

University Facilities

MONTCLAIR

STATE UNIVERSITY

FACILITIES DESIGN STANDARDS

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Table of Contents

Introduction

4

General Requirements Subgroup

5

DIVISION 01 – GENERAL REQUIREMENTS

6

Facility Construction Subgroup

12

DIVISION 02 – EXISTING CONDITIONS

12

DIVISION 03 – CONCRETE

13

DIVISION 04 – MASONRY

14

DIVISION 05 – METALS

15

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES

16

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

17

DIVISION 08 – OPENINGS

21

DIVISION 09 – FINISHES

25

DIVISION 10 – SPECIALTIES

30

DIVISION 11 – EQUIPMENT

33

DIVISION 12 – FURNISHINGS

35

DIVISION 13 – SPECIAL CONSTRUCTION

37

DIVISION 14 – CONVEYING EQUIPMENT

38

Facility Services Subgroup

40

DIVISION 21 – FIRE SUPPRESSION

40

DIVISION 22 – PLUMBING

41

DIVISION 23 – HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

44

DIVISION 25 – INTEGRATED AUTOMATION

46

DIVISION 26 – ELECTRICAL

47

DIVISION 27 – COMMUNICATIONS

49

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

51

Site and Infrastructure Subgroup

54

DIVISION 32 – EXTERIOR IMPROVEMENTS

54

DIVISION 33 – UTILITIES

56

Appendices and Details

57

RECORD OF CHANGES

Updates will be recorded here as performed.

Rev.	Date	Version
1.1	2024-11-27	Formatting changes
2.0	2025-02-07	DRAFT Div 01 General Requirements added • 08 40 00 Curtain Wall and Glazed Assemblies - SSG content removed
2.1	2025-12-17	Final DRAFT
	2026-01-22	CPVC piping note
	2026-08-05	Document Title Update

NOTE: **Highlighted** or **red** text may indicate new or revised content from the previous version.

Introduction

PURPOSE

These University Facilities Design Standards establish a comprehensive set of baseline standards and requirements that will guide the design, construction and maintenance of projects across the Montclair State University built environment. It is provided as a resource for design professionals, contractors, University personnel, and anyone else involved in the process of design, construction or renovation projects on campus.

The content in this document represents a holistic balance between affordable, up-front construction costs and long-term life-cycle costs. As the University typically owns, operates and utilizes our facilities for many years, durability, maintainability and operational efficiencies are essential as is the ability to adapt based on changing necessities and paradigms in the future. The University also operates in a competitive market and is largely responsible for funding its own capital development with limited resources allocated. To remain competitive, the University must ensure that its capital development costs are not unbalanced or exorbitant.

This document is not meant to replace detailed project specifications nor shall it take precedence over any existing codes, laws, or regulations. The University understands the need to maintain design flexibility based on each project's set of unique circumstances. Any deviations from these standards shall be coordinated with the Project Manager or office of Capital Planning and Project Management as early in the process as possible.

ORGANIZATION

Information is organized in conformance with the appropriate specification subgroups, divisions and section numbers from the industry-standard CSI (Construction Specifications Institute) **MasterFormat**, 2020 Edition. All items listed as a "Basis of Design" are assumed to include an approved equal unless otherwise specified.

UPDATES

The ongoing process of coordinating and maintaining these Design Standards is a multi-stakeholder effort led by the University Facilities Office of Capital Planning and Project Management. The revision process is an important component that is critically dependent upon the active engagement of all interested stakeholders. Updates will be issued as necessary to ensure that this document remains dynamic and relevant in order to effectively meet the needs of the University.

Requests for updates to these standards may be submitted anytime via email to chiappam@montclair.edu.



ACKNOWLEDGEMENTS

The technical content in this document represents the culmination of input and consolidation of institutional knowledge from many individuals across several University departments. Recognition is given to all persons who participated in its original drafting and to those who continue working to keep it current and successful. This immense undertaking would not have been possible without the collective efforts of everyone involved.



General Requirements Subgroup

General Requirements Subgroup

DIVISION 01 – GENERAL REQUIREMENTS

Introduction

This section provides general guidelines to be used by Architectural/Engineering firms (*the “Consultant”*) for the design of new construction and renovation of facilities and systems at the University (*the “Project”*). The following topics are included:

- I. Design Process
- II. Regulatory Agencies
- III. Insurance Carrier Review
- IV. Accessibility
- V. Universal Design
- VI. Sustainability
- VII. Cost Estimate and Schedule
- VIII. General Guidelines and Responsibilities
- IX. Project Communication and Documentation

I. Design Process

All design documents which outline repair, renovation, or new construction shall be reviewed by the University Facilities Office of **Capital Planning and Project Management** along with any applicable internal stakeholders and University Energy Partner (DCO Energy, LLC) for approval at all phases of design prior to release for bidding and construction.

The University must approve the design at each respective phase of design, including selection of materials, equipment, furnishings, and colors, for projects. The Consultant shall include a list of proposed materials, equipment, furnishing and finishes with contract documents and provide an explanation, if requested, as to why the selected products would best serve the interests of the University.

As the University continues to grow in population, so does the need to provide safe environments for the students, faculty and staff. Innovative design solutions that are visually pleasing and safe shall be utilized when addressing the various areas identified within this document.

Proposed designs shall be of a character that promotes a cohesive and distinctive campus setting. It is important to create a design concept that blends well with the surrounding area along with the University's architectural vernacular and should be consistent with surrounding campus improvements. Proposed improvements to an existing facility shall complement the surrounding architectural character. New designs should be responsive and sensitive to the existing facility while taking into consideration the context of the campus and adjacent buildings. When a space undergoes remodeling, the new construction work shall appropriately incorporate the construction type, architectural features/details, finishes/treatments, color schemes, fixtures, hardware, etc. that have been used in adjacent areas in order to maintain visual continuity.

Where feasible and reasonable, exterior spaces should be designed as inviting outdoor areas that promote interaction and campus community.

II. Regulatory Agencies

It shall be the responsibility of the Consultant to design in accordance with all applicable building codes and to prepare permit application(s), as necessary.

Permitting shall include, but is not limited to:

- International Building Code and Applicable Subcodes (*Rehabilitation, Barrier Free, Electric, Plumbing, Mechanical, Elevator, Energy*)
- Standards and Requirements of the Public Employee Occupational Safety and Hazard Act of 1984 (PEOSHA)

Consultants shall check with the New Jersey Department of Community Affairs (DCA) to determine the latest adopted dates of the above codes. A listing of the codes used for design of the project, with dates, can be found at <https://www.nj.gov/dca/divisions/codes/codreg/>.

All governing regulatory agencies should be coordinated and/or met with to ascertain feasibility of the proposed plans.

Consultants shall be responsible for filing and preparing all required applications and revisions to design documents to receive requisite approvals of the DCA. Consultants shall also be responsible for facilitating the review of Project bid documents with the New Jersey State Comptroller for all public bid projects subject to this review.

III. Insurance Carrier Review

Where applicable, design documents must be sent to FM Global for review and comment in order to ensure compliance with its property insurance policies. Consultant shall refer to FM Global **Data Sheets** and FM Global Approval Guide for the necessary submittal requirements. The University shall make a determination as to which comments from FM Global will be incorporated into the Project.

IV. Accessibility

All designs for new construction and renovations to existing facilities shall be designed and constructed in such a manner that the new or renovated facility is readily accessible to and usable by individuals with disabilities consistent with all applicable state and federal mandates.

Beyond mere compliance with the requirements and regulations of the Americans with Disabilities Act (ADA), each design component should be examined for its impact on persons with disabilities and adjusted to achieve the optimum balance between user requirements and convenient access to individuals with disabilities:

- a. All students, faculty, staff, and guests shall be provided equal access to all campus buildings and circulation walkways.
- b. Pedestrians who are physically challenged shall have the ability to travel freely between all campus parking lots, barrier-free pedestrian pathways, exterior facilities, and accessible building entrances.
- c. Accessibility improvements shall be a consideration in the planning of upgrades, maintenance and repairs to existing facilities.
- d. Campus stakeholders may be consulted to determine whether additional accessibility features should be included to better meet the needs of the campus community.

ACCESSIBILITY MAP – University Facilities maintains a **Campus Accessibility Map** that includes a comprehensive overview of inter-campus shuttle routes and stops, accessible parking spaces across campus surface lots, barrier-free routes, and locations of accessible building entrances and automatic door openers. The Office of Capital Planning and Project Management (CPPM) is responsible for ensuring that the map reflects the most accurate information and accounts for recent and future major construction projects. Any work that may have a long-term impact on campus accessibility shall be communicated accordingly.

V. Universal Design

The University strives to provide a built environment that is universally usable by those with diverse physiologic and sensory abilities. Universal Design principles that exceed minimum code requirements shall be considered when feasible in order to provide consistent, convenient, and dignified access for all campus building users.

Universal design (“UD”) is defined as “*the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design*”. Universal design goes beyond regulatory compliance by proactively removing barriers to access and reducing the need for individual accommodations. Its main principles include Equitable Use, Flexibility in Use, Simple and Intuitive Use, Perceptible Information, Tolerance for Error, Low Physical Effort, and Appropriate Size and Space for Approach and Use.

- A. **EQUITABLE USE** – *The design is useful and marketable to people with diverse abilities. For example, a counter space or desk surface may be raised or lowered to accommodate users of varying height, or an individual who uses a wheelchair.*
- B. **FLEXIBILITY IN USE** – *The design accommodates a wide range of individual preferences and abilities. For example, a captioned video will allow people to choose to listen or to read in order to understand content.*
- C. **SIMPLE AND INTUITIVE USE** – *Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level. For example, arrange information consistent with its importance.*
- D. **PERCEPTIBLE INFORMATION** – *The design communicates necessary information effectively to the user, regardless of the ambient conditions or user's sensory abilities. For example, use various modes (pictorial, verbal, tactile) for redundant presentation of essential information.*
- E. **TOLERANCE FOR ERROR** – *The design minimizes hazards and the adverse consequences of accidental or unintended actions. For example, arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.*
- F. **LOW PHYSICAL EFFORT** – *The design can be used efficiently, comfortably, and with a minimum of fatigue. For example, automatic door openers can facilitate access to an office space or classroom.*
- G. **SIZE AND SPACE FOR APPROACH AND USE** – *Appropriate size and space is provided for approach, reach, manipulation, and use regardless of body size, posture, or mobility. For example, a clear line of sight is provided to important elements for any seated or standing user.*

VI. Sustainability

Sustainable design strives to improve the human condition of our students, community, state and nation through the prudent use of our resources, both natural and fiscal. These Sustainable Design Standards aim to promote environmentally-friendly practices in the planning, design, construction, maintenance, and operation of buildings on campus. Site selection, energy efficiency, energy conservation, indoor air quality, and waste recycling shall be reviewed thoughtfully for each project with consideration of the university resources required.

A. Projects Pursuing LEED Certification:

All new campus buildings shall be designed and constructed to conform with the standards outlined in the most current version of the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) program and shall meet the specifications for a Silver rating or higher.

B. Projects Not Pursuing LEED Certification:

All major campus renovation projects, including those that are not seeking third party certification to a comprehensive green building standard (e.g., LEED), shall make active efforts to incorporate elements of green building design and energy-efficiency whenever feasible.

Consultants shall comply with and integrate the following into all applicable projects:

- i. **FACILITIES SUSTAINABILITY PLAN** – *Launched in April 2022, the Montclair State University Facilities Sustainability Plan represents a commitment to upgrading and exceeding past practices to ensure the viability of our built environment and institution for future generations. All work shall be in alignment with the Facilities Sustainability Plan and Sustainable Facilities requirements.*
(<https://www.montclair.edu/facilities/sustainability/facilities-sustainability-plan/>)
- ii. **COMPLETE STREETS ON CAMPUS** – *In February 2022, the Board of Trustees approved a resolution making a commitment to adopt a Complete Streets Policy for Montclair's campus. The resolution defines Complete Streets as a means to provide a comprehensive, integrated, connected multi-modal network of transportation options through the planning, design, construction, maintenance, and operation of new and retrofitted transportation facilities along the entire right-of-way for all users of all ages and abilities.*
(<https://www.montclair.edu/facilities/sustainability/complete-streets-on-campus/>)
- iii. **AASHE STARS** – *Montclair participates in the AASHE Sustainability Tracking, Assessment & Rating System (STARS), which is a self-reporting framework for institutions of higher education to track their sustainability performance created by the Association for the Advancement of Sustainability in Higher Education (AASHE). The Project design approach shall be in congruence with the University's goal of accruing STARS credits as outlined by the STARS 3.0 Program Technical Manual.*
(<https://www.montclair.edu/sustainability/aashe-stars/>)

C. Sustainability Project Procedures:

Projects that are seeking third party green building certification shall comply with the following guidelines as applicable:

- i. **LEED COORDINATOR** – *The project design and construction team shall each identify one person employed by the firm to coordinate LEED requirements. This LEED AP certified person will be the primary point-of-contact for the University and its LEED consultant (if separate from the design team).*
- ii. *The Architect is expected to have at least one staff member who has experience on previous LEED projects assigned to the project through all phases of work. This person will be responsible for coordinating with all contractors and subcontractors in order to ensure that specifications are met. It is expected that this topic will be addressed at regularly scheduled meetings with the University Facilities Office of Capital Planning and Project Management (CPPM).*
- iii. **PROJECT MEETINGS** – *At least one Sustainability Review and Discussion meeting shall be conducted during each phase of design (conceptual design, schematic design, design development, construction documents); as well as once every quarter during the construction phase. The University Sustainability Directory and Energy Manager shall be invited to the meetings.*

Regardless of a Project seeking third party green building certification, the following guidelines should be followed as applicable:

- 1. **PRODUCT SUBSTITUTION AND CHANGE ORDER REQUESTS** – *Product substitutions and change order requests which impact agreed-upon project energy and sustainability goals should not be evaluated and approved on the basis of first costs alone, but should also consider the energy and environmental impacts based on life cycle analysis.*
- 2. *Sustainable design goals shall be developed and recorded for each applicable project, including consideration of seeking third-party green building certification such as LEED.*
- 3. *At project initiation, the University Project Manager shall identify one or more sustainability objectives that the project will seek to satisfy (refer to the University's Capital Project Sustainability Checklist for a comprehensive breakdown of potential credit items). These objectives will vary on a per-project basis depending on project type, scope, budget, and overall appropriateness.*
- 4. *The Project Manager is responsible for ensuring that benchmarks are being met throughout planning, design, and construction.*
- 5. *Upon project completion, the Project Manager shall be responsible for reporting which sustainability benchmarks were met or not met (with a brief explanation of why if not met), as well as providing all relevant support documentation pertaining to the benchmarks.*
- 6. **CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL** – *Projects with a construction value greater than \$2,500,000 that are not pursuing third party green building certification (e.g., LEED) shall reference and comply with Montclair State University's Construction Waste Management Plan. The Consultant shall include this in the design documents.*

VII. Cost Estimate and Schedule

Consultants shall be responsible for providing Construction Cost Estimates and for ensuring budget compliance throughout the Project as defined in the RFP.

Construction Bids received greater or less than 10 percent of the approved estimated construction cost may require redesign by the Consultant at no cost to the University.

Consultants shall provide a comprehensive schedule which includes all design phases, University review/comment period at each phase of design, FM Global plan review (*if required*), DCA plan review, University procurement and bidding, and anticipated long lead equipment and construction milestones.

VIII. General Guidelines and Responsibilities

Architectural Consultants shall comply within the professional parameters and deliverables consistent with the most recent edition of “*The Architect’s Handbook of Professional Practice*” prepared by the American Institute of Architects (AIA) as well as any University Design Standards (<https://www.montclair.edu/facilities/our-services/capital-planning-project-management/university-facilities-design-standards/>).

Engineering Consultants shall comply with all laws and regulations established by the New Jersey State Board of Professional Engineers and Land Surveyors.

The Consultant shall be responsible for the accommodation of all utilities into and out of the proposed Project. Consultants shall confirm with all local utilities the capacity to support the new facility and design the requisite utilities along with all permits/applications.

Technology should be included as a base service and shall be consistent with the University’s OIT suite of hardware, delivery methodology and mediated equipment programs. Spaces throughout the Project will be furnished with data ports and voice lines. Wireless technology should be provided throughout the Project. The Consultant shall design all AV/IT components of the Project, which may be under a separate contract than the general construction contractor.

Consultants shall evaluate existing road conditions and traffic patterns (*pedestrian, vehicle, bus, service, emergency, etc.*) and shall recommend and design the connections/modifications to existing roads as necessary.

All site furnishings, lighting, paving, signage, and other aesthetic components should be consistent throughout the Project.

Landscaping for the Project shall be provided with plantings that are consistent with the overall design theme and approved by the University. All plant material should be native to the northern New Jersey area.

Signage getting to and around the Project shall be provided with the style/layout that is consistent with University standards and should be submitted and approved by the University.

IX. Project Communication and Documentation

WEB-BASED PROJECT MANAGEMENT SYSTEM – Consultants shall utilize Projectmates, the University’s electronic project management system, for all project correspondence. The Projectmates website includes a secure document management system for the storing/distribution of drawings and specifications along with database-driven applications for managing RFIs, Submittals, Daily Field Logs, and Meeting Minutes. Items shall be entered, submitted, tracked, and responded to via the web-based software system.

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Facility Construction Subgroup

Facility Construction Subgroup

DIVISION 02 – EXISTING CONDITIONS

Related Sections:

- a. DIVISION 09 – FINISHES

02 80 00 Facility Remediation

02 80 00 Facility Remediation – General Requirements

- a. If existing asbestos or lead paint is suspected, the University shall be notified in order to conduct any necessary testing and remediation.
- b. All remediation work shall be coordinated with the Montclair Office of Environmental Health and Safety within University Facilities.
- c. The Office of Environmental Health and Safety shall be consulted during project planning prior to the completion of Design Development.

