color board of all finishes and have them approved by the College prior to the purchase of any finishes.

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**C10: Interior Construction**

C1010 : Partitions

* Sound Control between Spaces: Sound insulation is required between rooms, floors, and hallways. This requirement is to be discussed during design.
* Operable Wall Partitions: Reasons for and against the use of operable wall partitions should be discussed during schematic design.

C1020 : Interior Doors

* Locks: Locks must be compatible to accept College cores.
* Panic Devices: Panic devices are to be Von Duprin devices or approved equal. When a panic device is included on a door it must be externally mounted
* Closers: Closers will need to be properly sized to accommodate the size, weight, and use of the door.

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C1030 : Fittings

* Spacing: All above ceiling Mechanical/Electrical/Plumbing is to be within 18 inches of bar joists or bottom of the roof deck.

**C20: Stairs**

C2010: Stair Construction

C2020 : Stair Finishes

**C30: Interior Finishes**

Architect to design and specify the details for top of the wall finish (ie. If wainscoting is installed, what is the detail to finish above the wainscot). Architect to detail how floor to door frame will be caulked. Architect to design and specify the details of transitions between the walls and floors (ie. Wall tile, floor to ceiling, will there be a base) and the walls to ceilings (ie. Wall tile to drop ceiling grid).

C3010 : Wall Finishes

* Paint: All finishes will be specified as Eggshell for walls and Semi-Gloss or Gloss for door casings.
* Mechanical Spaces:

C3020 : Floor Finishes

* Entrance Matting: Outside all building entrances should be furnished with 10-15 feet of 3M Nomad Scraper Matting (or equivalent). Inside all building entrances should be furnished with 10-15 feet of Lees Tuff Stuff: First Step, Step in Style and Step Up (or equivalent). These minimum quantities of entrance matting are required, regardless of other floor finishes scheduled for the building. Entrance matting may be used in coordination with a tile or granite border.
* Carpeting: All carpet selections, designs, and colors are to be submitted to the Owner for review and approval prior to finalizing bid specifications and construction documents. Color selections should avoid solid patterns and dark colors. Any carpet selected must be equal to Mannington Commercial as the basis of design. If a substitute is desired, then approval must be obtained in writing from ACCS. The College will establish the budget and purchase the carpet for any given project. The owner shall provide a carpet for installation. Contractor is responsible for Owner provided carpet. A qualified contractor will install the carpet. Any carpet that is unused shall be returned to the College.
* All carpet tiles are to be oriented and centered within the space, with equal sized tiles, or portion of tiles on either edge of the space. The final layout must be approved by the Owner’s Designated Representative prior to installation. All exceptions to centering carpet tile must be discussed with the physical plant project manager and director and obtain written permission to deviate in any way. The contractor shall be responsible for all costs associated with fixing carpet tile to align with this standard if deviated from. This includes, but is not limited to, labor and materials, including carpet tile.
* Luxury Vinyl Tile (LVT): All LVT selections, designs and colors are to be submitted to the Owner for review and approval prior to finalizing bid specifications and construction documents. Any LVT selected must be equal to Mannington Commercial as basis of design. No wax shall be applied to LVT.
* Tile: All tile and grout selections must be submitted to the Owner’s Designated Representative for review and approval
	+ All tiles must be sealed within 48 hours of grout installation.
	+ Grout Spacing will not be greater than 3/16”
* Terrazzo:
* Workforce Areas: Floor finishes in areas like welding, machine tool, automotive, etc. Pressure wash and clean off floor surface. Apply a concrete densifier. Apply a finish coating of clear sealer.
* Installation: Installation of flooring and wall tile is to be centered on the wall and any joints greater the standard spacing grout size is not acceptable. All corners of tile must be flush and even for final approval. If not accepted it is the contractor’s responsibility to make necessary changes. No additional funds will be granted for changes.
* Cove Base: When using vinyl or rubber cove base, factory corners are to be installed.