02 82 00 Asbestos Remediation – General Requirements

- a. The need for asbestos abatement shall be determined early in a project and appropriate steps shall be taken for its removal.
- b. The Office of Environmental Health and Safety shall be consulted prior to starting any project involving the disturbance of suspect building materials and shall schedule asbestos abatement (removal) prior to the start of any renovation or repair work.
- c. Asbestos-containing material (ACM) that will not be disturbed throughout the course of a project shall not require removal except if the material in that area requires repair, in which case the friable portions shall be abated or repaired.
- d. Any removed insulation shall be replaced with new insulation.

02 83 00 Lead Remediation – General Requirements

- a. Any structure or painted surface constructed prior to 1978 shall be assumed to contain lead based paint.
- b. The Office of Environmental Health and Safety shall be consulted prior to any activity that may release lead dust into the air.
- c. Lead abatement shall generally be limited to buildings that house young children and/or who are diagnosed with elevated blood lead levels.

DIVISION 03 – CONCRETERelated Sections:

DIVISION 04 – MASONRY

- a. DIVISION 32 – EXTERIOR IMPROVEMENTS

03 00 00 Concrete – General Requirements

- a. All concrete shall be designed in accordance with the most recent NJDOT Standard Specifications for Road and Bridge Construction.
- b. The design and specifications for concrete shall generally follow American Concrete Institute (ACI) and ASTM test recommendations.

03 40 00 Precast Concrete03 45 00 Precast Architectural Concrete – General Requirements

- a. Sample panels shall be provided for concrete that is proposed for use as a finished surface or exposed to view.
- b. Panel construction shall match actual construction and finishes.
- c. Sample panels shall be reviewed by the University and approved prior to initiation of architectural precast concrete work.

DIVISION 04 – MASONRY04 00 00 Masonry – General Requirements

- a. All masonry work shall comply with Brick Industry Association and International Masonry Association standards.

04 20 00 Unit Masonry04 21 13 Brick Masonry – General Requirements

- a. All exposed brick masonry shall be tested for efflorescence per ASTM C67.
- b. Brick shall, at minimum, comply with ASTM C216, Grade FBX, SW.

04 22 00 Concrete Unit Masonry – General Requirements

- a. Concrete Masonry Units (CMU) shall comply with ASTM C90.
- b. Exposed CMU surfaces shall be a uniformly dense, flat, fine grain texture with no cracks, chips, spalls or other defects to impair the finish.
- c. All exterior wall reinforcing at minimum shall be hot dip galvanized conforming to ASTM A153.
- d. All interior wall reinforcing at minimum shall receive mill galvanized finish conforming to ASTM A641, Class B-1.
- e. No air entraining, anti-freeze compounds or calcium chloride admixtures shall be permitted.
- f. Expansion joints shall be provided at a minimum in accordance with industry guidelines.
- g. Space weeps shall be a minimum 16" O.C.
- h. Exposed masonry at conclusion of work shall be cleaned with non-acidic cleaner approved for installed brick.

04 40 00 Stone Assemblies04 42 00 Exterior Stone Cladding– Basis of Design

- Arriscraft Adair Limestone or Approved Equal (*Wall Base*)
Color: Light Tan, Grout to match stone. (ex.: CCIS, NURS)

04 70 00 Manufactured Masonry04 72 00 Cast Stone Masonry – Basis of Design

- American Stone or Approved Equal (*Building Base at Grade*)
- Manufacturers – *Subject to compliance with requirements, provide basis of design product or approved equal by one of the following:*
 - Arban Associates, Inc.
 - Continental Cast Stone Manufacturing
 - Edwards Cast Stone Company
 - Plasticrete Architectural Concrete Products
 - Southside Precast Products
 - Sun Precast Co., Inc.

04 73 13 Calcium Silicate Manufactured Stone Masonry – Basis of Design

- Arriscraft International Renaissance Masonry Units or Approved Equal
Cap/Sill Color: Wheat (ex.: CCIS, CELS, NURS, SBUS)
Base Stone Color: Slate (ex.: CELS, SBUS)
SpecMix Mortar Color: SM100 Gray (ex.: CCIS)

DIVISION 05 – METALSRelated Sections:

- a. DIVISION 09 – FINISHES
- b. DIVISION 32 – EXTERIOR IMPROVEMENTS

05 50 00 Metal Fabrications05 50 00 Metal Fabrications – General Requirements

- a. All proposed items shall be reviewed and approved by the University Project Manager.
- b. All exposed welds shall be ground smooth and dressed to provide an indistinguishable to adjacent surfaces.
- c. Steel that is located in exterior walls or that is exposed to weather shall be hot dip galvanized, complying with ASTM A153, with a minimum weight of 2 oz. per sq. ft. of surface.

05 51 00 Metal Stairs – General Requirements

- a. Stairs and handrails shall be constructed in accordance with all ADA guidelines and applicable building codes.
- b. Full abrasive nosing shall be provided at each stair tread.

05 52 00 Metal Railings – General Requirements

- a. Handrails shall be Schedule 40 galvanized steel pipe with black powder coat finish.
- b. Handrail posts shall be spaced no greater than 5'-0" on center.
- c. Handrails shall be positioned adjacent to building walls to allow minimum 2" clearance between existing roof drains and handrail.

05 70 00 Decorative Metal05 70 00 Decorative Metal – General Requirements

- a. The University maintains several exterior decorative metal styles including traditional and transitional/contemporary railing design styles. Existing railing styles include common railings, semi-decorative railings, and angular baluster designs.
- b. Installation of new exterior metal handrails shall consider the immediate context and appropriately complement the surrounding vernacular.
- c. Products and materials shall be chosen with respect to intended location, especially for buildings and public spaces of historical significance.
- d. The University shall provide design details from relevant precedent projects on an as-needed basis.

05 73 00 Decorative Metal Railings – Basis of Design

See below for each individual item type.

Traditional Style Exterior Stair Handrail:

- Manufactured by Julius Blum & Co. Inc. or Approved Equal

Ornamental Exterior Steel Handrail:

- Manufactured by King Supply Co. or Approved Equal, *Model #: 45-908, Color: Gloss Black*
Ornamental Steel Post manufactured by Classic Iron Supply, Model #: LFOP-55, Color: Gloss Black

Transitional/Contemporary Style Exterior Black Railing:

- *The University's standard Black Railing for Transitional/Contemporary applications is a custom powder coated aluminum design.*

Transitional/Contemporary Style Exterior Red Herringbone Railing:

- *The University's standard Red Herringbone Railing for Transitional/Contemporary applications is a custom steel design.*

05 73 13 Glazed Decorative Metal Railings – Basis of Design

See below for each individual item type.

Custom Post-Supported Railings with Glass Panel Infill (Interior):

- Mirage Railing System with Glass Panel Infill by Livers Bronze Co. or Approved Equal (*ex.: COLE*)

Glass-Supported Railings (Interior):

- Button Rail Railing System by Livers Bronze Co. or Approved Equal

Pre-Engineered, Component-Based Ornamental Railing System (Interior):

- Struct-U-Rail Railing System by Livers Bronze Co. or Approved Equal

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITESRelated Sections:

- a. DIVISION 08 – OPENINGS
- b. DIVISION 09 – FINISHES

06 00 00 Wood, Plastics, and Composites – General Requirements

- a. SUSTAINABILITY: *Montclair State University is committed to promoting sustainable practices in the design, construction, and operation of buildings. Wherever possible, proposed materials shall meet or exceed the latest USGBC LEED rating system or as discussed with the Project Manager.*

06 10 00 Rough Carpentry06 10 00 Rough Carpentry – General Requirements

- a. All exterior fasteners shall be Type 304 stainless steel at minimum.

06 20 00 Finish Carpentry06 20 00 Finish Carpentry – General Requirements

- a. Quality level shall meet or exceed Architectural Woodwork Institute (AWI) Premium Grade.
- b. Exterior wood trim shall be cedar, mahogany, Ipe, or approved engineered composite.
- c. Clear vertical grains shall be required; finger joints are not allowed.
- d. All exterior woodwork shall be back primed.

06 40 00 Architectural Woodwork06 40 00 Architectural Woodwork – General Requirements

- a. Quality of materials and installation shall conform to Architectural Woodwork Institute (AWI) Premium Grade specification.

DIVISION 07 – THERMAL AND MOISTURE PROTECTION07 00 00 Thermal and Moisture Protection – General Requirements

- a. Systems shall comply with all applicable federal, state and local code requirements.
- b. All exterior components shall be in compliance with NFPA 285.
- c. Exterior envelope assemblies shall comply with the latest ASHRAE 90.1 and Energy Code requirements.
- d. All roofing systems shall comply with Factory Mutual (FM) Global requirements.
- e. Construction or modification of roof and water protection systems shall comply with the latest *NRCA Roofing and Waterproofing Manual*.

07 10 00 Dampproofing and Waterproofing07 10 00 Dampproofing and Waterproofing – General Requirements

- a. Below Grade waterproof membrane shall provide a minimum ten year labor and material warranty.
- b. Membrane manufacturer shall be on site for start of installation and report that materials were installed according to requirements.
- c. Below grade drainage panels shall vary from 1.6-1.8 lb./cu. ft. on a per-project basis.

07 20 00 Thermal Protection07 21 00 Thermal Insulation – General Requirements

- a. EXTERIOR CAVITY WALL INSULATION: *Mineral wool ASTM C612 and extruded polystyrene ASTM C578, minimum 25 psi*
- b. INTERIOR STUD WALL INSULATION: *Batt insulation, faced and unfaced, complying with ASTM C665*

07 22 00 Roof and Deck Insulation – General Requirements

- a. Polyisocyanurate board/sheet type insulation shall be used with all roofing systems.
- b. Sheets shall be 4'x4' maximum, installed with joints staggered and at least 2 layers deep. Joints shall be butted tight with a maximum 1/8" gap.
- c. A protection board shall be used between the insulation and the roofing membrane.
- d. Roof Insulation shall be 20 psi ASTM C1289 faced with proper facing to allow membrane to be adhered without delamination.
- e. Roof insulation shall have an LTTR R-Value of 6.0/inch at 7°F when tested in accordance with ASTM C1303.
- f. Roof insulation shall provide an average "U"-factor that meets or exceeds the energy code.

07 24 00 Exterior Insulation Finish Systems – General Requirements

- a. Use of EIFS and other imitation stucco systems shall generally be avoided for all new construction projects and its use shall be otherwise limited unless specified on a per-project basis and approved by the Project Manager. For renovation work involving EIFS repairing or replacement, existing building conditions shall either be matched or an improved alternative shall be proposed for use.
- b. All projects requiring the use of EIFS shall be in strict conformance to all University guidelines as directed by the Project Manager.
- c. Basis of Design – Class PB EIFS with Drainage:
 - Dryvit Systems, Inc. Outsulation Plus MD System or Approved Equal
Approved Color: #310 China White Dryvit Sandpebble
Provide Panzer Mesh Reinforcement at areas below 12'-0" AFF/AFG and areas where impact may be a concern (project-specific).
- d. Manufacturers – *Provide basis of design product or approved equal by one of the following:*
 - Senenergy Wall Systems
 - SKW-MBT Construction Chemicals
 - Sto Corp

07 26 00 Vapor Retarders – General Requirements

- a. Consistent with the latest requirements of ASHRAE 90.1, a vapor retarder shall be provided on the interior side of insulated walls.
- b. As quality installation is critical to their performance, design documents addressing their installation shall be very detailed.

07 27 00 Air Barriers – General Requirements

- a. An air barrier (*i.e. "building wrap"*) shall be installed in conjunction with each exterior wall.
- b. When insulation and a vapor barrier are installed, an air retarder shall be installed in addition to them.

07 30 00 Steep Slope Roofing07 30 00 Steep Slope Roofing – General Requirements

- a. Roof accessories shall be of non-corrodible materials. Durability of roof accessories shall match or exceed the expected life of the roof system.
- b. All roof blocking shall be pressure treated exterior grade.
- c. A minimum two year contractor warranty shall be required covering all materials (*insulation, roof membrane, flashings, sheet metal, sealants, etc.*), and workmanship to maintain the roofing system and flashings watertight and weathertight, effective from date of substantial completion.
- d. Manufacturer shall provide a ten year minimum watertight warranty and a separate, extended membrane weathering twenty year warranty.
- e. METAL ROOFING: *All metal roofing systems must be warranted for leak-tightness for a minimum of twenty years to be considered for approval.*
- f. UNDERLAYMENT: *Install at minimum one layer of No. 30, non-perforated, asphalt saturated, organic felt conforming to ASTM-D-226, Type II.*
- g. ICE DAM PROTECTION: *Additional ice dam protection shall be installed per IBC NJ and shall extend up the roof from each lower edge to a point 24" inside the building exterior wall line at minimum. Ice dam membrane shall also be provided at eaves, rakes, hips, ridges, penetrations, etcetera.*

07 32 13 Clay Roof Tiles – Basis of Design

- Legacy Collection Spanish Barrel Tile by Ludowici Roof Tile Inc. or Approved Equal
Color: Clay Red, Size (typ.): 13-1/4" or 18-3/8"

07 40 00 Roofing and Siding Panels07 40 00 Roofing and Siding Panels – General Requirements

- a. ALUMINUM COMPOSITE: *Fire Rated Core.*
- b. CORRUGATED PANELS: *Galvalume, Aluminum or Galvanized Steel.*
- c. FINISH: *Fluoropolymer, 70% resin complying with AAMA 2605.*

07 42 43 Composite Roof Panels – Basis of Design

- Alucobond or Approved Equal (*ex.: CCIS, NURS*)

07 42 13 Metal Wall Panels – Basis of Design

- Econolap, 1/4" by CENTRIA or Approved Equal

07 50 00 Membrane Roofing07 50 00 Membrane Roofing – General Requirements

- a. A fully adhered, 60-mil, non-reinforced EPDM (*ethylene propylene diene monomer*) membrane system is the preferred flexible membrane system for new construction. A fully adhered 60-mil TPO (*thermoplastic polyolefin*) system is acceptable if approved by the University Project Manager.
- b. A four-ply asphalt system is the preferred built-up bituminous roofing system. Modified-bitumen cap sheets are acceptable but not preferred.
- c. These systems shall have a minimum twenty year warranty.
- d. PVC type membranes shall be utilized only near mechanical equipment or grease exhaust where oil or grease may cause contamination.
- e. WIND UPLIFT PERFORMANCE: *Roof system shall be designed to satisfy FM Global wind uplift requirements.*
- f. FIRE RESISTANCE PERFORMANCE: *Roof system shall achieve a UL Class A rating when tested in accordance with UL-790.*
- g. DRAINAGE: *Roof systems shall be provided with positive drainage where all standing water dissipates within 48 hours after precipitation ends.*
- h. SLOPE: *A minimum slope of 1/4" per foot is required on all flat or low-slope roofs. Sloping the deck is preferred to sloping the insulation.*
- i. LAYOUT: *Keep shape of roof areas as simple as possible. Use curbed roof relief and/or expansion joints to divide roof rectangularly.*
- j. ROOF-MOUNTED EQUIPMENT: *Each piece of roof-mounted equipment shall be installed on an approved box curb appropriately flashed into the roofing system or shall otherwise be supported so as to provide a minimum 3' of clear space between the roof surface and the bottom of the equipment support structure to facilitate roof maintenance and replacement. Equipment no longer in use shall be removed along with associated curbs, piping, and pipe supports.*
- k. ROOFTOP EQUIPMENT CONSIDERATIONS: *Visual screening for rooftop mechanical equipment and structures shall be compatible with the design of the building. Acoustic mitigation of equipment shall be considered to minimize impacts on pedestrians and neighbors. Aesthetic requirements for solar and cellular rooftop equipment shall be coordinated with the Project Manager. Structural components shall be considered for rooftop equipment and shelters.*
- l. Environmental conditions (temperature, humidity, and ventilation) shall be maintained within manufacturer-recommended limits for optimum results. Products shall not be installed under environmental conditions that are outside of the manufacturer's absolute limits.
- m. Safety Data Sheets (SDS) shall be on location at all times during the transportation, storage and application of materials.

- n. New roofing shall be complete and weathertight at the end of the work day.
- a. The roof system manufacturer's technical personnel shall inspect installation at completion and submit a report to the Project Manager, who shall be notified 48 hours in advance of the date and time of inspection. All work done after final inspection must be reinspected and certified.
- p. ROOF REPLACEMENT: *When undertaking replacement of a roof, the load bearing capacity and structural integrity of the roof shall be reviewed. Structural repairs and/or upgrades shall be accomplished alongside roof replacement projects as appropriate. The same is true of roof drainage systems.*
- q. Manufacturers – *Subject to compliance with requirements, provide products by one of the following or an approved equal:*
 - Carlisle Syntec Systems
 - Firestone Building Products
 - The Garland Company
 - Versico Roofing Systems

07 54 19 Polyvinyl-Chloride Roofing – Basis of Design

- Sika Sarnafil or Approved Equal, Color: White

07 60 00 Flashing and Sheet Metal

07 60 00 Flashing and Sheet Metal – General Requirements

- a. Sheet metal flashing and trim fabrication shall comply with the recommendations in SMACNA's "Architectural Sheet Metal Manual" for the design, dimensions, metal, and other item characteristics as well as in accordance with manufacturer recommendations.
- b. Flashing shall be designed and installed to assure that the flashing life is compatible with the masonry life.
- c. All materials shall be Type 316L stainless steel unless otherwise directed by the University Project Manager.
- d. Rigid metal flashings with exposed drip are preferred.
- e. Stainless steel is the University's preferred metal. Copper, galvanized steel, and pre-finished steel shall also be acceptable if budget limitations preclude the use of stainless steel.
- f. Concealed through-wall flashings shall extend beyond and not be cut flush with masonry face until approved by the Project Manager.
- g. EPDM flashing may be used under metal parapet caps, providing it has continuous structural support. PVC flashings shall be prohibited.
- h. Pitch pockets shall be utilized only if other methods are deemed not feasible.
- i. All equipment, pipes, walkways, and appliances shall be mounted on flashed curbs or pipe pedestals.

07 62 00 Sheet Metal Flashing and Trim – Basis of Design

- Englert Inc. or Approved Equal (*Roof Flashings - Soffit, Trim, etc.*)

07 62 13 Fabricated Copings – Basis of Design

- Mazmet Metal Products or Approved Equal

07 70 00 Roof and Wall Specialties and Accessories

07 71 00 Roof Specialties – General Requirements

- a. COUNTERFLASHING SYSTEMS: *A two-piece assembly shall be used to remove counterflashing flanges for removal and replacement of base flashing.*
- b. GUTTERS AND DOWNSPOUTS: *Where gutters are required, hung gutters are preferable to built-in. Design shall allow for thermal movement, safe overflow and ice protection. Provide cleanouts at the base of downspouts for drainage system maintenance. When relining existing built-in gutters, use lead coated copper soldered watertight with expansion provisions. For any gutter installation, the need for leaf guards shall be reviewed with the Project Manager.*
- c. SCUPPERS: *Overflow drains or scuppers shall be provided on roof areas containing drains and shall discharge to an appropriate exterior building location.*
- d. ROOF WALKWAYS: *Manufacturer-recommended walkway pads shall be provided from roof access points to and around rooftop mechanical equipment.*
- e. SNOW GUARDS: *For any snow guard installation, review needs with the University Project Manager. With the exception of asphalt shingles, guards or rails shall be installed on sloped roofs that could deposit snow and ice on walkways, entries, exits, and surface lots. For roofs with long slopes and heavy snow loads, consider two rows of snow fences or snow guards with a snow fence. Consult with a structural engineer for the design of snow guards and snow fences. Adequacy of decks and support structures shall be verified to properly resist snow loads. All snow fence loads shall carry back to structural elements. Decks shall not be relied upon to carry concentrated loads unless designed to do so. Color shall typically match sheet metal; finish shall vary depending on location.*

07 72 53 Snow Guards – Basis of Design

- Alpine PP235LS Aluminum Snow Guard for Ludowici Spanish Tile or Approved Equal

07 80 00 Fire and Smoke Protection07 81 00 Applied Fire Protection – General Requirements

- a. **Spray Fire Resistive Materials:**
 - i. CONCEALED: *Minimum Density 15 pcf, Bond Strength 430 psf*
 - ii. EXPOSED: *Minimum Density 22 pcf, Bond Strength 425 psf*
- b. Manufacturers – *Subject to compliance with requirements, provide products by one of the following or an approved equal:*
 - W. R. Grace and Company
 - Isolatek International
 - Carboline Co.

07 84 00 Firestopping – General Requirements

- a. TEST REQUIREMENTS: *ASTM E2307 Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus.*
- b. INSPECTION REQUIREMENTS: *ASTM E2174 Standard Practice for On-Site Inspection of Installed Firestop Systems.*
- c. THROUGH PENETRATIONS SYSTEMS RECOGNIZED TESTING AGENCIES: *UL Fire Resistance Directory, Volume II (most recent year), Warnock Hersey Certification Listings (most recent year), Omega Point Laboratories (most recent year).*

07 84 13 Penetration Firestopping – General Requirements

- a. When floors, walls, etc. are penetrated, care must be taken not to compromise the integrity of the building structure.
- b. All penetrations of fire rated floors, walls, etc. shall be appropriately firestopped after construction is complete. This includes all penetrations made by new installations as well as any such existing penetrations that are exposed during the renovation work.

07 84 43 Joint Firestopping – Basis of Design

- 3M FireStop Sealant 2000 or 3M Fire Barrier Sealant CP23WB by 3M Fire Protection Products or Approved Equal

07 90 00 Joint Protection07 92 00 Joint Sealants – General Requirements

- a. APPLICATIONS: *Provide elastomeric joint sealants for exterior applications that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.*
- b. PRE-CONSTRUCTION FIELD ADHESION TESTING: *Before installing elastomeric sealants, field test their adhesion to project joint substrates according to the method in ASTM C 794 and C 1521 that is appropriate for the types of project joints.*
- c. VOC CONTENT: *Architectural sealants shall have a VOC content not exceeding 250 g/L. Sealants and sealant primers for nonporous substrates shall have a VOC content not exceeding 250 g/L. Sealants and sealant primers for porous substrates shall have a VOC content not exceeding 775 g/L.*
- d. COLORS OF EXPOSED JOINT SEALANTS: *Generally match adjacent material color or match darker color if adjacent materials are different colors.*
- e. ELASTOMERIC SEALANTS: *Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.*
- f. STAIN-TEST-RESPONSE CHARACTERISTICS: *Where elastomeric sealants are specified to be non-staining to porous substrates, products provided shall have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.*
- g. SUITABILITY FOR IMMERSION IN LIQUIDS: *Where elastomeric sealants are indicated for Use I for joints that will be continuously immersed in liquids, products provided shall have undergone testing according to ASTM C 1247 and shall qualify for the length of exposure indicated by reference to ASTM C 920 for Class 1 or 2. Liquid used for testing sealants is deionized water, unless otherwise indicated.*
- h. EXTERIOR WALL SEALANT: *One part Silicone compliant with ASTM C920, Type S, Grade NS, Class 50 standards. Two part Polyurethane compliant with ASTM C920, Type M, Grade NS, Class 50 standards.*
- i. BACK UP MATERIALS: *Non-staining, non-absorbent, compatible with sealant and primer.*
- j. Basis of Design – *Subject to compliance with requirements, provide products by one of the following or an approved equal:*
 - Tremco or Approved Equal

DIVISION 08 – OPENINGS

Related Sections

- a. DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

08 10 00 Doors and Frames

08 10 00 Doors and Frames – General Requirements

- a. EXTERIOR DOORS: Exterior doors shall be of aluminum, fiberglass, stainless steel or insulated galvanized steel construction.
- b. INTERIOR DOORS: Interior doors shall be hollow metal doors with steel frames or solid core wood doors with steel frames.
- c. All doors will be keyed into the University's keying system. Final keying and coordination shall be provided by the University.
- d. Construction cores shall be provided during the project and shall be removed by the Contractor upon project turnover.

08 11 00 Metal Doors and Frames – General Requirements

- a. Typical interior locations shall be 18-gauge door, 16-gauge frame.
- b. Mechanical rooms and exterior locations shall be 16-gauge door, 14-gauge frame.
- c. Exterior doors shall be insulated. Exterior frames shall be thermally broken.
- d. Finishes for exterior doors and frames shall be hot dipped galvanized conforming to ASTM A 924 and A 653, A-60 coating.
- e. Double-door openings shall include a keyed removable center mullion.

08 11 13 Hollow Metal Doors and Frames – General Requirements

- a. The use of hollow metal frames for interior doors, sidelights, and borrow lights shall generally be required throughout all building projects. Exceptions may be granted when use of alternative systems is appropriate or in renovations where it is desired to match existing construction.
- b. **Frame Construction:**
 - i. All frames in new construction shall be full weld unit type fabrication. Joints shall be mitered and externally welded; contact edges closed tight. Exposed surface welds dressed smooth and flush. Knock down frame construction may be used in existing remodels.
 - ii. Comply with the National Association of Architectural Metal Manufacturers (NAAMM) Standard HMMA-820.
- c. **Frame Installation:**
 - i. Loose glazing stops shall be 20 gauge minimum.
 - ii. Except on weatherstripped frames, drill stops shall receive three silencers on single door frame strike jambs and two silencers on double-door frame heads.
 - iii. Provide three anchors minimum per jamb for doors up to 7'-6" high. Provide four anchors for doors 7'-6" high up to and including 8'-0" high. Provide one anchor per every two feet for doors over 8'-0" high.
- d. **Frame Profile:**
 - i. All hollow metal door or vision panel frames shall have a minimum 2" wide face dimension.
 - ii. Use of frames narrower than this have been shown to result in installation and maintenance problems over the long term.
- e. Basis of Design – *Subject to compliance with requirements, provide one of the following products or an approved equal:*
 - Acme; Ceco; Copco; Curries; Galaxy Metal Products; Steelcraft or Approved Equal

08 14 00 Wood Doors – General Requirements

- a. All wood doors shall be solid core construction and comply with Architectural Woodworking Institute (AWI) Premium Grade.
- b. All shall have solid blocking for all hardware including emergency exit devices.
- c. Exterior doors that swing into the weather shall be capped and have no finger joints.
- d. Stiles and rails of exterior doors shall be of laminated construction, not solid wood.
- e. Doors that will be field painted shall have a MDO face. Veneer shall conform to AWI, AA grade veneer with 3" wide leaf. Minimum veneer thickness shall be not less than 1/50" after sanding.

08 30 00 Specialty Doors and Frames

08 33 23 Overhead Coiling Doors – Basis of Design

- Clopay; Cookson; Cornell Iron Works; McKeon Rolling Steel Door Company; Overhead Door Company or Approved Equal

08 33 36 Side Coiling Grilles – Basis of Design

- Cookson; Dynamic Closures Corporation; Metro Door Econoguard; Overhead Door Company or Approved Equal

08 40 00 Entrances and Storefronts08 40 00 Entrances and Storefronts – Basis of Design

- Kawneer North America; EFCO Corp.; Raco; Verstrac; Vistawall; YKK AP America Inc. or Approved Equal

08 41 13 Aluminum-Framed Entrances and Storefronts – Basis of Design

- Kawneer Trifab VersaGlaze 451T Framing System or Approved Equal (*Exterior Windows*)
- Tubelite Inc. 14000 Series Storefront Framing or Approved Equal (*Exterior Entrances*)
- Manufacturers – *Provide basis of design product or approved equal by one of the following:*
 - EFCO Corp., US Aluminum (CR Laurence), Vistawall, YKK AP America Inc.

08 41 13.13 Fire-Rated Glass and Glazing Systems – Basis of Design

- Fireframes Aluminum Series fire-rated frame system by Technical Glass Products or Approved Equal

08 41 26 All-Glass Entrances and Storefronts – Basis of Design

- Metro-Wall VETRO Series or Approved Equal
- Manufacturers – *Provide basis of design product or approved equal by one of the following:*
 - Kawneer North America, Transwall

08 43 13 Aluminum-Framed Storefronts – Basis of Design

- Kawneer Trifab 400 Non-Thermal Framing System or Approved Equal (*Interior*)

08 43 29 Sliding Storefronts – Basis of Design

- Kawneer North America; Wausau Windows; YKK AP America Inc. or Approved Equal

08 44 00 Curtain Wall and Glazed Assemblies – General Requirements

- Glazed curtain walls shall be of true “curtain wall” construction or “storefront” construction.
- All glazing systems shall have fully captured glass with pressure plates at all glass edges and snap on mullion covers.
- ALUMINUM FINISH: *Fluoropolymer, 70% resin complying with AAMA 2605.*

08 44 13 Glazed Aluminum Curtain Walls – Basis of Design

- EFCO Corp.; Kawneer North America; Trulite; US Aluminum; Wausau Window & Door Systems or Approved Equal

08 50 00 Windows08 50 00 Windows – General Requirements

- Windows shall be of the highest quality available with a proven balance mechanism.
- Security screens or gratings may be considered for installation where additional security is necessary.
- All windows shall be securable, preferably with locks, especially those located on ground/lower floors.
- Classroom windows shall typically be placed in sidewalls or rear walls, be avoided along instructional walls, and not swing into classrooms.

08 51 13 Aluminum Windows – Basis of Design

- EFCO Corp.; Graham; Traco; Wausau Window and Door Systems or Approved Equal

08 60 00 Roof Windows and Skylights08 63 00 Metal Framed Skylights – Basis of Design

- Gammans Industries Inc.; Super Sky Products Inc. 450 Series; Wasco Products Inc. or Approved Equal

08 70 00 Hardware**08 71 00 Door Hardware – General Requirements**

- a. ACCESS CONTROL VS. LOCKSMITH SERVICES: *Locksmith services include lock repairs and changes, security hardware repairs and maintenance, master and code key cutting, panic device installation and maintenance, ADA entrance and automatic door operator service, and emergency lockout services. Access Control services include physical and electronic access control system install and maintenance, electronic keypads and keyless entry, electronic keybox programming and maintenance, security alarm install and maintenance, security locks install and operations, access control system and electronic locking.*
- b. All specified hardware shall comply with all applicable building codes, life safety codes, and ADA requirements.
- c. Hardwired card access systems shall be required at all primary building entries. All other doors shall be electronically monitored.
- d. All hardware finishes shall match existing hardware in the surrounding area and shall be determined in coordination with the Project Manager.
- e. Projects involving historical elements may involve additional considerations and shall be reviewed by the Project Manager and Lock Services.
- f. Basis of Design: *See below for each individual item type.*
 - i. **Hinges:**
 - Bommer Industries or Hager Companies or McKinney Products
 - ii. **Door Push Plates and Pulls:**
 - Burns Manufacturing or Rockwood Manufacturing or Trimco
 - iii. **Flush Bolts and Surface Bolts:**
 - Burns Manufacturing or Rockwood Manufacturing or Trimco
 - iv. **Patented Cylinders:**
 - Medeco X4 Series 7 Pin (*No substitutions*)
 - v. **Mortise Locksets:**
 - Sargent Manufacturing 8200 Series or Best 45H Series (*No substitutions*)
 - vi. **Cylindrical Locksets:**
 - Sargent Manufacturing 11 Line or Best 9K Series (*No substitutions*)
 - vii. **Wireless Integrated Card Reader Mortise Locks (WiFi Application Only):**
 - ACADEMIC BUILDINGS: ASSA ABLOY ES100 Series (*No substitutions*)
 - RESIDENCE BUILDINGS: ASSA ABLOY IN120 Series with Keypad (*No substitutions*)
 - viii. **Wireless Integrated Card Reader Cylindrical Locks (WiFi Application Only):**
 - ACADEMIC BUILDINGS: ASSA ABLOY ES100 Series (*No substitutions*)
 - RESIDENCE BUILDINGS: ASSA ABLOY IN120 Series with Keypad (*No substitutions*)
 - ix. **Mortise Deadlocks, Small Case:**
 - Sargent Manufacturing 4870 Series (*No substitutions*)
 - x. **Push Rail Exit Devices (Heavy-Duty):**
 - Allegion Von Duprin 98/99 Series (*No substitutions*)
 - xi. **Tube Steel Removable Mullions:**
 - Sargent Manufacturing 980S Series (*No substitutions*)
 - xii. **Door Closers, Surface-Mounted (Heavy-Duty):**
 - EXTERNAL: LCN 4000 Series (*No substitutions*)
 - INTERNAL: Corbin Russwin DC6200 Series (*No substitutions*)

08 71 13 Automatic Door Operators – General Requirements

- a. An ADA-compliant power-operated door with either arm-height (42") and foot-plate-height (6") push plate type actuator switches or continuous vertical push plate shall be provided at no less than one entrance (*preferably the main entrance*) for all campus buildings.
- b. Alternatives (*i.e. touchless wave to open activation switches or proximity readers*) may be proposed in select instances where appropriate and feasible.
- c. ADA door operator push buttons shall be located within 10' of the door and shall be located so as to not encroach the door opening.
- d. INSTALLATION AND CONNECTIVITY: Either hardwired or battery-powered actuators shall be acceptable for installation. Locations that do not allow for hardwired installation should opt to use push to open actuator switches due to operational and maintenance considerations.
- e. Operators shall be installed in coordination with Access Control and shall be maintained in coordination with the University Lock Shop.
- f. Basis of Design: *See below for each individual item type.*
 - i. **Hands-Free Switches:**
 - **CM-331 Series SureWave Touchless Switches** by Camden Door Controls or Approved Equal

08 74 00 Non-Integrated Access Control Hardware – General Requirements

- a. Buildings shall incorporate HID iCLASS credential readers configured to support Mobile Access, Bluetooth Low Energy, and NFC.

08 80 00 Glazing08 81 00 Glass Glazing – General Requirements

- a. All windows within 18" of a walking surface shall be tempered glass as required by code.
- b. Glass in doors, if provided, shall be tempered glass unless otherwise required by code.
- c. Glazing in hazardous locations shall be of especially durable construction (*laminated glass, tempered glass, wire glass, or polycarbonate*) even if not required by code. Refer to the most recent International Building Code, NJ Edition Sections 2406.4, Marked identification as required per code.

08 81 23 Exterior Glass Glazing – General Requirements

- a. All glazing for exterior applications shall be of the insulated double pane type that incorporates metal framing separated by a thermal break that is locked into the extrusions, not merely a sealant. Triple glazed units may be used, provided the size is limited.
- b. Use of Low-E exterior glazing is encouraged for energy conservation and occupant comfort. Low-E coatings shall comply with energy code.
- c. Clear Insulated Low-E Coated Glass shall be used at all fixed exterior windows.
- d. Fully Tempered Clear 1" Thick Insulated Low-E-Coated Glass shall be used at all exterior doors and adjacent sidelites with glazing.
- e. Insulated glass shall be minimum 1" thick and in compliance with ASTM E774.
- f. Special exterior window or glazing construction shall be employed as appropriate in conjunction with a winter interior design through relative humidity above 35% and/or a summer interior design space temperature below 65°F.
- g. Opportunities to provide natural lighting shall be taken when possible while remaining in compliance with the latest ASHRAE Standard 90.1.
- h. Large expanses of exterior glazing, particularly those located on building faces that are exposed to solar gain (*i.e. west exposures*), shall be planned and designed with careful consideration for potential summer heat gain, winter heat loss, glare and wind loading issues.