C3030 : Ceiling Finishes

* Ceiling Height: The architect will propose a ceiling height consistent with the function and size of the room and the structural system of the building. Indications on individual room program pages are only preliminary and changes may be necessary.
* Ceiling Tile: Armstrong 1732 Fine Fissured Angled Tegular HumiGard Plus acoustical ceiling tile or equal to shall be used for executive spaces or for areas that require higher finishes. Armstrong 770 Cortega Square Lay-In tiles shall be used for other spaces. A similar quality of appropriate tile can be used in kitchens, bathrooms, or other similar spaces.

**D: Services**

**D10: Conveying**

D1010 : Elevators & Lifts

* Elevators: Elevators will be specified in accordance with *ACCS Instructions to Architects and Engineers.* In general, elevators will be Hydraulic, unless construction warrants an electric style elevator. Elevator specifications must be approved by an elevator consultant of the owner’s choosing.
	+ Elevator Controls: ACCS requires that any elevator(s) installed as new construction, retrofitted, or updated during renovations shall use one of the following elevator controls.
		- Elevator Controls
		- Motion Control Engineering
		- Virginia Controls
	+ No other control system will be accepted by ACCS. If a system is found to not comply with the following the contractor will be required to remove and replace the control system.

ALL parts must be readily available from a distributor in North America.

D1020 : Escalators & Moving Walks

D1090 : Other Conveying Systems

**D20: Plumbing**

D2010 : Plumbing Fixtures

* Drinking Fountains: Refrigerated drinking fountains will be conveniently located for adults, including the physically disabled in accordance with ADA guidelines. Recommended fixture is the Elkay LZSTL8WSLP or equal. (<https://www.elkay.com/products/details/LZSTL8WSLP>)
* Automated Fixtures: All Automated Faucets and Flushing Products **MUST** carry a minimum 5-year warranty. All automated fixtures are required to be hard-wired (no batteries). Manual fixtures are acceptable per College request.
	+ Zurn, American Standard, and Toto are preferred manufacturers.
* Shower Lifts:

All residential lift shower solutions require Owner approval.

* Heating: All Exterior water coolers and fountains are required to have heaters for freezing temperatures. The contractor is responsible for ensuring that heaters are turned on and activated before the project is closed out. Heaters must be thermostatically controlled or have automatic response to freezing temperatures.
	+ Exposed or non-climate-controlled piping for exterior fixtures shall have heat tape applied. Isolation of these fixtures from the main water supply is preferred through use of shut off valves and drains to these exterior fixtures.

D2020 : Domestic Water Distribution

* Water Pressure: Design Professional must verify that required water pressure and volume is available for project before project start.

D2030 : Sanitary Waste

D2040 : Rain Water Drainage

D2090 : Other Plumbing Systems

* Plumbing Clean-Outs:
	+ All clean-outs shall be visible and accessible without obstructions.
	+ All clean-outs shall be identified on as-built drawings.
* Floor Drains:
	+ All floor drains shall be required to have a method of trap seal or primer.
	+ Mechanical room/utility spaces with floor drains are required to slope to drain. Restrooms, labs, and other areas prone to spills are not required to slope to drain.
	+ Floor drains are required where ice makers are installed.

**D30: HVAC**

* General Mechanical: During the design phase, the architect and engineers will meet with the ACCS to jointly determine the best mechanical systems. Air conditioning and heating will be required in all facilities unless otherwise noted. ACCS requests that architects and engineers recommend energy efficient systems.
* Access to interior mechanical equipment for service and preventive maintenance does not require the use of a portable or fixed ladder. The only exception would be a VAV box. Fixed ship ladders are acceptable.
* Variable Refrigerant Flow (VRF): VRF systems are not authorized in ACCS buildings without Owner approval.

* As part of the design phase architects are required to present a preliminary review of the mechanical yard for review by ACCS.
* In addition to the standards established by the Alabama Building Commission, and the 2021 International Mechanical Code, the HVAC systems will be designed in a way that will meet the realities and the needs of the local weather conditions to keep the area comfortable for all who use it.
* ***Minimum Load and Economizer Operations:***

HVAC mechanical components and systems must be capable of operating under minimum load conditions where only certain area(s) of a structure may need space conditioned during occupied or unoccupied status. An Economizer option (if applicable) shall be incorporated for cooling during low ambient temperature and low humidity conditions.