08 81 26 Interior Glass Glazing – General Requirements

- a. 3/8" Thk. Tempered Polished Safety Glass shall be used at interior adjacent sidelites with glazing and non-stairwell interior doors with glazing.
- b. 1/4" Thk. Fire-Rated Glass shall be used at stairwell interior doors with glazing.
- c. 1" Insulated Tempered STC 35 Rated Glazing shall be used at fixed interior room and door glazing.
- d. 1" Insulated Tempered One-Way STC 35 Rated Glazing shall be used at fixed interior control room windows.

08 84 00 Plastic Glazing – Basis of Design

- CYRO Industries; General Electric Company; Sheffield Plastics, Inc. or Approved Equal

08 88 13 Fire-Resistant Glazing – Basis of Design

- Pilkington Pyrostop by the Pilkington Group or Approved Equal

08 88 53 Security Glazing – Basis of Design

- TSS Acrylic, Level 2 ARA (Abrasion Resistant Acrylic) 1.375" by Total Security Solutions or Approved Equal
- Manufacturers – *Provide basis of design product or approved equal by one of the following:*
 - Transparent Ballistic Solutions, Inc.

DIVISION 09 – FINISHES

Related Sections

a. DIVISION 02 – EXISTING CONDITIONS

09 00 00 Finishes – General Requirements

- a. Interior finishes shall be determined on a per-project basis and consider space use, aesthetics, durability, maintenance, safety, and sustainability.
- b. Interior finish selections for renovated or remodeled spaces shall match and blend with existing materials as best as possible when appropriate.
- c. All proposed project materials, colors, finishes, product specifications, applications and other details shall be reviewed by the Project Manager prior to completion of the Construction Documents phase.
- d. Contractors shall prepare a list of project materials used including manufacturer and catalog numbers of finish materials and paint numbers.
- e. All interior finishes shall meet Class A Fire Rating as well as meet all applicable building codes and University use requirements for the area.
- f. LOW-EMITTING MATERIALS: *Follow U.S. Green Building Council (USGBC) LEED v4 guidance on low-emitting materials.*
- g. ATTIC STOCK: *Contractors may be asked to provide the University with spare replacement material for future maintenance or repair purposes.*
- h. REMEDIATION: *If existing asbestos or lead paint is suspected, the University shall be notified to conduct any necessary testing and remediation in coordination with the Office of Environmental Health and Safety.*

09 20 00 Plaster and Gypsum Board09 21 16 Gypsum Board Assemblies – General Requirements

- a. **Fixed Partition Walls:**
 - i. Metal stud and gypsum board is the preferred wall construction type.
 - ii. All gypsum shall be minimum 5/8" thick unless used in a multi-layer application.
 - iii. All partitions in new construction projects shall extend to the underside of the deck above to provide stability and sound isolation.
 - iv. Wood studs shall typically not be permitted. Wood studs, if used, must be fire-rated.
- b. **Corridors and Public Areas:**
 - i. Corridors and other general public area walls shall be of CMU or metal stud wall construction with high-impact abuse-resistant gypsum board having abuse-resistant corner guards. If a higher level of finish is desired, CMU may be plastered prior to painting.
 - ii. Corridor walls extend to the structural ceiling.
 - iii. Corner guards shall be installed as appropriate on wall corners that are exposed to traffic flow.
- c. **Service Rooms/Areas:**
 - i. Corridor partition wall requirements also apply to service spaces such as custodial rooms, recycling rooms, and receiving areas.
- d. **Restrooms, Showers, and Locker Rooms:**
 - i. Restroom, shower and locker room walls shall be of CMU or metal stud wall construction with moisture and mold-resistant gypsum.
 - ii. Walls shall be finished with floor-matching ceramic tile to a height above all fixtures in order to facilitate cleaning.
 - iii. Base molding shall be ceramic cove to connect the floor and wall tile.
- e. **Equipment Rooms:**
 - i. Mechanical rooms subject to moisture shall be of CMU or poured concrete wall construction.
 - ii. Other mechanical rooms, electrical equipment room, elevator machine room and hoistway walls shall be of CMU or poured concrete construction or metal stud wall with abuse-resistant gypsum board and sound batt insulation and extend to the structural ceiling.
- f. **Sound Transmission:**
 - i. Acoustical sound transmission shall be considered in the design of partition walls.
 - ii. All partition walls where sound transmission is a concern shall be extended to the structural ceiling above.
 - iii. Installing sound attenuating batts in stud type partition walls shall be considered with proper opening and perimeter sealing.
 - iv. Stud partition locations may provide gypsum board to the ceiling on only one side to support batts and assist with attenuation.
 - v. STC-RATED ASSEMBLIES: *For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.*
- g. **Minimum Deflection Criteria:**
 - i. SHAFTWALL: *10 psf for maximum height of wall with deflection limited to L/240.*
 - ii. DRYWALL: *5 psf for maximum height of wall with deflection limited to L/240 for standard partitions or L/360 for tile partitions.*

09 22 13 Metal Furring – Basis of Design

- Clark Steel Framing Systems, Dietrich Industries, MarinoWare, National Gypsum Co., Unimast or Approved Equal

09 23 00 Gypsum Plastering – Basis of Design

- American Gypsum Co., G-P Gypsum Corp., National Gypsum Co., United States Gypsum Co. or Approved Equal

09 24 23 Cement Stucco – Basis of Design

- StoPowerwall Stucco by Sto Corp. or Approved Equal

09 28 00 Backing Boards and Underlayments – Basis of Design

- Georgia-Pacific Dens-Shield Tile Backer or Schluter System Kerdi-Board or Approved Equal

09 29 00 Gypsum Board – General Requirements

- a. Interior gypsum board shall be specified with consideration to application as well as compliance with applicable code and testing requirements.
- b. GENERAL GYPSUM BOARD: *ASTM C 1396/C 1396M*.
 - i. Install all interior finishes unless otherwise indicated. Provide sag-resistant type for ceiling surfaces.
- c. ABUSE-RESISTANT GYPSUM BOARD: *ASTM C 1396/C 1396M gypsum board, tested according to ASTM C 1629/C 1629M*.
 - i. Install in corridors except at existing gypsum plaster, unsecured public areas, cafés, and trash rooms (*install requirement limit 8' AFF*).
- d. MOLD-RESISTANT GYPSUM BOARD: *ASTM C 1396/C 1396M, with moisture- and mold-resistant core and paper surfaces*.
 - i. Install at restrooms without tile backer board indicated, laundry rooms, food preparation spaces, utility rooms and janitor closets.
- e. WATER-RESISTANT GYPSUM TILE BACKING BOARD: *ASTM C 1178, with manufacturer's standard edges*.
 - i. Install behind tile installations as indicated (*restrooms, shower walls*) with 1/4" gap where panels abut other construction or penetrations.
Where tile backing panels abut other panels in the same plane, shim surfaces to produce a uniform plane across panels.
- f. RECYCLED CONTENT: *Post-consumer recycled content plus one-half of pre-consumer recycled content not less than 75 percent.*
- g. REGIONAL MATERIALS: *Specified products shall be manufactured within 500 miles of the project site.*
- h. SIZE: *Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.*

09 29 82 Gypsum Board Fire Protection – General Requirements

- a. For fire-resistance-rated assemblies, the materials and construction provided shall be identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- b. All fire rated walls and partitions shall be labeled with their rating, spaced so each element is clearly identified in each room.
- c. All penetrations in fire-rated floors, walls, ceilings and partitions shall be protected per code with approved and listed assemblies; labels shall be placed adjacent to each penetration identifying the listed assembly used.

09 50 00 Ceilings09 50 00 Ceilings – General Requirements

- a. A suspended 24" x 24" acoustical ceiling system shall generally be installed as required and shall comply with all applicable codes.
- b. Ceiling designs shall take into consideration easy access for maintenance and other access needs including technology installations.
- c. A single type of ceiling tile shall generally be used throughout a building in order to minimize maintenance costs.
- d. In non-standard areas with an exposed structural ceiling or suspended drywall or plaster ceiling, coordinate painting on a per-project basis.
- e. Ceiling finishes shall follow the specifications of LEED v4 Indoor Environmental Quality prerequisite and credit for Acoustic Performance.
- f. Acoustically-absorbent ceiling material shall be used along the sides and rear of large classrooms and lecture halls resulting in a reverberation time of less than 0.6 seconds when the space is unoccupied. Acoustical tiles shall have a Noise Reduction Coefficient (NRC) of 0.75 or better.
- g. Classroom ceilings shall be a light color and have a minimum reflectance value of 80.

09 53 00 Acoustical Ceiling Suspension Assemblies – Basis of Design

- Suspended Acoustical Lay-In Ceiling System by Armstrong World Industries or Approved Equal
Dune Tegular Tile, Optima Square Tegular Tile, or Ultima Beveled Tegular Tile
Finish/Color: White

09 60 00 Flooring09 60 00 Flooring – General Requirements

- a. Durability, maintainability and life-cycle cost analysis shall guide the selection of appropriate flooring materials.
- b. All flooring shall comply with applicable building codes and regulations and meet or exceed slip-resistant requirements, especially in wet areas.
- c. STRUCTURAL CONSIDERATIONS: *Floors shall be designed for assembly floor loads, structural loads or code-required loads, whichever is higher.*
- d. OCCUPATIONAL HEALTH: *Installation shall comply with manufacturer instructions and Material Safety Data Sheets (MSDS).*
- e. VOC CONTENT: *Glues and finishes with low or no VOCs shall be used in all floorings.*
- f. A single flooring material shall be used within a room or usable area of a building unless otherwise approved by the University.
- g. New and “unproven” floor systems shall be avoided.
- h. Walk-off carpet, resilient flooring with mats, or walk-off grates shall be installed in vestibules at least 10’ from the entry door into the space.
- i. Installation of carpet and wood flooring shall be avoided in food service areas, laboratories, medical treatment areas and restrooms.

09 64 00 Wood Flooring – General Requirements

- a. Use of wood flooring in spaces other than athletic areas and theatrical spaces shall be approved by the University.

09 65 00 Resilient Flooring – General Requirements

- a. Resilient flooring shall be commercial/institutional grade and feature slight color and pattern variations in order to conceal dirt and stains.
- b. **Resilient Base and Accessories:**
 - i. Standard base molding shall typically be rubber or vinyl construction (4” height).
 - ii. Restroom and Locker Room base molding shall be tile construction with integral or cove base to match floor and wall.
 - iii. Laboratory flooring shall have a 6” seamless cove.
 - iv. Terrazzo, marble, hardwood, and other specialty molding may be used to match other finishes and features.
- c. **Resilient Tile Flooring:**
 - i. All tile flooring products shall have a minimum dynamic coefficient of friction (DCOF) value in compliance with ANSI A326.3.
 - ii. Products intended for use in level interior spaces intended to be walked upon when wet shall have a DCOF value of 0.42 or higher.
 - iii. Products intended for use in outdoor spaces shall have a DCOF value of 0.55 or higher.

09 68 00 Carpeting – General Requirements

- a. Carpet tile shall be typically preferred over broadloom. Broadloom may be acceptable for use in certain applications including auditorium or stair installations.
- b. Carpet insets shall generally be avoided.
- c. Walk-off carpet shall be used at high-traffic building entrances.
- d. WARRANTY: Carpet shall have a lifetime warranty against edge raveling and delamination and a minimum 10 year warranty against fading.
- e. Classroom carpet shall be a commercial/institutional grade continuous-filament type 6,6 nylon, 100% solution dyed, tufted or fusion bonded level loop, anti-static, U.L. Class A. carpet tile with the exception of spaces with sloped or tiered floors.

09 70 00 Wall Finishes09 70 00 Wall Finishes – General Requirements

- a. All wall finishes shall comply with all applicable building codes and regulations.
- b. Wall finishes shall follow the specifications of LEED v4 Indoor Environmental Quality prerequisite and credit for Acoustic Performance.
- c. Selection of proposed wall finishes shall take into consideration appropriate space use and adjacent materials.
- d. New and “unproven” wall finishes should be avoided.
- e. Wall finishes shall generally be painted masonry block or drywall. Wall finishes in restrooms, locker rooms, and showers shall incorporate tile as required. Wall finishes in the balance of these room types as well as in laboratories, animal facilities, service facilities, etc. that are exposed to high humidity and/or require water wash-down for cleaning shall be water-resistant (*e.g. one that incorporates a two-part epoxy finish coat*).
- f. CLASSROOM CHAIR RAILS: *Classrooms with movable furniture shall include a simple profile chair rail to protect walls from contact with furniture. Chair rails shall typically be installed 25”-33” above the finished floor (verify mounting height and width with specified furniture on a per-project basis). Chair rails shall not be required on teaching walls where it may conflict with dry erase marker board mounting height requirements.*
- g. ACOUSTICAL WALL PANELS: *Acoustical wall panels shall be provided where necessary and shall meet CAL 133 requirements.*

09 90 00 Painting and Coating**09 91 00 Painting – General Requirements**

- a. All proposed paint selections shall be reviewed by the Project Manager on a per-project basis.
- b. Paint selection shall take into consideration aesthetics, appropriateness of application, contextual consistency, durability, and sustainability.
- c. Paint that is specified to match an existing paint already in place does not need to be reviewed.
- d. SCHEDULES FOR PAINTING AND COATING: *See below for information regarding campus standard painting and coating finishes.*
- e. Manufacturers – *Unless otherwise specified, provide products from one of the following manufacturers or an approved equal:*
 - Benjamin Moore (BM)
 - Sherwin-Williams (SW)

09 91 13 Exterior Painting – General Requirements

- a. All paints and coatings used in exterior applications shall be weather-resistant.
- b. Colonial Red shall be the standard paint color for metal doors and frames, standing seam roofs, and sheet metal coping.
- c. BM Bittersweet Chocolate 2114-10 shall be the standard bronze color for historic applications or certain exterior equipment.
- d. Certain exterior equipment such as air conditioner compressors, generators, or mechanical equipment situated directly near a building or in a prominent visual sightline may be painted a more contextually-appropriate color (*typically a bronze or green finish*) as directed by the University.

09 91 23 Interior Painting – General Requirements

- a. BM Decorator's White OC-149 shall be the standard base color for new construction or for remodels where an entire area is being repainted.
- b. **Paint Sheens/Finishes:**
 - i. PUBLIC AREAS, CLASSROOMS, PRIVATE OFFICES, APARTMENT WALLS: *Eggshell or satin finish*
 - ii. CORRIDORS, RESTROOMS, AND KITCHENS: *Semi-gloss finish*
 - iii. CEILING APPLICATIONS: *Flat or eggshell finish*
 - iv. METAL DOOR FRAMES AND TRIMS: *Semi-gloss finish*
 - v. Other specialty areas shall be reviewed on a per-project basis by the A/E and the University Project Manager.
- c. **Accent Colors:**
 - i. Typical areas of application for accent paint include private offices as well as common and public areas.
 - ii. Selections shall be modern and take into consideration the building style, materials, and lighting conditions.
 - iii. Buildings, suites or areas shall not exceed two to three accent paints per area.
 - iv. UNIVERSITY COLORS: *The University brand color palette, developed by University Communications and Marketing, may be referenced when selecting accent colors. Colors shall be reviewed in the field prior to application to account for individual conditions and light variances.*

Description	Pantone Color	Paint Specification
Primary Brand Color – Red	Pantone PMS 200	SW 6868 Real Red
Secondary Brand Color – Gray	Pantone Cool Gray 8	SW 6256 Serious Grey
Secondary Brand Color – Yellow	Pantone 7548	SW 6907 Forsythia SW 6677 Goldenrod (<i>Alternate</i>)
Secondary Brand Color – Orange	Pantone 1585	SW 6885 Knockout Orange
Secondary Brand Color – Green	Pantone 375	SW 6921 Electric Lime
Secondary Brand Color – Blue	Pantone 7460	SW 6796 Blue Plate
Secondary Brand Color – Navy	Pantone 289	SW 9177 Salty Dog

09 96 00 High-Performance Coatings – General Requirements

- a. High-performance coatings shall be used when appropriate.
- b. HIGH-TEMPERATURE-RESISTANT COATINGS: *Tnemec is the preferred paint manufacturer for metals and high temperature applications.*
- c. ELASTOMERIC COATINGS: *Acrymax AF-135 is the preferred elastomeric coating for walls.*

09 97 00 Special Coatings – General Requirements

- a. DRY ERASE COATINGS: *Use of dry erase coatings as a wall finish shall not be permitted.*

Description/Application		Color/Finish Specification
General/Field Neutral Wall Paint		BM Decorator's White OC-149 / CC-20
EIFS (Exterior Insulation Finish Systems)		China White Dryvit, Sandpebble (SBUS, CELS, CCIS, SCM)
Portland Cement Plaster (Stucco)		Pure White, Fine Texture (ex.: COLE)
Metal Standing Seam Roofs, Sheet Metal Coping		Kynar 500 Colonial Red
Exterior Curtain Wall Storefront Frames		PermaColor 3500 Colonial Red
Metal Doors and Frames		Valspar Colonial Red 394F170
Exterior Metal Railings – Red		Ultra Spec HP DTM Acrylic Enamel, Low Lustre BM Dinner Party AF-300 (ex.: COLE Arcade)
Metal Door Frames – Bronze		SW 7675 Sealskin (ex.: COLE)
Exterior Equipment – Bronze		BM Bittersweet Chocolate 2114-10
Wood Roof Fascia – Bronze		BM Bittersweet Chocolate 2114-10 (ex.: COLE)

DIVISION 10 – SPECIALTIES

10 10 00 Information Specialties

10 11 00 Visual Display Units – General Requirements

- a. Writing surfaces shall be durable with a smooth, non-glare surface.
- b. Size specifications shall vary on a per-project basis.

10 11 16 Markerboards – General Requirements

- a. Markerboards shall have a LCS Porcelain Enamel Steel surface, white color finish, anodized Aluminum frame, and full-length marker tray.
- b. Spline joinery shall be specified in instances when multiple panels are to be joined together.
- c. Basis of Design:
 - AJW Architectural Products or Claridge or Approved Equal

10 11 23 Tackboards – General Requirements

- a. SPECIFICATIONS: *Metal frame, Bulletin Board finish*
- b. Basis of Design:
 - Claridge or Approved Equal
Forbo Bulletin Board Cork

10 13 00 Directories – General Requirements

- a. Directory messaging, installation, and maintenance shall be coordinated with the Office of Capital Planning and Project Management.
- b. Information shall be listed by floor and in ascending order for each floor. Department names shall appear in their official and complete form.
- c. Analog directories are generally preferred over electronic or digital directories for use in buildings.

10 14 00 Signage – General Requirements

- a. All permanent campus signage shall be in compliance with applicable building code and barrier-free requirements.
- b. The design, fabrication, and installation of all new permanent campus signage shall follow current University signage standards.
- c. Signage for all new construction or renovation projects shall be coordinated by the Project Manager.
- d. Any proposed non-standard permanent signage shall be subject to review and approval by the Project Manager prior to installation.
- e. **Donor Recognition Signage:**
 - i. The design, fabrication, and install of all permanent donor recognition signage shall be jointly coordinated between the Offices of Capital Planning and Project Management (*University Facilities*) and Donor Relations (*Development*).
 - ii. Refer to the most recent *University Donor Recognition Guidelines* for complete design standards and administrative procedures.

10 14 14 Exterior Signage – General Requirements

- a. All exterior signage shall be consistent with the latest campus signage standards and shall be reviewed and approved prior to installation.
- b. BUILDING IDENTIFICATION SIGNAGE: *Installation of ground-mounted (a.k.a. post and panel) building signage shall take into consideration its location so as to not place it within sightlines of pin-mounted Building Identification letters for the same building.*
- c. Refer to the most recent *University Exterior Signage Standards* as provided by Capital Planning and Project Management.

10 14 15 Interior Signage – General Requirements

- a. Purchasing and installation of interior project signage may either be included as part of the general construction contract or may be handled under a separate contract as determined by the Project Manager.
- b. Room ID sign messaging shall follow officially-assigned room numbers and/or names in line with University Room Numbering Standards.
- c. Refer to the most recent *University Interior Signage Standards Manual* as provided by Capital Planning and Project Management.

10 14 19 Dimensional Letter Signage – General Requirements

- a. Exterior Building ID letters shall typically be included at all main building entries as well as any other public arrivals or key visual points.
- b. The complete building name may be written in full at the main entrance. Additional instances may simply display the abridged name.

10 20 00 Interior Specialties**10 21 13 Toilet Compartments – General Requirements**

- a. Toilet enclosure partitions shall preferably be ceiling-mounted.
- b. Urinal screens partitions shall preferably be wall-mounted.
- c. Basis of Design – *Subject to compliance with requirements, provide one of the following products or an approved equal:*
 - Bobrick SierraSeries SCRC 1090 or Approved Equal (*ex: COLE*)

10 28 13 Toilet Accessories – General Requirements

- a. Contractor shall provide installation for Owner-furnished products and materials as scheduled.
- b. Locations shall be coordinated alongside other Project work to prevent interference with clearance requirements for access by persons with disabilities and for proper installation, adjustment, operation, cleaning, and servicing of accessories.
- c. All electrical components, devices, and toilet accessories for a Project shall be listed and labeled as they are defined in NFPA 70 and shall be marked for their intended location and application.
- d. Hand dryers are preferred over paper towel dispensers.
- e. Hardwired automated fixtures are preferred over battery-operated ones.
- f. Although the following standards apply to most campus academic and administrative buildings, residence halls and other auxiliary facilities may not necessarily adhere to these standards and shall require different standard accessories as appropriate.
- g. Basis of Design: *See below for each individual item (* indicates owner-supplied item).*

Mirror Unit:

- Bobrick B-290 Series or Approved Equal

Grab Bar:

- American Specialties Inc. 3800 Series, Type 1, Satin Finish

Automatic Liquid Soap Dispenser*:

- Purell ES10 Touch-Free Soap Dispenser, Graphite

Automatic Hand Sanitizer Dispenser*:

- Purell ES10 Hand Sanitizer Dispenser, White

Toilet Tissue Dispenser*:

- Tork 565828 3 Roll Bath Tissue Roll Dispenser for OptiCore, Black or Approved Equal

Toilet Tissue Holder:

- American Standard CR Series 8336.230 or Approved Equal

Paper Towel Dispenser:

- American Specialties Inc. Recessed Paper Towel Disposal 6459, Satin Finish or Approved Equal
- Tork 772728 Mechanical Hand Towel Roll Dispenser or Approved Equal

Sanitary Disposal Bag Dispenser*:

- Scensibles Combination Dispenser/Receptacles SDW, Classic White or Approved Equal

Seat Cover Dispenser*:

- Grainger Tough Guy 22LC68, Smoke

Sanitary Napkin Disposal Unit*:

- Hospesco EvoGen EVNT3-SS No-Touch Napkin Tampon Dispenser Free

Waste Receptacle:

- American Specialties Inc. Model 6459, Stainless Steel or Approved Equal

Coat Hook:

- Bobrick Model B-212 or Approved Equal

Hand Dryer:

- Dyson Airblade V HU02, Sprayed Nickel or Approved Equal
- Excel Xlerator Model XL-BW, 110/120V, 12.5A, 60Hz or Approved Equal

10 28 14 Diaper Changing Station – Basis of Design

- American Specialties Surface-Mounted Horizontal Baby Changing Station, 9013-9 (*High Level Finish*) / 9014 (*Standard Finish*)
- Koala Kare Products KB300-05 Horizontal Baby Changing Station, White Granite or Approved Equal (*ex: COLE*)

10 28 26 Hygiene and Custodial Accessories – General Requirements

- a. Certified green cleaning products shall be supplied in all campus buildings. LEED buildings shall follow University green cleaning policies.
- b. Basis of Design: *See below for each individual item.*

Service Sink:

- Elkay-Fiat MSB3624 Service Sink or Approved Equal, 36" x 24" with fiberglass surround on walls.

Mop and Broom Holder:

- American Specialties Inc. 1308-3, Stainless Steel or Approved Equal, Minimum 6'6" AFF.

Miscellaneous/Other Accessories:

- Rubbermaid Brute Utility Container and Dolly, Gray

10 40 00 Safety Specialties10 43 13 Defibrillator Cabinets – General Requirements

- a. Automated External Defibrillators (AEDs) shall be included in all main campus buildings and include appropriate signage.
- b. Cabinets shall typically be installed off of the main building lobby at a location that does not impede paths of egress.
- c. Purchase and installation shall be coordinated by Montclair State University Emergency Medical Services.
- d. Basis of Design:
 - Standard Size Wall Mount AED Cabinet with Alarm and Strobe by Cardiac Science (*Part Number 180-2021-101*)
Vendor: Team Life, Inc.
 - Projecting Sign - "AED", 3-Way S-21990 by Uline or Approved Equal

10 41 16 Emergency Key Cabinets – General Requirements

- a. NOTE: *Refer to 28 15 25 Electronic Key Management System in this document for information regarding Morse Boxes.*
- b. All buildings shall include a Knox Box to allow for rapid fire department entry in the event of an emergency.
- c. Key boxes shall typically be installed at or near the main building entrance adjacent to the fire alarm panel on the exterior side of the structure or in a designated location as specified by the University Office of Fire Safety. The box shall be mounted at a height of 6'-6" above final grade.
- d. Purchase and installation shall be coordinated by the University Facilities Office of Fire Safety with the Project Manager.
- e. Basis of Design:
 - Knox Box 4400 Series by Knox Company

10 44 00 Fire Protection Specialties – General Requirements

- a. Fire extinguishers and either recessed or semi-recessed cabinets shall be installed in campus buildings as required by code.
 - i. Recessed cabinets shall be used at all locations with available mounting depth.
 - ii. Semi-recessed cabinets shall be used where available depth is not adequate for recessed installation.
- b. Fire Extinguishers shall be owner-supplied in coordination with the University Facilities Office of Fire Safety.
- c. Basis of Design: *See below for each individual item.*

Fire Protection Cabinets:

- Potter Roemer Alta Model 7012, Steel or Approved Equal
- Larsen Model 2409-R4 (*ex: NURS*)

Fire Extinguishers:

- Potter Roemer Model 3010 or Approved Equal

10 50 00 Storage Specialties10 51 13 Metal Lockers – Basis of Design

- F70 Series by Perfix Inc. (*ex: UNPD*)
- Standard Quiet Lockers by List Industries Inc.
- Standard Lockers by Lyon Workspace Products
- Guardian Lockers by Penco Products, Inc., Subsidiary of Vesper Corporation
- Single Point Lockers by Republic Storage Systems Company

DIVISION 11 – EQUIPMENTRelated Sections

- a. DIVISION 22 – PLUMBING

11 00 00 Equipment – General Requirements

- a. EnergyStar rated or other similar energy-efficient models shall be preferred for all new or replacement equipment and appliances.

11 30 00 Residential Equipment11 31 13 Residential Kitchen Appliances – Basis of Design

See below for each individual item type or approved equal. (ex.: STON, RUSS)

Refrigerator:

- GE GWE19JYLF5 Counter-Depth French-Door Refrigerator, Fingerprint Resistant Stainless (ex.: STON, RUSS)

Cooktop and Range:

- GE PHS700AYFS Induction Cooktop with Range (ex.: STON)
- GE PSS93YP9FS Induction Cooktop with Range (ex.: RUSS)

Hood:

- Summit SEH4630SSADA Wall-Mounted Range Hood
- Broan Nutone AR130SS 30-Inch Under-Cabinet Range Hood (ex.: RUSS)

Sink:

- Elkay ELUHAD161655 Lustertone Undermount Stainless Steel Sink, ADA Height (ex.: RUSS)
- Delta Trinsic Collection 9159-DST Single Handle Deck Mounted Gooseneck Faucet (ex.: RUSS)

Microwave:

- Frigidaire GMBS3068BF Gallery 2.2 Cu. Ft. Built-In Microwave (ex.: STON)

11 40 00 Foodservice Equipment11 46 83 Ice Machines – General Requirements

- a. To reduce potable water consumption and annual potable water costs, all new or replacement ice machine units shall be air-cooled unless otherwise directed by the Project Manager. Existing machines that use once-through cooling shall be candidates for replacement.
- b. Basis of Design:
- Hoshizaki America, Inc. or Approved Equal
 - F-1002MRJZ(-C) Modular Ice Machine Slim-Line Series by Hoshizaki (ex.: PNZR)
 - KM-520/660MAJ-E Slim-Line Modular Crescent Cuber by Hoshizaki (ex.: RHAA, YOGI, FLDH, SOFT)
 - KM-1301S_H-E Stackable Ice Cuber by Hoshizaki (ex.: STCT Cafeteria)
 - Water Filters: Hoshizaki H9320-51/52/53 Filter (Single/Double/Triple)

11 50 00 Educational and Scientific Equipment11 52 13 Projection Screens – Basis of Design

- Tensioned Contour Electrol Wide Format by Da-Lite Screen Company or Approved Equal
 - Electric Projection Screen: Da-Lite Tensioned Advantage Electrol
 - Manual Projection Screen: Da-Lite Model C with CSR
- Manufacturers – Subject to compliance with requirements, provide basis of design product or approved equal by one of the following:
 - BEI Audio-Visual Products
 - Bretford, Inc.
 - Draper Inc.
 - Stewart Filmscreen Corporation

11 53 00 Laboratory Equipment – General Requirements

- a. Laboratory equipment needs shall be determined on a per-project basis in consultation with the University Project Manager, key building stakeholders, and the Office of Environmental Health and Safety.

11 53 13 Laboratory Fume Hoods – Basis of Design

- Hamilton SafeAire II Fume Hood (*ex.: RICH*)
- Labconco (*ex.: CELS*)
- Mott Manufacturing

11 80 00 Facility Maintenance and Operation Equipment

11 81 29 Facility Fall Protection – General Requirements

- a. All projects shall comply with the latest Occupational Safety and Health Administration (OSHA) standards for engineering controls of fall protection including guardrails and anchorage points or occupant use and maintenance work as required.
- b. A fall protection plan shall be submitted with a Safety Plan for any project where fall protection would be required by OSHA.
- c. All facility fall protection needs shall be reviewed in consultation with the University Office of Environmental Health and Safety.

DIVISION 12 – FURNISHINGS

12 20 00 Window Treatments

12 20 00 Window Treatments – General Requirements

- a. All window treatments shall be compliant with all applicable building codes and regulations.

12 21 00 Window Blinds – General Requirements

- a. Blinds that are integral to multi-pane windows (i.e. located between glass panes) shall not be acceptable.

12 21 26 Black-Out Blinds – General Requirements

- a. Installation of black-out shades or other specialty window treatments shall be determined and approved on a per-project basis.
- b. Black-out shades shall be installed for academic teaching
- c. Installation shall include light-blocking channels or shall overlap the window opening to prevent light leakage.

12 24 13 Roller Window Shades – Basis of Design

- Draper, Inc. or Approved Equal
3% openness factor, Manual Operation

12 30 00 Casework

12 35 53 Laboratory Casework – General Requirements

- a. All casework work surfaces in chemical laboratories shall be of acid resistant construction even if use of acids is not immediately anticipated.
- b. All casework shall incorporate sufficient utility space and provision for access to utilities to facilitate maintenance.
- c. Casework located adjacent to exterior walls shall also incorporate adequate access to perimeter heating units and utilities.

12 35 53.13 Metal Laboratory Casework – Basis of Design

- Kewaunee Scientific Corp. or Approved Equal

12 36 00 Countertops – General Requirements

- a. Solid surface material (i.e. composite stone, stone, stainless steel) shall be used in wet areas.
- b. High Pressure Laminate (HPL) shall be used in all other non-wet area applications.
- c. Thermally Fused Laminate (TFL) shall not be allowed in any areas.
- d. Countertops in laboratories shall be impervious, stain resistant, seamless, and chemical-resistant.
- e. Phenolic resin may be used in laboratory applications.
- f. All laminate substrates shall be plywood.
- g. In wet areas, backsplash shall be 4" at minimum.

12 40 00 Furnishings and Accessories

12 46 33 Waste Receptacles – General Requirements

- a. **Offices and Conference Rooms:**
 - i. Provide one trash and one recycling receptacle for each office (*where applicable*) and conference room.
 - ii. Basis of Design – *Provide one of the following products or an approved equal:*
 - TRASH CANS: Rubbermaid, Open Top, 7 Gallon, Black
 - RECYCLING CANS: Rubbermaid, Open Top, 7 Gallon, Blue with Recycling Logo
- b. **Classrooms, Community Kitchens, Copy and Mail Rooms:**
 - i. Provide one trash and one recycling receptacle for each classroom, community kitchen, copy room, and mail room.
 - ii. Basis of Design – *Provide one of the following products or an approved equal:*
 - TRASH CANS: Rubbermaid Slim Jim, 23 Gallon, Black
 - RECYCLING CANS: Rubbermaid Slim Jim, 23 Gallon, Blue with Recycling Logo

12 50 00 Furniture12 56 00 Furniture – General Requirements

- a. All interior furniture selections shall be reviewed by the University Project Manager.
- b. Standard finish selection criteria shall include availability and lead time, cost, durability, environmental performance, and maintainability.
- c. All upholstered furnishings shall meet CAL 133 rating and have a heavy-duty stain repellent (*i.e. crypton or nanotex finish*) fabric that meets or exceeds 50,000 double-rubs per the Wyzenbeck method.
- d. SURPLUS FURNITURE: *University-owned furniture and ancillary assets such as workspace and instructional furniture, tables, seating, storage, architectural interior products, and other accessories that are no longer needed or useful in their current space but are still in usable condition shall be considered for diversion to the Surplus Furniture Program coordinated by University Facilities.*

12 56 33 Classroom Furniture – General Requirements

- a. Typical types of classroom student seating shall include movable tablet-arm chairs, fixed seats with folding or fixed tablet arms, movable tables and chairs, fixed tables and chairs, and fixed auditorium seats with folding tablet arms.
- b. Seats at table assemblies shall have a minimum seat width of 19 inches.
- c. Tables shall be sturdy, 18-24 inch deep units with a HPL top and a flat PVC edge banding.
- d. The minimum table width for each student shall generally be 30 linear inches.
- e. Fixed tables shall be anchored solidly to the floor system.
- f. Accessible tables shall be designed to permit one-handed vertical height adjustment.

12 56 39 Lecterns – General Requirements

- a. Standardized lecterns shall be used across campus and shall be specified to match the level of technology planned for a specific classroom.
- b. The typical lectern shall serve as the instructor's desk and a locking cabinet for instructional technology components (*only applies in some rooms*).
- c. In certain multipurpose or flexible teaching rooms, the A/V shall be located in a separate credenza and not in the lectern.
- d. Basis of Design – *Subject to compliance with requirements, provide one of the following products or an approved equal:*
 - Exact Furniture PM-400 or Approved Equal

12 90 00 Other Furnishings12 93 00 Interior Public Space Furnishings – General Requirements

- a. Containers shall be provided at various interior public and transitional spaces (*i.e. atriums, lobbies, lecture halls*) as directed by the University.