* ***Minimum Load and Economizer Verification Criteria***:

***Controls contractor shall verify the following with ACCS***:

* + **(A)** The designed system will operate effectively under minimal load conditions by initiating a call for cooling and heating for two (2) areas/rooms ONLY (no other devices calling for operation) within a structure and verify that the designed cooling and heating methods and associated components will operate properly for a period of 8 hours without failure, lockout, tripped condition, or alarms of the BAS or equipment.
	+ **(B)** The economizer feature, if applicable, will operate properly when outdoor temperature and humidity level will allow for adequate space conditioning in lieu of other power consuming cooling methods (chillers or other A/C methods). Operation shall be tested by manipulation of system to indicate outdoor temperature of 50 degrees or less and relative humidity of 60 percent or less will turn off primary cooling methods and economizer dampers will modulate/open for cooling. This shall be verified by field observation of cooling devices, viewing the dampers in the economizer, and viewing the BAS graphics.
* Approved Equals: ACCS does not accept York manufactured products or parts as an approved equal. Under no circumstances will York be specified as an approved equal, and a York product will not be considered as an acceptable substitute at any time.
* Drain Pans: All equipment requiring a drain pan will require a secondary drain pan and be accessible for easy cleaning and maintenance. Equipment drains are preferred to be directed to floor drains.
* Exhaust Fan Motors: All exhaust fan motors will be specified to be installed inside the attic where they can be accessible for maintenance and replacement. This will require that the attic space and access to that space be large enough for the complete replacement of that fan motor.

D3010 : Energy Supply

D3020 : Heat Generation Systems

D3030 : Cooling Generations Systems

D3040 : Distribution Systems

D3050 : Terminal & Package Units

D3060 : Controls & Instrumentation

* Controls:
	+ All HVAC systems must have DDC that is compatible with College System.
	+ All controls are to be tied back from the project site to the physical plant operation and all controls provide alarm outputs to a monitor.
	+ A global set point feature for the individual building shall be programmed, displayed graphically, and adjustable by the end user.
	+ BAS Graphics shall allow the end-user the ability to adjust the unoccupied status setpoints. This applies to temperature and humidity values.
	+ Programming will be consistent with existing programming methods and graphics currently in use with consideration to the end user and the ability to change graphical and program values from local control.
	+ Controls Verification shall be conducted by the Commissioning Authority (CxA), with input from the Controls Contractor and College, and shall include described instructions of Section D30 of this document inclusive of, but not limited to, thermostat and override operation, occupied status functions, unoccupied status functions, CO2 operations, and low load operating conditions. Verification shall be conducted by the CxA that all dampers, valves, etc. open, close, or modulate as specified and that all fans, pumps, etc. energize or de-energize as specified.

The CxA shall submit the Commissioning Report with all the final test results to the Engineer for final approval.

* Calendar/holiday scheduler feature will be programmed so it will ONLY affect the building selected from the menu bar. The calendar scheduling feature WILL NOT be programmed so it affects the entire campus as this does not allow for any flexibility of scheduling building shutdowns during holidays.
* The General Contractor is expected to document weekly coordination meetings with all subcontractors.
* The architect of record for the project will be the point of contact for coordinating site visits between the General Contractor and the Commissioning Agent and is required to document all meetings.
* All projects will be bid with instructions to bidders to include an alternate bid for commissioning the facility. A representative from the subcontracting company is required to be present as needed during the commissioning process.
* ***Thermostats***: Shall include a simple occupancy override pushbutton for local control during unoccupied status. This will allow the conditioned space system to operate temporarily and shall be programmed for 2 hours of operation.
	+ Thermostats shall include humidity sensing capability. If a thermostat with humidity sensing capability is not available, an alternative must be discussed and approved by the College.
	+ If applicable: Humidity values must be considered as a priority to override the ***Unoccupied*** Status Temperature Set Points.
	+ Thermostats and DDC controls shall be password protected.
	+ *Thermostat Verification Criteria*:

*Controls contractor shall verify the following with the College*:

* + - **(A)** Thermostat installed and secured properly.
		- **(B)** Operation of the button(s) raise and lower set points.
		- **(C)** Thermostat shows room temperature during normal mode.
		- **(D)** While HVAC system is in ***Unoccupied Status,*** press override button and verify system operates for 2 hours and returns to ***Unoccupied*** Status.
		- **(E)** Verify that thermostat displays accurate room temperature by comparison with a calibrated secondary instrument.
		- **(F)** During ***Unoccupied*** status, if applicable, thermostat(s) with humidity sensor capability shall be exposed to a method of high humidity and verify that the HVAC system(s) will change to ***Occupied*** status and operate until humidity set point reached.
		- **(G)** Current room numbering and desired floor plan for graphics usage.
		- **(H)** Thermostats will have nameplate installed matching corresponding nameplate of equipment.
	+ ***Occupied Status:*** Set points will be programmed by the contractor in such a manner that they can be displayed and adjusted graphically. The initial values shall be 70-to-74 degree operating range.
	+ *Occupied Status Verification Criteria*:

*Controls contractor shall verify the following with the College*:

**(A)** Visually represents that the specified set points have been applied.

**(B)** Demonstrate that the set point values can be modified graphically.

**(C)** Demonstrate that cooling operation shall maintain cooling set point lowering cooling set point to 62 degrees and field verify and/or graphically verify that cooling equipment to include, but not limited to (chillers or other cooling methods) function, circulating pumps on, fans on, cooling valves modulate, VAV’s damper modulation, AHU VFD’s establish engineered duct pressures, heating or reheat sources are off (HW reheat valve closed), OA dampers functioning to maintain 1000PPM CO2.

**(D)** Demonstrate that heating operation shall maintain heating set point raising heating set point to 80 degrees and field verify and/or graphically verify that heating equipment to include, but not limited to (boilers or other heating methods) function, circulating pumps on, fans on, heating valves modulate, VAV’s damper modulation, AHU VFD’s establish engineered duct pressures, heating or reheat sources are on (HW reheat valve open), OA dampers functioning to maintain 1000PPM CO2.

* ***Unoccupied Status:*** Set points will be programmed by the contractor in such a manner that they can be displayed and adjusted graphically. The values shall be 60 degrees for heating and 78 degrees for cooling.
* *Unoccupied Status Verification Criteria*:

*Controls contractor shall verify the following with the College*:

**(A)** Visually represents that the specified set points have been applied.

**(B)** Demonstrate that the set point values can be modified graphically.

**(C)** A value of 55 degrees will be overwritten to the program and verify that the heating system or heating methods will switch to ***Occupy*** status and operate until ***Unoccupied*** set point is satisfied, then return to ***Unoccupied*** status. Likewise, a value of 80 degrees will be overwritten to the program and verify that the cooling system or cooling methods will switch to ***Occupy*** status and operate until the set point satisfied and then return to ***Unoccupied*** status.

* ***CO2 Sensors***:
	+ ***Systems using Air Handler Units ONLY***:

Conditioned space control shall incorporate a Carbon Monoxide (CO2) sensor in the return duct. The BAS shall calculate outdoor Air (OA) supply to maintain 1000PPM CO2 set point during occupied status for the zone in which the AHU serves. OA dampers shall be set to achieve 100% closure during unoccupied settings.

* + ***Systems using Air Handler Units and VAV’s***:

Conditioned space control shall incorporate Carbon Monoxide (CO2) sensors accordingly. The BAS shall calculate outdoor Air (OA) supply to maintain 1000PPM CO2 set point during occupied status for the zone in which the VAV’s are serving. OA dampers for AHU’s shall be set to achieve 100% closure during unoccupied settings.

* + *CO2 Verification Criteria*:

*Controls contractor shall verify the following with the College*:

**(A)** When HVAC system is in ***Unoccupied*** mode, open air handler unit access door to access the OA dampers and verify if dampers are 100 percent closed. Minimum OA dampers will be 100 percent closed during ***Unoccupied*** status.

**(B)** CO2 operation shall be tested by manipulation of system to indicate 2000 PPM and monitor operation of the OA dampers to open for reduction of CO2 and/or exhaust methods are operation, if applicable for balance.

**(C)** CO2 operation shall be tested by manipulation of system to indicate 400 PPM and monitor operation of the OA dampers for closure and RA damper is 100 percent open. The minimum OA damper should be 10 percent open or as specified for air control quality standards and balance.

**(D)** Return air dampers, minimum OA dampers, exhaust dampers/fans shall be visually verified to operate accordingly in respect to OA damper position and building balance requirements.

D3070 : Systems Testing and Balancing

* Test and Balancing shall be included in the budget and bid of project. The awarded test and balance company must be independent of building contractors. All reports will be submitted to the owner at the end of inspection. The owner will hold a joint meeting with GC and all contractors involved to resolve any lingering issues.

D3090 : Other HVAC Systems and Equipment

* Filters
	+ All new HVAC equipment that will incorporate filters must use industry standard size filters that are readily available and do not have to be fabricated.

**D40: Fire Protection**

D4010 : Sprinklers

D4020 : Standpipes

D4030 : Fire Protection Specialties

* Fire Detection and Alarm Systems: Fire alarms shall be provided with monitoring capabilities. Panels shall be capable of being connected to a central network at a future date. The only acceptable manufacturers will be non-proprietary systems which are compatible and capable of communicating with additional panels on site. This is limited to Silent Knight, Fire-Lite and Edwards. All new fire alarms shall be addressable. The contractor is responsible for programming the addressable system and all installed devices to reflect the correct location (per?) the College’s room numbering system. Fire alarm cabling must be installed neatly and will not rest on light fixtures, ceiling grid, or fire suppression piping. Annunciator panels shall be installed at the primary entry point of the building, if the main FACP is in a secure area not accessible to the occupants/emergency responders.

D4090 : Other Fire Protection Systems

**D50: Electrical**

* General Electrical: During the design phase, the architect and engineers will meet with ACCS to jointly determine the best electrical systems. ACCS requests that architects and engineers recommend energy efficient systems. Each electrical panel should contain several unused spots to allow for future expansion.

D5010 : Electrical Service & Distribution

* Emergency Power: In addition to whatever emergency lighting may be necessary if the main power is off, emergency power may be required. If a generator is to be included in the project, all emergency lighting and exit lights will be connected to the generator through emergency circuitry. The elevator will also be tied into the generator for emergency backup.

D5020 : Lighting and Branch Wiring

* Lighting: Lighting must be energy efficient and attractive. Alllighting interior and exterior shall be LED fixtures.
	+ Interior lighting shall have a luminescence between 3500K - 4000K.
	+ Exterior lighting shall have a luminescence between 4000K - 5000K.
* Lumen maintenance: All light bulbs must maintain 80 percent of the initial light output at 40 percent of their rated lifetime. This means that after 3,200 hours of use, an 8,000-hour CFL still needs to give off 80 percent of the light it gave off during its first 100 hours of operation.
* Daylighting: Architects shall incorporate daylighting as a means of light in new facilities. Daylighting should be incorporated in a way that maximizes energy savings using daylighting technologies, light shelves, windows, etc. The use of daylighting shall be designed to maximize building efficiency with all other mechanical and electrical systems. Where daylighting is implemented, solenoids and other light control technology must be implemented to turn on lighting systems after the natural lighting decreases below the code required levels.
* Exterior Lighting: Architect/ Engineer shall specify exterior light shall be controlled by a photocell. Time clocks will not be acceptable technology.
	+ All lighting exterior lighting for each facility shall be controlled by one single photocell that is easily accessible with a step ladder.
	+ Where the lighting load exceeds more than ½ of the photocell capacity a lighting contactor shall be used as the means to operate the photocell.
	+ A weatherproof Hand/Off/Auto switch shall be included in the system and shall be enclosed in a lockable box, either in the same box as the lighting contactor or separately.
	+ The Hand/Off/Auto switch shall be in the immediate vicinity of the lighting contactor and photocell.