12 93 23 Trash and Litter Receptacles – Basis of Design

- Aristata Series by Busch Systems or Approved Equal
- Grainger Tough Guy, 44 Gallon, Silver, Two Stream Recycling

DIVISION 13 – SPECIAL CONSTRUCTION

13 20 00 Special Purpose Rooms

Lactation Rooms – General Requirements

- a. **Background:**
 - i. Lactation Rooms provide a private, comfortable, and welcoming space for new mothers to pump or nurse..
 - ii. Each lactation room shall be operated by the building manager of the building in which it is located.
 - iii. Any deviations or conflicts with these standards and existing field conditions shall be referred to the Office of Capital Planning and Project Management.
- b. **Scope and Policy:**
 - i. All new construction and major renovation projects shall have at least one lactation room provided for any building larger than 50,000 GSF. Smaller buildings may include a lactation room if none are provided in adjacent buildings.
 - ii. Buildings already well served by existing lactation rooms shall not be required to provide further dedicated rooms per this standard.
 - iii. Projects that remove a Lactation Room during construction shall replace it as part of renovation.
 - iv. Requests for a new permanent lactation room outside of a Capital Project shall be made by the Vice President or Dean responsible for the programs in the building and shall be accompanied by a funding source.
 - v. Determination shall be made in consultation with the Office of Capital Planning and Project Management, Division of Human Resources, and the Women's Center.
- c. **Compliance:**
 - i. Comply with Section 4207 of the Patient Protection and Affordable Care Act as well as all applicable building codes.
 - ii. All accessories, equipment, furniture and casework shall be in compliance with accessibility clearances and regulations.
- d. **Design Guidelines:**
 - i. **LOCATION:** *Lactation rooms shall be located on an accessible route/floor and shall be easily accessible and easy to find within the building. Lactation rooms shall not be a restroom, toilet stall, storage room, or custodial closet.*
 - ii. **SIZE:** *For new construction and major renovations, the minimum size of all lactation rooms shall be 100 SF. The creation of a lactation room within existing buildings not undergoing renovations shall be determined by existing space availability but shall be no smaller than 60 SF.*
 - iii. **LAYOUT:** *Room layout shall allow for a 60" turning radius with a 24" deep counter on one wall.*
 - iv. **VISUAL/SOUND PRIVACY:** *Rooms shall provide complete visual and acoustical privacy. Wall heights shall prevent visual intrusion and minimize sound transmission into adjacent spaces. Window treatments shall match the overall building standard.*
 - v. **ACCESS PRIVACY:** *Rooms shall have privacy latch and/or locking door hardware that, when locked, display "occupied" on the exterior.*
 - vi. **SIGNAGE:** *Appropriate signage shall be displayed outside of the room and shall conform to existing campus signage standards.*
 - vii. **LIGHTING/HVAC:** *Rooms shall meet the standard requirements for office level illumination and ventilation. Task lighting may be provided over the sink and work area if overhead lighting is inadequate. Dimmable LED lighting may be provided to allow for personal adjustment.*
 - viii. **FURNISHINGS:** *Rooms shall contain a comfortable chair and small table or work surface. Additional furnishings may include a cabinet with drawers for storing pump equipment, countertop, bulletin board, changing table, coat hook or rack, clock, wall mirror and waste receptacle.*
 - ix. **ELECTRICAL:** *Rooms shall include at minimum one duplex electrical outlet at a location near where the occupant will use the pump.*
 - x. **EQUIPMENT:** *Rooms shall preferably have a sink and small fridge along with paper towel and soap dispensers or be adjacent to a restroom.*
 - xi. **FINISHES:** *Room finish selections shall be warm and comfortable.*

DIVISION 14 – CONVEYING EQUIPMENTRelated Sections

- a. DIVISION 27 – COMMUNICATIONS
- b. DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

14 00 00 Conveying Equipment – General Requirements

- a. Design and construction of these systems shall comply with the latest edition of the Elevator Safety Code (ASME A17.1) and IBC NJ Code.
- b. All conveying systems shall be designed to comply with OSHA safety requirements, including safety railings above the elevator cab.

14 20 00 Elevators14 20 00 Elevators – General Requirements

- a. Installation shall comply with ANSI Standard A17.1 for Elevators, State of NJ Elevator Inspector requirements and University guidelines.
- b. *ELEVATOR TYPES: Overhead Traction Elevators, In-Ground Hydraulic Elevators, and Hole-less Hydraulic Elevators are permitted elevator types for use. In certain instances, Cable Assisted Hydraulic Elevators may be used based on consultation with Facilities Maintenance and Engineering Electrical Services. All proposed project elevator types shall be reviewed and approved by the Project Manager prior to completion of the Design Development phase.*
- c. The appropriate number, capacity and size of elevators shall be installed to serve each building as determined by industry standard calculations.
- d. *QUANTITY: All new or renovated buildings shall contain at least two elevators that service all floors. Consideration shall be given to monthly elevator service requirements and maintaining continuity of building access in the event of an elevator failure or performance of routine maintenance.*
- e. *CAPACITY: All elevators shall have a minimum 2,500 lb. capacity. Buildings with more than one elevator shall have, at minimum, one Class C3 elevator. For buildings with only one elevator, that elevator shall be able to carry a minimum 1,500 lb. single piece load.*
- f. *SIZE: Elevator size shall be determined based on building needs and the intended use of the elevator. Elevator capacity, car size, opening size, and platform area shall adequately serve the equipment transportation needs of the building. Larger buildings housing large equipment will require larger elevators for transporting the equipment for repair or replacing. Buildings housing large departmental equipment items will require elevators of larger capacity and size. Determination shall also consider potential future uses of a building. See ASME A17.1 for different elevator loading design requirements.*
- g. *ACCESS: The highest and lowest interior areas in each building shall be accessible by elevator. If an elevator provides direct access to a basement mechanical area or penthouse without intervening corridors and doorways, a means for preventing unauthorized access to those spaces shall be provided via mechanical key switch or electronic card reader. Elevators that require floor access control shall be coordinated with Access Control.*
- h. *EMERGENCY COMMUNICATION: A ring-down telephone line shall be provided and an ADA-compliant hand-free emergency communication device shall be installed in each elevator cab. Devices shall be manufactured by Rath Microtech and shall be flush-mounted in the car operating panel.*
- i. *NON-PROPRIETARY EQUIPMENT: All proposed elevator control equipment shall be non-proprietary.*
- j. *ELEVATOR PIT REQUIREMENTS: Elevator pits shall be constructed in accordance with ASME-A17.1, Section 2.2.*
- k. *ACCESS DOORS AND LADDERS: Access doors shall be provided for inspection of elevator hoistway machinery space equipment as required. Doors shall be minimum 24" x 24" when full body entry is not required and minimum 29.5" x 29.5" when necessary, shall be self-closing and locking and keyed the same as the elevator machine room. A code-compliant access ladder shall be to the side of the door with a standard railing and platform below the overhead door.*
- l. Basis of Design – Consultants shall work with the following vendor for coordination of University standards:
 - Schindler Elevator Co.

14 40 00 Lifts14 42 00 Wheelchair Lifts – General Requirements

- a. Use of wheelchair lifts on campus shall be minimized and shall only be installed to serve existing facilities in cases where it is highly impractical to install a code-compliant elevator or ramp. Lifts shall never be installed as a means to satisfy accessibility requirements in new facilities.

14 42 13 Inclined Wheelchair Lifts – Basis of Design

- Delta Inclined Platform Lift by Savaria, Garaventa Inc., Mobility Elevator & Lift Co. (ex: RICH) or Approved Equal



Facility Services Subgroup

Facility Services Subgroup

DIVISION 21 – FIRE SUPPRESSION

Related Sections:

- a. DIVISION 10 – SPECIALTIES (*10 40 00 Safety Specialties*)
- b. DIVISION 28 – ELECTRONIC SAFETY AND SECURITY (*28 40 00 Life Safety*)

21 00 00 Fire Suppression – General Requirementsa. **Codes and Standards:**

- i. Fire suppression systems shall comply with all applicable codes, standards, engineering best practices, and requirements of the authority having jurisdiction.
- ii. The design of building sprinkler systems shall be in compliance with NFPA 13 and all other NFPA standards for suppression systems.

b. **Water Supply:**

- i. The University shall provide hydrant flow data for the two fire hydrants closest to the site for determining if a fire pump is required.
- ii. A fire pump shall be provided if the analysis of the available water supply and the projected hydraulic demand indicate the need.
- iii. A fire department connection (FDC) shall be provided at the fire department response point with appropriate signage and lighting.

c. **Sprinkler and Standpipe System:**

- i. A combined sprinkler/standpipe system shall be provided for the entire building and shall include a complete automatic wet-pipe sprinkler protection system with quick response sprinklers. No flexible piping is allowed in these systems.
- ii. The standpipe system shall include hose connections at intermediate stair landings, or as otherwise required by local regulations.
- iii. The combined system shall be supplied by the local campus water loop.
- iv. A pre-action sprinkler system shall be provided for elevator shafts if required and be released by the main fire alarm control panel.
- v. All automatic sprinkler systems shall be monitored by the fire alarm system.

21 08 00 Commissioning of Fire Suppression – General Requirements

- a. The commissioning of all fire suppression systems shall be included in the project commissioning scope.

21 10 00 Water-Based Fire-Suppression Systems

21 11 19 Fire-Department Connections – Basis of Design

- Knox Storz Lock, 4-inch by Knox Company

21 13 00 Fire-Suppression Sprinkler Systems – Basis of Design

- Manufacturers – *Provide basis of design product or approved equal by one of the following:*
 - Victaulic

21 13 13 Wet-Pipe Sprinkler Systems – Basis of Design

See below for each individual item type.

- Victaulic FireLock Series 751 Alarm Check Valve
- Victaulic VicFlex Flexible Sprinkler Fitting System
- Victaulic G5 Sprinkler Head

21 13 16 Dry-Pipe Sprinkler Systems – Basis of Design

- Victaulic Series 7C7 Air Maintenance/Compressor Assembly for Victaulic FireLock NXT Dry Valve Series 768

DIVISION 22 – PLUMBINGRelated Sections:

- a. DIVISION 23 – HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)
- b. DIVISION 33 – UTILITIES

22 00 00 Plumbing – General Requirements

- a. The A/E consultant shall coordinate all plumbing work with the fire sprinkler designer.
- b. PIPE LAYOUT: *For plumbing piping layouts, A/E Consultant shall consider accessibility for troubleshooting and repairs*
- c. Contractors shall coordinate work with requisite subcontractors at bid to ensure comprehensive installation is provided in lump sum bid.
- d. SUSTAINABILITY: New plumbing fixtures, appliances, and processes shall follow the specifications for LEED v4 Water Efficiency Prerequisite Indoor Water Use Reduction at minimum. Additional water-saving measures shall be considered where possible.

22 10 00 Plumbing Piping22 11 00 Facility Water Distribution – General Requirements

- a. DOMESTIC WATER PIPING: Use of CPVC (chlorinated polyvinyl chloride) piping shall be prohibited for any domestic water system applications going forward due to reliability and maintenance concerns.

22 11 00 Facility Water Distribution – Basis of Design

See below for each individual item type.

Domestic Hot Water Mixing Valves:

- Leonard Valve Company or Approved Equal

Hot Water Circulators:

- Bell & Gossett
- Taco Comfort Solutions

22 30 00 Plumbing Equipment22 35 00 Domestic Water Heat Exchangers – Basis of Design

- AERCO Model B+II Water Heater with Pneumatic Valve or Approved Equal
- Manufacturers – *Provide basis of design product or approved equal by one of the following:*
 - AERCO International, Inc.
 - PVI Industries

22 40 00 Plumbing Fixtures22 40 00 Plumbing Fixtures – General Requirements

- a. Plumbing fixtures shall comply with all applicable ADA and building code regulations.
- b. Faucets and showerheads for restroom applications shall meet WaterSense certification.
- c. Use of plastic flush valve covers shall be avoided in favor of stainless steel models which provide improved durability and maintainability.
- d. NON-PERMITTED PRODUCTS: *Sloan EBV309A Flush Valve Cover (Recommended Replacement: Sloan EBV89AM)*
- e. NIBCO pressed fittings shall not be permitted. Viega ProPress shall not be permitted.

22 42 13 Commercial Water Closets, Urinals, and Bidets – Basis of Design

- American Standard Washbrook FloWise Universal Urinal
- The Waterless Co. Kalahari #2003 or Sonora #2004 Waterless Urinals
- Manufacturers – *Provide basis of design product or approved equal by one of the following:*
 - American Standard Brands
 - Eljer Industries, Inc.
 - Gerber Plumbing Fixtures

22 42 16 Commercial Lavatories and Sinks – Basis of Design

- American Standard Lucerne Wall-Hung Sink
- American Standard Florwell or Akron Service Sink
- Manufacturers – *Provide basis of design product or approved equal by one of the following:*
 - American Standard Brands

22 42 39 Commercial Faucets – Basis of Design

- Delta Faucet MultiChoice Universal Shower Valve
- Delta T13420 Series Tub and Shower Faucet Trim
- Sloan SF-2350 Sensor Activated 4" Centerset Electronic Faucet
- Manufacturers – *Provide basis of design product or approved equal by one of the following:*
 - American Standard Brands
 - Sloan Valve Company

22 42 43 Flushometers – Basis of Design

- Sloan Royal Model Flushometer
- Sloan EBV500A Sensor Flushometer
- Sloan Solis Solar-Powered Flushometer 8186-1 or 8111-1.28
- Sloan 111 SMO, 1.6 GPF (*ex.: UNIV*)
- Manufacturers – *Provide basis of design product or approved equal by one of the following:*
 - Sloan Valve Company
 - Zurn Industries, LLC.

22 45 00 Emergency Plumbing Fixtures – General Requirements

- a. An ANSI-Z358.1 compliant emergency shower and eyewash station shall be provided in all laboratory spaces where bodily exposure to corrosive chemicals may occur.
- b. Emergency showers and eyewash stations shall be plumbed to the domestic water system (not the industrial water system).
- c. Emergency showers shall be installed adjacent to a floor drain to allow the water to drain in a controlled manner.
- d. Ceiling-mounted safety showers shall not be flush-mounted in order to provide adequate access for routine flushing and testing.
- e. Any laboratory furnished with a fume hood and/or biosafety cabinet shall have at least one eyewash station installed in the room.
- f. The eyewash shall be located within ten seconds travel time from all areas of the laboratory and shall be accessible by a direct pathway not blocked by any equipment, door, or other physical restriction.
- g. Eyewash stations should consider accessibility and ease of testing. Countertop-mounted products are discouraged.
- h. Drench hoses and sink faucets are not acceptable in lieu of eyewash facilities. Drench hoses may be installed in addition to eyewashes.
- i. Adequate work clearances around lab experimental equipment shall be maintained.

22 45 13 Emergency Showers – Basis of Design

- Watersaver ES696 Emergency Shower, Free Standing, Stainless Steel Construction or Approved Equal (*ex.: RICH 374*)
Provide Watersaver Model No. TM6040 Thermostatic Mixing Valve

22 45 29 Hand-Held Emergency Drench Hoses – Basis of Design

- Watersaver EW1022 Eyewash/Drench Hose Unit, Deck Mounted or Approved Equal
Provide Watersaver Model No. TM6020 Thermostatic Mixing Valve

22 45 33 Combination Emergency Fixture Units

- a. Basis of Design – *Provide one of the following products or an approved equal:*
 - WaterSaver SSBF2170 Recessed Safety Station with Drain Pan, Wall Mounted Exposed Shower Head (*ex.: RICH 18C059*)
 - WaterSaver SSBF2173 Recessed Safety Station with Drain Pan and Daylight Drain, Surface Mounted (*ex.: RICH 113*)
Provide Watersaver Model No. TM6040 Thermostatic Mixing Valve

22 45 36 Emergency Fixture Water-Tempering Equipment – Basis of Design

- Guardian G3802LF Tempering Valve or Approved Equal (*ex.: RICH 113*)

22 47 00 Drinking Fountains and Water Coolers – General Requirements

- a. Drinking fountains and water coolers shall be manufactured by Elkay or approved equal and shall include bottle filling capabilities.
- b. Basis of Design – *Provide one of the following products or an approved equal:*
 - Elkay ezH2O EZS8WSLK Bottle Filling Station with Single ADA Cooler
 - Elkay ezH2O LZWSM8K In-Wall Bottle Filling Station with Mounting Frame Filtered Refrigerated Stainless

22 60 00 Gas and Vacuum Systems for Laboratory and Healthcare Facilities22 66 53 Laboratory Chemical-Waste and Vent Piping – Basis of Design

- Orion, Fuseal or Approved Equal

DIVISION 23 – HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)Related Sections:

- a. DIVISION 07 – THERMAL AND MOISTURE PROTECTION
- c. DIVISION 22 – PLUMBING
- d. DIVISION 25 – INTEGRATED AUTOMATION

23 00 00 Heating, Ventilating, and Air Conditioning (HVAC) – General Requirements

- a. HVAC systems shall meet ASHRAE 90.1 and State Energy Codes.
- b. Where possible, systems shall meet the LEED v4 Energy & Atmosphere prerequisites and additional energy-saving measures.
- c. Access to mechanical components shall be located in public areas whenever possible for items including, but not limited to, the following:
 - i. Variable Air Volume (VAV) Boxes
 - ii. Shut Off Valves
 - iii. Control Valves
 - iv. Dampers
- d. For HVAC piping layouts, the A/E Consultant shall take into consideration accessibility for troubleshooting and repairs.
- e. The sizing and laying out of HVAC or utility systems which serve a remodeled area shall consider the potential future use needs of the area. These systems shall be sized and configured so as to maximize flexibility to facilitate future changes.
- f. All rooftop HVAC units shall be designed with a suitable means of preventing coil freeze-up in cold weather and/or loss of electrical power.
- g. All abandoned materials, equipment, piping, conduit, wiring, etc. that is either located within or passing through a remodeled space shall be removed. This includes equipment and components that are remotely located such as in a mechanical equipment room.