D5030 : Communications and Security

* General Security: Architects and Engineers will design all projects to include security systems in drawings and specifications as part of the base bid. Specifications will require the awarded contractor to coordinate such installations and provide shop drawings for all security components and locations to be approved prior to purchase and installation of equipment.
* Access Control and Security Systems: Architects and Engineers will schedule a meeting with the College to review project and establish needs.
	+ Key Security Box: Architect will specify awarded contractor to install a “Key System 8 SAM,” 6” d x 18” w x 18”h, box in all projects. (<http://www.keystorage.com/electroniccabinets.htm>) Key box will include College “FOB” mounted to cabinet, required data cabling and software. Contact Owner’s Designated Representative with questions.
* Audio, Video and Computer Systems: Architects and Engineers will schedule a meeting with the College to review projects and establish needs.
* Closed Circuit TV: Architects and Engineers will Schedule a meeting with the College to review project and establish needs.
* Telephone and Data Lines: Architect and engineers will meet with the College IT department during the design phase to determine and approve all outlet locations and requirements. The contractor will furnish and install conduit and boxes. All cables, terminals, jacks, speakers, and related equipment shall be installed in a neat and orderly manner. Multiple cables shall be neatly bundled and tied to approved attachments points. No cable shall be attached to, resting on, or otherwise touching the fire sprinkler pipes, ceiling, ceiling grid, conduits, or support components of these systems.
* Security Systems: Locks will not be keyed “off the master” and alarm systems in general will not be allowed. For areas that require additional security, magnetic locking systems and/or security cameras may be approved. Contact Owner’s Designated Representative to review project and discuss needs.
* Communication rooms will be provided in the building design to accommodate voice/data communications MDF and IDF terminals and equipment. These rooms are to come from non-assignable sq ft. Power required is 120 volts.

The communication rooms will be dedicated to building communications only. Communication rooms will not contain high voltage transformers and/or power panels. Communication room walls will be reinforced material to accommodate the weight of terminals and other wall mounted equipment. The building design will provide for a communication room on every floor.

Communication rooms will be located such that wiring to any jack served by this room will not exceed 90 meters (295 feet) in length. When building design allows, communication rooms will be stacked.

D5090 : Other Electrical Systems

* Clocks: Clocks will be provided in classrooms and common spaces. Clocks shall be electric and must be hard wired or plugged in. Power supply for clocks shall be provided behind each clock location. Battery powered clocks will not be allowed.
* Vending Machines: An area should be provided for vending machines. The Owner will approve the number of machines and placement. If machines are to be placed in a hallway, they must be placed in an alcove, so the machines do not restrict egress. This area could be an alcove in a hallway. Sufficient power should be provided.
* All new construction and major renovation shall include Emon metering. Electrical contractors shall be responsible for purchasing and installing Emon metering systems on all new construction or major renovation projects if not already provided by the local jurisdiction. Architects shall designate an allowance for this system.

**E: Equipment & Furnishings**

**E10: Equipment**

E1010 : Commercial Equipment

E1020 : Institutional Equipment

E1030 : Vehicular Equipment

* Loading Dock: If this building will be provided with a loading dock, it must be unobtrusively located near a service entrance and accessible to an elevator. Permanently installed dock levelers are desired.

E1090 : Other Equipment

**E20: Furnishings**

E2010 : Fixed Furnishings

* Building Directories: Building directories with space for names of staff and faculty, and space for floor plans will be installed at prominent locations near entrances to the building and near stairways on each floor. These directories will be furnished by the owner.
* Bulletin Boards/Chalk Boards/White Boards: Bulletin boards, chalk boards and white boards should be durable high-quality products. White boards should be porcelain enamel steel with aluminum frames and marker trays. Chalk boards should be vitracite porcelain enamel steel with aluminum frames and chalk trays. Bulletin boards should be high quality vinyl equal to Claridge’s Fabricork with aluminum frames.
* Display Cases: Display casing may be required in the public areas of the building. The architect is free to suggest locations. These display cases are to be used for instructional purposes.
* Mailboxes: All mailboxes will be built with lock cylinders ready to accept College cores.
* Signage: All signage must be approved by the owner. Interior room numbering signage will be installed by the contractor. The owner will install exterior signage. If approved, lettering on the exterior of the building will be furnished and installed by the contractor.
* Window Treatments: All buildings must include window treatments as part of the base design and at a minimum be included in the specifications for the base bid. This includes all shutters, blinds, screens, curtains, whether manual or mechanically operated on all windows. Windows can be excluded only if they are designated as lights to an entry door or otherwise part of the entry. Interior windows that are not part of an entry are not to be excluded from this requirement. The architect will make requests for exceptions accordingly, and this will be documented.

E2020 : Movable Furnishings

* Furnishings: The architect is free to recommend furnishings; however, the owner must approve all changes. Recommended alternates will be considered if the architect can show that the product is equal to or better than what is specified.

**F: Special Construction & Demolition**

**F10: Special Construction**

F1010 : Special Structures

F1020 : Integrated Construction

F1030 : Special Construction Systems

F1040 : Special Facilities

F1050 : Special Controls and Instrumentation

**F20: Selective Building Demolition**

F2010 : Building Elements Demolition

F2020 : Hazardous Components Abatement

**G: Building Sitework**

**G10: Site Preparation**

G1010: Site Clearing

G1020: Site Demolition and Relocation

G1030: Site Earthwork

* Architect is responsible to provide comprehensive erosion control plan that complies with standards and regulation set by state and local authorities having jurisdiction. It is the responsibility of the architect to monitor all activities with the awarded contractor to ensure minimal disturbance to the environment.

G1040: Hazardous Waste Remediation

**G20: Site Improvements**

G2010: Roadways

* Roadways: Will be paved in a way that the joints between pulls will be seamless.

G2020: Parking Lots

G2030: Pedestrian Paving

* Walkways: Will be designed of sufficient strength for light vehicular traffic. Sidewalks will be at least 8 feet wide.
* Handrails shall be made from galvanized steel. All anchor holes to the post of handrails shall be filled with concrete and provide positive drainage of water away from rail.

G2040: Site Development

* Chain link: No fences shall be chain link.
* Wood: No fences shall be wood.