23 09 23 Direct-Digital Control System for HVAC – General Requirements

- a. Coordinate with Facilities Maintenance and Engineering for the latest Building Automation System (BAS) Standards.
- b. Basis of Design: *See below for each individual item type.*

Steam Pressure Reducing Valves:

- Spirax Sarco, Leslie or Approved Equal

Water Flow Meter:

- Endress+Hauser Proline Promag L 400 Electromagnetic Flow Measuring System or Approved Equal

Gas, Steam and Liquids Meter:

- Endress+Hauser Proline Prowirl 72F, 72W, 73F, 73W Vortex Flow Measuring System or Approved Equal

23 20 00 HVAC Piping and Pumps23 22 23 Steam Condensate Pumps – Basis Of Design

See below for each individual item type.

Electric-Driven Steam Condensate Pumps:

- Duplex, Spirax Sarco, Hoffman or Approved Equal

Pressure-Powered Steam Condensate Pumps:

- Easter Machinery, Spirax Sarco or Approved Equal

23 38 00 Ventilation Hoods23 38 13 Commercial-Kitchen Hoods – General Requirements

- a. Commercial kitchen ventilation systems and controls shall be CaptiveAire Systems.
- b. Systems shall be UL-300A code compliant.
- c. Basis of Design: *See below for each individual item type.*

Automatic Residential Fire Suppression System (used for residence hall ranges):

- Model G500-B by Guardian Safety Solutions International
Systems shall include automatic sonically activated electrical shut down, contacts for alarm interface (by others), and optional pull station depending on if wanted or if the area is suitable to install one.

23 50 00 Central Heating Equipment

23 57 00 Heat Exchangers for HVAC – Basis Of Design

- Bell & Gossett, Cemline, Armstrong, Mainstream or Approved Equal

23 70 00 Central HVAC Equipment

23 73 00 Indoor Central-Station Air-Handling Units – Basis Of Design

- McQuay, York, Trane or Approved Equal

DIVISION 25 – INTEGRATED AUTOMATION

Related Sections:

- a. DIVISION 23 – HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)
- b. DIVISION 33 – UTILITIES

25 00 00 Integrated Automation – General Requirements

- a. In all campus buildings, some level of the mechanical systems are managed by a computerized Building Automation System (BAS).
- b. All designs for mechanical and electrical systems, including Building Automation Systems (HVAC, utility and submetering, interior and exterior lighting), shall be reviewed and approved by the University Project Manager in consultation with Facilities Maintenance and Engineering prior to issue for construction.
- c. The design of these systems shall take into consideration the ability to allow for future flexibility.
- d. Coordinate with University Facilities Maintenance and Engineering for the latest Building Automation System (BAS) Standards.

25 50 00 Integrated Automation Facility Controls

25 50 00 Integrated Automation Facility Controls – General Requirements

- a. Standardized controls ensure that building and energy management systems can communicate with each other without costly and complex integrations. An integrated BAS that is capable of remote monitoring and remote equipment diagnostics can improve operational efficiencies and allow for load aggregation.
- b. BUILDING AUTOMATION SYSTEM AND MAINTENANCE SERVICES: *Standardized equipment for all new construction, renovations and expansion of computerized Building Automation Systems (BAS) shall be provided and maintained by the following vendor:*
 - Automated Logic Corp.

DIVISION 26 – ELECTRICALRelated Sections:

- a. DIVISION 11 – EQUIPMENT
- b. DIVISION 33 – UTILITIES

26 00 00 Electrical – General Requirements

- a. All new construction and renovation projects shall consider opportunities to provide additional power and data in public spaces when possible.
- b. INSTRUMENTATION AND CONTROL FOR ELECTRICAL SYSTEMS: *Lighting control devices shall be included in all lighting installations. Lighting occupancy and/or daylight sensors shall be integrated into existing buildings whenever possible.*
- c. Lighting and lighting controls shall be installed in accordance with ASHRAE 90.1 and State Energy Codes.

26 05 33 Raceway and Boxes for Electrical Systems – Basis Of Design**Boxes for Electrical Systems:**

- FL-500P Floor Box by FSR Metal Products Group or Approved Equal

Surface Raceways for Electrical Systems:

- Wiremold Two-Piece Large Single and Dual-Channel Aluminum Raceway Systems by Legrand or Approved Equal

26 09 13 Electrical Power Monitoring – Basis of Design

- Eaton Power Xpert Meter 2000 or Approved Equal

26 09 23 Lighting Control Devices – Basis of Design

- Acuity Brands, Inc. or Approved Equal

26 20 00 Low-Voltage Electrical Distribution26 27 13 Electricity Metering – General Requirements

- a. **Equipment For Electricity Metering:**
 - i. Electric Meters shall be the campus standard “Veris” H84xxVB series meter with Extended Data Set (EDS) with Modbus capability.
 - ii. The controller shall continually monitor meters for electric consumption. These values shall be available to the system at all times.
 - iii. Alarm shall be generated when the sensor reading indicates a loss of pulse output from the electric meter (meter failure).
 - iv. PEAK DEMAND AND USAGE HISTORY: *The controller shall monitor and record electric meter readings so as to provide a history of the power consumption as well as monitor and record the peak (high and low) demand readings from electric meters. The readings shall be recorded on a daily, month-to-date, and year-to-date basis. The option to use Kw (Kwh) or Btu/hr (Btu) as the units for demand and consumption report shall be provided. Multiples of these units (MWH, kBtu, etc.) shall be used as appropriate.*

26 27 26 Wiring Devices – Basis of Design

- Manufacturers – *Provide products from one of the following manufacturers or an approved equal:*
 - Cooper Wiring Devices; Division of Cooper Industries, Inc.
 - FSR Inc.
 - Hubbell Incorporated; Wiring Device-Kellems
 - Leviton Mfg. Company Inc.
 - Pass & Seymour/Legrand

26 50 00 Lighting26 50 00 Lighting – General Requirements

- a. LED or other energy-efficient lighting shall be used in all interior and exterior applications unless otherwise directed by the Project Manager.
- b. Proposed use of alternative lighting types shall be discussed with and shall require approval from the Project Manager.
- c. Lighting shall be DLC (*Design Lights Consortium*) or EnergyStar certified and meet PSEG requirements for financial incentives when applicable.
- d. Domestic (local) lighting products are preferred.

26 51 00 Interior Lighting – General Requirements

- a. Brightness and temperature of lighting applications shall be appropriate to their space. For example, daylight LED bulbs shall be utilized in large atrium spaces of buildings with significant daylight exposure (*i.e. University Hall Conference Center, Student Center Ballrooms, CELS atrium*).

26 51 19 LED Interior Lighting – Basis Of Design

- EZPan Edgelit Flat Panel 2x2, 2x4 or 1x4, 3500K by RAB Lighting or Approved Equal

26 52 00 Safety Lighting – General Requirements

- a. Egress lighting systems shall be designed with minimum possible maintenance requirements.
- b. No self-powered or tritium powered emergency devices shall be allowed. Units containing radioactive material shall not be used.
- c. When cost allows, provide emergency lighting system wired back to single point and only one backup system (generator or inverter).
- d. Battery backup fixtures shall be allowed if no other emergency source is available.
- e. All emergency lighting fixtures shall be equipped with identifying markers and provide illumination for at least 90 minutes however powered.
- f. Where emergency lighting fixture head is located remotely from battery pack, a printed label shall be provided indicating battery pack location.
- g. Provide generator transfer devices on individual fixtures locally controlled for user visual circumstances by manual or automatic switching (*i.e. relay device for switching lighting load to generator fed emergency circuit in response to normal circuit power loss regardless of local switching control position or mode*).

26 52 13 Emergency and Exit Lighting – Basis Of Design

- HEX-X (Exit), HEX-W (Wallpack), HEX- C (Combo), HEX-M (Smart Emergency Microinverter) by Hexmodal

26 56 00 Exterior Lighting – General Requirements

- a. Exterior lighting shall prioritize energy-efficiency and safety considerations.
- b. Wherever possible, exterior lighting applications shall aim to comply with the requirements of LEED for sustainability as well as those provided by DarkSky International for light pollution.

26 56 13 Lighting Poles and Standards – General Requirements

- a. Base standards shall typically be 12' for pedestrian walkways and 14' for vehicular roadways.
- b. Typical pedestrian lighting spacing shall maintain a minimum 1 foot-candle of light intensity along pathways.
- c. Poles shall typically have a Black finish unless otherwise specified on a per-project basis by the Project Manager.

26 56 19 LED Exterior Lighting – Basis Of Design

- Hadco by Signify TX03-C Hagerstown LED Post Top or Approved Equal
Model: TX03C-196-G2-H-D-N-N-1-A-5-E-K7-830-A-21-N-SP1, Temperature: 3000K
Post: P4120-14-A-x-D, 5'-3" Tapered, Color/Finish to match existing University standard.
- Gullwing G13 Area Luminaries by Philips Gardco (*Vehicular Roadways*)

Previous Standards for Reference:

- Lumilock LED Series by Philips Hadco or Approved Equal (black finish)
 - VEHICULAR POLE LUMINAIRE: *Model S8409B, 14' High Pole-Mounted Luminaire, Type V Optics*
Pole: Model SP8409A, 5"-3" round tapered aluminum, 0.125" wall thickness, cast aluminum base w/ access cover
 - PEDESTRIAN POLE LUMINAIRE: *Model S8409H, 12' High Pole-Mounted Luminaire, Type III Optics*
Pole: Model SP8409, 5"-3" Round Tapered Aluminum, 1/8" Thick Wall, Cast Aluminum Base with Access Cover

DIVISION 27 – COMMUNICATIONSRelated Sections:

- a. DIVISION 11 – EQUIPMENT
- b. DIVISION 14 – CONVEYING EQUIPMENT

27 00 00 Communications – General Requirements

- a. As needs will vary for each project, the Montclair State University Office of Information and Technology (OIT) shall be consulted early in the planning process in order to ensure that all communications distribution system requirements are addressed and met as appropriate.
- b. MEETINGS: *An OIT representative shall be invited to the project kick-off meeting and all construction, scheduling, and progress meetings.*

27 05 53 Identification for Communications Systems – General Requirements

- a. CAT6A CABLE COLOR MATRIX: *Color specifications for station cabling shall be as follows:*

Color	Category
Blue	Audio-Visual/Media
Green	Data
Orange	IP Cameras
Purple	Console / Serial / LOM
Red	Fire / Life Safety / AOR Phones
Yellow	Wireless APs (WAPs)
White	Voice
Grey	Building Automation Data

27 10 00 Structured Cabling27 10 00 Structured Cabling – General Requirements

- a. Coordinate with OIT for the latest Material and Equipment Specifications and Telecommunication Specifications for Cabling Infrastructure.

27 15 00 Communications Horizontal Cabling – Basis of Design

- Systimax Cat 6 Wire (Systimax 71e Gigaspeed XL cable)
- Systimax Cat 6 Data Jacks (Systimax Gigaspeed XL MGS400 jack)

27 30 00 Voice Communications27 32 23 Elevator Telephones – Basis of Design

- RATH 2400-805RS Line Powered Elevator Phone or Approved Equal

27 32 26 Ring-Down Emergency Telephones – Basis of Design

See below for each individual item.

Area Of Refuge/Elevator Landing Emergency Phones:

- RATH 2400-808NSS Interior Emergency Call Box or Approved Equal

27 40 00 Audio-Video Communications27 41 00 Audio-Video Systems – Basis of Design

- a. *Standardized equipment for all new construction, renovation and expansion of Audio-Visual Control Systems shall be provided by the following vendor:*
 - Crestron Electronics

27 41 16 Integrated Audio-Video Systems and Equipment – Basis of Design

See below for each individual item type.

A/V Lectern Rack:

- Middle Atlantic Products CFR Series Cabinet Frame Rack 14-18

A/V Box:

- Legrand Chief In-Wall Storage Solutions – PAC525 or PAC526

27 50 00 Distributed Communications and Monitoring Systems27 51 29 Emergency Communications Systems – General Requirements

- a. All emergency communication hardware shall be in full compliance with accessibility requirements and all applicable building codes.
- b. A two-way communication system shall be installed at Area of Refuge locations containing appropriate signage in line with campus standards.
- c. LOCATION: *Command Centers shall be located at central control points. Area of Refuge Call Boxes shall be located on all building floors above and below the first floor, ideally next to a stairwell emergency exit and elevator landing on each floor or at egress exit locations where an at grade level is not present.*
- d. MOUNTING: *Command Centers shall be mounted on a flat wall surface. Call Boxes shall either be wall-mounted, surface-mounted or flush-mounted and shall be mounted no higher than 48" front reach or 54" side reach to the center of the button above ground level.*
- e. Call boxes shall have a stainless steel finish. Protective covers shall be provided on the Call Boxes.
- f. Systems shall be in compliance with all state and local Electrical Codes. Monitoring of the system integrity shall be required per NFPA 72.
- g. WARRANTY: *Command Centers and Call Boxes shall be warranted for a period of three years.*
- h. Emergency telephones shall be required at designated areas on campus as determined by the University Police Department.
- i. The Office of Information Technology shall assist with installation of telephone and telephone line.
- j. CAT6A cabling and power shall be provided to each emergency telephone location. Cabling shall meet requirements for pathway survivability.
- k. Contractors shall be responsible for construction and for installation of conduit and cabling.
- l. The Office of Information Technology (OIT) shall coordinate installation of freestanding emergency telephones.
- m. Signage and other elements shall be furnished and installed as identified on construction documents in coordination with the Project Manager.
- n. Basis of Design: *See below for each individual item type.*

Pedestal-Mounted Emergency Blue Light Phones:

- RATH 2100-P Series Emergency Pedestal Phone or Approved Equal
Height: 5'-8", Color: Equipment Blue

Wall-Mounted Outdoor Emergency Phones:

- Allen Tel Products or Approved Equal

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY**28 10 00 Access Control**Related Sections:

- a. DIVISION 08 – OPENINGS
- b. DIVISION 14 – CONVEYING EQUIPMENT
- c. DIVISION 21 – FIRE SUPPRESSION

28 10 00 Access Control – General Requirements

- a. The access control and monitoring system shall be an expansion of the University's existing campus-wide access control system. Work shall include adding system panels, card readers, wireless locks, and associated access control devices in identified locations.
- b. Distribution and assignment of keys and access cards is the responsibility of the Access Control and Systems Unit. Examples of areas requiring keys or access cards include buildings, offices, work areas, mechanical rooms, storage and utility closets, and electronic and manual key cabinets.
- c. Provide all 120VAC power wiring and low-voltage work to the system and all necessary components.
- d. All system requirements shall be coordinated with the Montclair State University Project Manager in consultation with Access Control regarding the latest specifications and information.
- e. System communication with the Access Control System Server and panels shall be established via the University LAN/WAN network.
- f. As-built documentation shall be provided for the system as installed.
- g. *PRE-PROGRAMMING CONFERENCE: Prior to the programming of any new doors within the University's existing access control systems, a pre-programming conference/meeting shall be conducted at the Project Site and shall be attended by key university representatives as well as a security contractor and the Project Architect.*
- h. *PERMITS: All permits required for the specified performance and completion of the work shall be secured by the Contractor.*

28 13 00 Access Control Software and Database Management – Basis of Design**Equipment Software, Licensing, and Maintenance Vendor – Academic Buildings:**

- Open Systems Integrators, Inc.

Equipment Software, Licensing, and Maintenance Vendor – Residence Buildings:

- Transact, Inc.

28 14 00 Access Control System Hardware – Basis of Design**Access Control Panels – Academic Buildings:**

- Lenel OnGuard Controllers and Modules

Access Control Panels – Residence Buildings:

- Blackboard by Transact, Inc.

28 15 00 Integrated Access Control Hardware Devices – Basis of Design

- a. *All new construction, renovation and expansion of computerized one-card door interior access shall use standardized equipment by the following vendor:*
 - Blackboard, Inc.

28 15 11 Integrated Credential Readers and Entry Management – Basis of Design

See below for each individual item type.

28 15 11.15 Biometric Identity Devices:

- ZKTeco Ultima200

Coordinate time clock data requirements with the University.

28 15 25 Electronic Key Management System – Basis of Design

NOTE: *Refer to 10 41 16 Emergency Key Cabinets in this document for information regarding Knox Boxes.*

- Morse Watchmans Keywatcher Touch System
Exact product specifications shall be determined by building requirements.

28 30 00 Security Detection, Alarm, and Monitoring28 31 00 Intrusion Detection – Basis of Design

- a. The security contractor shall work with the University's existing intrusion detection security vendor for access control systems integration.
- b. Basis of Design:
 - Honeywell Vista 128/250 Series (*No substitutions*)

28 40 00 Life Safety28 46 00 Fire Detection and Alarm – General Requirements

- a. Refer to the most current New Fire Alarm System Design And Installation Standards in coordination with the Office of Fire Safety.

28 46 20 Fire Alarm – General Requirements

- a. The fire alarm system shall, at a minimum, comply with the following requirements:
 - i. NFPA 72 (National Fire Protection Association, latest edition)
 - ii. NFPA 70 (National Fire Protection Association, latest edition)
 - iii. IBC-NJ (International Building Code – New Jersey, latest edition)
 - iv. Requirements of the Authority Having Jurisdiction and as supplemented by this standard.
- b. The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate testing standard.
- c. Installation shall be compliant with UL listing.
- d. The fire alarm system and its components shall have current approval from FM Global.
- e. Required interface relays, materials, and cabling shall be furnished and installed to the fire alarm control panel.