G2050: Landscaping

* General Landscaping: All landscaping additions and changes will be furnished and installed as part of the contractor’s contract. The owner must approve the design.
* Irrigation Sprinklers: All irrigation designs must be a certified Toro System or equal. All designs and specifications will require the review and approval of the Owner’s Designated Representative prior to finalizing bid specifications for contractors, and will include head-to-head coverage, the use of Rain Bird (or equal) heads and valves, and rain sensors. All sprinkler systems will be furnished and installed by the contractor.
* Irrigation Installation:
	+ Only silicone wire nuts will be approved.
	+ Trenches for irrigation lines are to remain open until all irrigation is tested for leaks. Contractors will be responsible for all costs to repair leaks, landscaping, hardscape, etc. if this is not completed prior to burying the lines. Contractors are to contact the Owner for the required testing methods.
	+ A separate O&M binder shall be required on each project for irrigation systems. Irrigation plan drawings shall be provided in O&M binder (this is in addition to the required as-built drawings at Close-Out).
	+ An initial O&M irrigation training is to be conducted by the contractor or their authorized vendor. A one month, and six months retraining, and review will be required by the contractor or their authorized vendor to ensure the system is functioning properly and fully operational.
* **Irrigation System**
	+ Manually controlled underground irrigation system, with low point self-drain.
* Low Voltage Controls: 24 volts, A.
* Manufacturers:
* Rain Bird Sales, Inc: [www.rainbird.com](http://www.rainbird.com).
* **Materials**
	+ Pipe: PVC Pipe ASTM D2241; 200 psi (1.38 MPa) pressure rated upstream from controls; 160 psi (1.10 MPa) downstream; solvent welded sockets.
	+ Fittings: Type and style of connection to match pipe.
	+ Solvent Cement: ASTM D 2564 for PVC pipe and fittings.
	+ Sleeve Material: PVC
* **Outlets**
	+ Rotary Type Sprinkler Head: Pop-up type with screens; fully adjustable for flow and pressure; size as indicated; with letter or symbol designating degree of arc and arrow indicating center of spray pattern.
	+ Spray Type Sprinkler Head: Pop-up head with full circle pattern.
* **Valves**
	+ Gate Valves: Bronze construction non-rising stem. Only commercial grade valves are to be used.
	+ Backflow Preventers: Iron body construction, double check valve type.
	+ Valve Box and Cover: All valve box covers are to be detected by metal detector.
	+ Drain Valve: Only commercial grade valves are to be used.
* Controller: Automatic controller, microprocessor solid state control with visible readout display, temporary override feature to bypass cycle for inclement weather, timer for a 4-station system, programmable for 7 days in quarter hour increments, with automatic start and shutdown.
	1. Grounded per specifications.
	2. Only commercial grade decoders are to be used.
	3. All decoders are to be labeled.
	4. The cost for IQ technology shall be quoted along with a traditional set up that can be upgraded. The owner will make the decision as to what box will be used. Equipment to be included, but not limited to, shall include:
		1. Rain sensor
		2. Flow sensor
		3. Surge protection

* Controller Housing: NEMA 250 Type 3; weatherproof, watertight, with lockable access door.
* Grounded per specifications.
* The control box must have IQ technology or equal and must comply with (1) year service agreement.
* Valves: Hydraulic; normally open; hydraulic tubing, including required fittings and accessories.
* Only commercial grade valves are to be used.
* Wires: All wires are to be tagged.
* A minimum of 3 feet of additional wire above ground is to be coiled at each splice along the two-wire path. All splices are to be labeled.
* E. Wire Conductors: Color coded
* All plantings and landscape designs, whether specifically commissioned by the College, or included by the architectural firm as part of the overall building design package, require review and approval by the Owner prior to proceeding with the landscaping design. The company responsible for the designs shall be responsible for all costs in bringing the designs to the College specifications, if approval has not been granted. This includes but is not limited to, cost of redesigning, or replacement of fixtures, hardscape, softscape, etc. that have been placed on site.
* Sod: Provide sod in rolls, not slabs, not less than 2 years old and free of weeds and undesirable native grasses. Only provide sod capable of growth and development when planted (viable, not dormant). Provide machine cut sod of a uniform minimum soil thickness of 5/8 inch, plus thickness of top growth and thatch. Sod pieces to be consistent in size and shape. The sod shall not be over-seeded and must be laid within 48 hours of delivery.
* Flower Beds: Flower beds will be designed around the immediate perimeter of the structure.
* Tree & Shrub Location: Trees and shrubs will be considered in use for screening or hiding exterior electrical/mechanical equipment where code allows.
* Bollards: Bollards must be painted black.
* Exterior Furnishings: Bicycle racks, benches and trash receptacles should closely match the standard that is on the College campus.

**G30: Site Mechanical Utilities**

G3010: Water Supply

G3020: Sanitary Sewer

G3030: Storm Sewer

G3040: Heating Distribution

G3050: Cooling Distribution

G3060: Fuel Distribution

G3090: Other Site Mechanical Utilities

**G40: Site Electrical Utilities**

G4010: Electrical Distribution

G4020: Site Lighting

G4030: Site Communication and Security

G4090: Other Site Electrical Utilities

**G90: Other Site Construction**

G9010: Service and Pedestrian Tunnels

G9090: Other Site Systems and Equipment

**Appendix A - Forms**

**Appendix B – Supporting Documents**