28 46 21.11 Addressable Fire Alarm System – General Requirements

- a. INSPECTION AND MAINTENANCE: *The addressable fire alarm system and all of its components shall be supplied and programmed by the University's contracted Fire Alarm Systems Inspection and Maintenance vendor secured by the installing electrical contractor.*
- b. FIRE ALARM SYSTEM VENDOR: *Montclair State University's contracted Fire Alarm Systems Inspection and Maintenance vendor is:*
Automatic Suppression & Alarm Systems, Inc.

28 46 24 Fire Detection and Alarm Emergency Control Function Interfaces – Basis of Design

- Notifier Model NFS2-3030 equipped with Digital Voice Command (Notifier Model DVC-EM with DVC-KD User Interface)



Site and Infrastructure Subgroup

Site and Infrastructure Subgroup

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 01 80 Operation and Maintenance of Irrigation – General Requirements

- a. Irrigation systems shall be designed to incorporate smart scheduling technologies, weather sensors, and submeters.
- b. Irrigation systems shall be Hunter or Rainbird and be reviewed and approved by Grounds and OIT for existing systems compatibility.

32 01 90 Operation and Maintenance of Planting – General Requirements

- a. The University prefers use of native and drought-tolerant plants when appropriate throughout campus landscaping applications.
- b. Black dye mulch shall be specified for all planting beds at a minimum depth of 2 inches.

32 10 00 Bases, Ballasts, and Paving

Related Sections

- a. DIVISION 03 – CONCRETE
- b. DIVISION 04 – MASONRY

32 13 13 Concrete Paving – General Requirements

- a. **Pathways:**
 - i. Design of pathways shall take into consideration potential shared vehicular and pedestrian use and shall be reinforced accordingly.
 - ii. PATHWAY WIDTHS (*typ.*): 12-20 feet (*Primary*), 8-12 feet (*Secondary*), 6-8 feet (*Tertiary*)
 - iii. CONCRETE: *Broom finish, Saw-cut joints*
 - iv. PRIMARY PAVER BAND: *Three row soldier course, concrete pavers, corner starburst detail.*
 - v. INTERIOR PAVER BAND: *Two course, concrete pavers.*
- b. The University shall provide design details from relevant precedent projects on an as-needed basis.

32 13 16 Decorative Concrete Paving – Basis of Design

- a. **Cast Stone Quatrefoil:**
 - i. The University uses in-ground quatrefoils within concrete or paver areas to accentuate places of significance or at major pedestrian intersections. All joints shall be sealed with non-shrinking caulk to match cast stone color.
 - ii. Quatrefoils shall be cast in 8 total sections having 4 left sections and 4 right sections. Quatrefoils shall be set in 1" Thick mortar bed.
 - iii. Shop drawings, including dimensions, shall be submitted to the University for approval prior to fabrication.
- b. Basis of Design:
 - Sun Precast Company or Approved Equal (*in-ground quatrefoils and benches*)
Color: Mix #102 (White) or Mix #3481-14

32 14 00 Unit Paving – General Requirements

- a. A paver edge restraint system shall be installed where necessary and shall be approved by the University.
- b. The University's standard rigid edge restraint is 1.7" x 3.7" as manufactured by Pave Tech Inc. or an approved equal.
- c. Edge restraint shall be anchored with 3/8" D x 10" L steel spike at 12" O.C.
- d. Contractors shall be responsible for calculating curved and straight portions. Curved portions shall have paver edge flexible restraint installed. Sections shall be joined by connector pipes.
- e. Basis of Design:
 - Hanover Prest Brick Traditional Pavers by Hanover Architectural Products or Approved Equal
3 Color Random Blend (equal quantities of each): Matrix #B92079 Natural Finish, #B92079 Tudor Finish, Matrix #B92827 Tudor Finish
Size: 2-3/8" x 4" x 8", Design shall specify vehicular or pedestrian use with paver size and setting detail specified accordingly.

32 17 26 Tactile Warning Surfacing – General Requirements

- a. ADA-compliant cast iron detectable warning plates shall be provided where necessary.

32 30 00 Site ImprovementsRelated Sections

- a. DIVISION 05 – METALS
- b. DIVISION 26 – ELECTRICAL

32 31 19 Decorative Metal Fences and Gates – Basis of Design

- Estate K Style Ornamental Picket Fence by Monumental Iron Works/Master Halco Inc. or Approved Equal, Height: 4'-0" (ex.: COLE)
- Manufacturers: *Subject to compliance with requirements, provide products by one of the following or an approved equal:*
 - Ameristar Fence Products; an ASSA ABLOY company
 - Master Halco Inc.

32 33 00 Site Furnishings – General Requirements

- a. All proposed site furnishing items shall be reviewed and approved by the Project Manager prior to installation.
- b. Selection of site furnishings shall take into consideration existing styles in adjacent areas and match architectural context when appropriate.
- c. As the University supports a multi-modal network of campus transportation options, bicycle racks shall be considered for inclusion in or within the vicinity of projects when appropriate. Bicycle racks shall be installed on paved surfaces in locations that are accessible by bicycle.
- d. Receptacles and other furnishings shall not include ash trays as Montclair is a fully smoke, tobacco, and vapor product free campus.
- e. Benches shall be located in existing or potential outdoor gathering areas and shall aim to provide a comfortable seating experience.

32 33 13 Site Bicycle Racks – General Requirements

- a. Basis of Design – *Provide one of the following products or an approved equal:*
 - Victor Stanley Cycle Sentry Collection BRCS-105 (7 bike capacity), BRCS-107 (9 bike capacity), BRCS-109 (11 bike capacity)
Color: Black, Size varies based on anticipated demand and appropriateness of scale for each location.

32 33 23 Site Trash and Litter Receptors – Basis of Design

- Victor Stanley SD-42 Side-Door Litter Receptacle, Color: Black
Options: RL10 Recycle Lid Decal, RB10 Band Decal

32 33 43 Site Seating and Tables – Basis of Design

See below for each individual item or an approved equal.

Chairs – Traditional Style:

- Victor Stanley Production Collection PRSCC-8 (with armrests) / PRSCA-8 (armless), Color: Black

Benches – Traditional Style:

- Victor Stanley RB-28 / NRB-6 (for use on sloped areas to maintain a level seating space), Color: Black, Length: 6', with armrests
- Armless: Victor Stanley RB-12, Color: Black

Tables – Traditional Style:

- Victor Stanley PRSCT-36, Color: Black

32 39 13 Manufactured Metal Bollards – General Requirements

- a. The University's standard metal bollard shall be 8-5/8" OD schedule 40 steel pipe, Black powder coated finish.
- b. Cavity shall be completely filled with concrete to increase structural integrity.
- c. Installation shall comply with manufacturer's recommendations.
- d. Basis of Design – *Subject to compliance with requirements, provide one of the following products or an approved equal:*
 - Garden City 'C' Bollard by American Bollard
 - Architectural Iron Company, Inc.
 - CBR-6-3MBb-E-P-D by Creative Pipe, Inc.
 - Aegean Pipe Bollard by Ironsmith

DIVISION 33 – UTILITIES

Related Sections

- a. DIVISION 21 – FIRE SUPPRESSION
- b. DIVISION 22 – PLUMBING
- c. DIVISION 23 – HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)
- d. DIVISION 25 – INTEGRATED AUTOMATION
- e. DIVISION 26 – ELECTRICAL

33 00 00 Utilities – General Requirements

- a. There shall be no PVC or CPVC piping for hot-cold water supplies domestic or heating.
- b. **Manholes:**
 - i. All steam manholes shall be vented via Goose Necks.
 - ii. Steam manholes in grass or sidewalks shall be of the Bilco Door type.
- c. **Metering:**
 - i. Energy and water metering shall be included in all new construction projects.
 - ii. Energy and water submeters shall be retrofitted into existing facilities greater than 10,000 GSF.
 - iii. Submetering shall be included in all new construction, major renovations, change of use renovations (i.e. dining spaces), and irrigation systems.
 - iv. All submeters shall be integrated with the existing Building Automation System.
 - v. All water and gas meters shall be able to interface with the existing ALC (*Automated Logic Corporation*) Building Automation System.
 - vi. Coordinate with University Facilities and our Energy Partners for utility meter requirements.

33 05 19 Ductile-Iron Utility Pipe – Basis of Design

- Victaulic or Approved Equal (*Grooved Joint Ductile Iron Fittings*)

33 30 00 Sanitary Sewerage

33 32 00 Sanitary Sewerage Equipment – General Requirements

- a. POTABLE LIFT STATION DESIGN: *A/E consultant shall work with the following vendor on the University standards:*
 - Rapid Pump & Meter Service Co., Inc.
- b. SEWAGE SANITARY LIFT STATION DESIGN: *A/E consultant shall work with the following vendor on the University standards:*
 - Rapid Pump & Meter Service Co., Inc.

Appendices and Details

The following items are available for download below or on the Montclair State University [website](#).

LIST OF ITEMS

Appendix – **Interior Signage Standards Manual**

Appendix – **Exterior Wayfinding Manual**

Appendix – **Donor Recognition Signage Guidelines**

Appendix – **Building Automation System Standards** (*Under Development*)

Appendix – **OIT Material and Equipment Specifications** (*Under Development*)

Appendix – **Interior Room Numbering Guidelines**

Appendix – **CAD Polyline Standards**

DESIGN DETAILS

Design Detail – **Cast Stone Quatrefoil**

Design Detail – **Paver Details**

Design Detail – **Pathway Types**

Design Detail – **Sidewalk Details**

- a. *Quatrefoil Pavement Detail*
- b. *Concrete Paver Soldier Course Detail*
- c. *Type 'A' Campus Walkway Detail - One Course Pavers*
- d. *Campus Driveway Details*
- e. *Vertical Concrete Curb Detail*
- f. *Pavement Section*
- g. *Herringbone Paver Section*
- h. *Concrete 6'- and 8'- Wide Sidewalk Detail*
- i. *Concrete Pad for Benches, Bicycle Racks and Trash/Recycling Receptacles*

Design Detail – **Decorative Metal Railings**

1. **Traditional Style Stair Handrail** (*Julius Blum & Co.*)
2. **Ornamental Steel Handrail** (*King Supply Co.*)
3. **Transitional/Contemporary Style Black Railing**
4. **Transitional/Contemporary Style Red Herringbone Railing**

Design Detail – **Site Recycling Receptacle Decals**

1. **RB10 Standard Band Decal**
2. **RL10 Standard Lid Decal**

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Index (Under Development)

Access Control

- 08 70 00 Hardware
- 14 20 00 Elevators
- 28 10 00 Access Control
- 28 30 00 Security Detection, Alarm, and Monitoring

Capital Planning and Project Management (CPPM)

- 01 00 00 I. Design Process
- 01 00 00 IV. Accessibility
- 01 00 00 VI. Sustainability
- 10 13 00 Directories
- 10 14 00 Signage
- 10 14 14 Exterior Signage
- 10 14 15 Exterior Signage
- 13 20 00 Special Purpose Rooms (Lactation Rooms)

Carpentry

- 06 10 00 Rough Carpentry
- 06 20 00 Finish Carpentry

Electrical

- Div. 26 – Electrical
- 13 20 00 Special Purpose Rooms (Lactation Rooms)

Emergency and Security

- 08 88 53 Security Glazing
- 10 40 00 Safety Specialties
- 10 43 13 Defibrillator Cabinets
- 10 41 16 Emergency Key Cabinets
- 22 45 00 Emergency Plumbing Fixtures
- 26 52 00 Safety Lighting
- 27 32 23 Elevator Telephones
- 27 32 26 Ring-Down Emergency Telephones
- 27 51 29 Emergency Communications Systems

Energy Management

- 01 00 00 I. Design Process
- 01 00 00 VI. Sustainability
- 11 00 00 Equipment
- 23 00 00 Heating, Ventilating, and Air Conditioning (HVAC)
- 25 50 00 Integrated Automation Facility Controls
- 33 00 00 Utilities

Environmental Health and Safety

- 02 80 00 Facility Remediation
- 09 00 00 Finishes
- 11 53 00 Laboratory Equipment
- 11 81 29 Facility Fall Protection
- 22 45 00 Emergency Plumbing Fixtures

Fire Safety

- 07 80 00 Fire and Smoke Protection
- 08 41 13.13 Fire-Rated Glass and Glazing Systems
- 08 80 00 Glazing
- 09 29 82 Gypsum Board Fire Protection
- 10 40 00 Safety Specialties
- 10 41 16 Emergency Key Cabinets
- 10 44 00 Fire Protection Specialties
- 21 00 00 Fire Suppression
- 23 38 00 Ventilation Hoods
- 26 52 00 Safety Lighting
- 26 52 13 Emergency and Exit Lighting
- 28 40 00 Life Safety

Grounds and Landscape

- 05 50 00 Metal Fabrications
- 05 70 00 Decorative Metal
- 32 00 00 Exterior Improvements
- 32 10 00 Bases, Ballasts, and Paving
- 32 30 00 Site Improvements
- 33 00 00 Utilities
- 33 30 00 Sanitary Sewerage

Housekeeping

- 10 20 00 Interior Specialties
- 12 40 00 Furnishings and Accessories
- 12 46 33 Waste Receptacles
- 12 93 23 Trash and Litter Receptacles
- 13 20 00 Special Purpose Rooms

HVAC

- Div. 23 – Heating, Ventilating, and Air Conditioning (HVAC)
- 25 00 00 Integrated Automation
- 13 20 00 Special Purpose Rooms (Lactation Rooms)

Keying and Locks

- 08 10 00 Doors and Frames
- 08 11 00 Metal Doors and Frames
- 08 71 00 Door Hardware
- 08 71 13 Automatic Door Operators
- 10 41 16 Emergency Key Cabinets
- 13 20 00 Special Purpose Rooms
- 14 20 00 Elevators
- 28 10 00 Access Control
- 28 15 25 Electronic Key Management System

Office of Information and Technology (OIT)

- 01 00 00 VIII. General Guidelines and Responsibilities
- 27 00 00 Communications
- 32 01 80 Operation and Maintenance of Irrigation

Plumbing

Div. 22 – Plumbing

Accessibility

- 01 00 00 IV. Accessibility
- 01 00 00 V. Universal Design
- 05 51 00 Metal Stairs
- 08 71 00 Door Hardware
- 08 71 13 Automatic Door Operators
- 11 31 13 Residential Kitchen Appliances
- 12 56 33 Classroom Furniture
- 22 40 00 Plumbing Fixtures
- 22 45 00 Emergency Plumbing Fixtures
- 22 47 00 Drinking Fountains and Water Coolers
- 27 51 29 Emergency Communications Systems
- 32 17 26 Tactile Warning Surfacing

Classrooms

- 08 50 00 Windows
- 09 50 00 Ceilings
- 09 68 00 Carpeting
- 09 70 00 Wall Finishes
- 09 91 23 Interior Painting
- 12 46 33 Waste Receptacles
- 12 56 33 Classroom Furniture
- 12 56 39 Lecterns

Furniture

- 12 50 00 Furniture
- 12 93 00 Interior Public Space Furnishings
- 13 20 00 Special Purpose Rooms (Lactation Rooms)
- 32 33 00 Site Furnishings
- 32 33 43 Site Seating and Tables

Interiors

- 09 00 00 Finishes
- 10 20 00 Interior Specialties
- 10 51 13 Metal Lockers
- 12 00 00 Furnishings
- 13 20 00 Special Purpose Rooms (Lactation Rooms)

Laboratory

- 09 65 00 Resilient Flooring
- 11 53 00 Laboratory Equipment
- 11 53 13 Laboratory Fume Hoods
- 12 35 53 Laboratory Casework
- 12 36 00 Countertops
- 22 45 00 Emergency Plumbing Fixtures
- 22 66 53 Laboratory Chemical-Waste and Vent Piping

Lighting

- 13 20 00 Special Purpose Rooms
- 25 00 00 Integrated Automation
- 26 00 00 Electrical
- 26 09 23 Lighting Control Devices
- 26 50 00 Lighting
- 26 51 00 Interior Lighting
- 26 52 00 Safety Lighting
- 26 52 13 Emergency and Exit Lighting
- 26 56 00 Exterior Lighting

Paint Color Specifications

- 04 42 00 Exterior Stone Cladding
- 04 73 13 Calcium Silicate Manufactured Stone Masonry
- 07 24 00 Exterior Insulation Finish Systems
- 07 32 13 Clay Roof Tiles
- 07 54 19 Polyvinyl-Chloride Roofing
- 09 91 13 Exterior Painting
- 09 91 23 Interior Painting
- 32 13 16 Decorative Concrete Paving
- 32 14 00 Unit Paving

Sustainability

- 01 00 00 VI. Sustainability
- 06 00 00 Wood, Plastics, and Composites
- 09 00 00 Finishes
- 09 50 00 Ceilings
- 09 70 00 Wall Finishes
- 10 20 00 Interior Specialties
- 10 28 26 Hygiene and Custodial Accessories
- 11 00 00 Equipment
- 11 46 83 Ice Machines
- 22 00 00 Plumbing
- 22 40 00 Plumbing Fixtures
- 23 00 00 Heating, Ventilating, and Air Conditioning (HVAC)
- 26 50 00 Lighting

Index (Under Development)

Entities and Organizations (in Alphabetical Order)

AASHE, STARS	01 00 00 VI.
American Concrete Institute (ACI)	03 00 00
American Institute of Architects (AIA)	01 00 00 VIII.
American Society for Testing and Materials (ASTM)	03 00 00, 04 20 00, 05 50 00, 07 20 00, 07 30 00, 07 84 00, 07 90 00, 08 11 00, 08 81 23, 09 20 00
Americans With Disabilities Act (ADA)	01 00 00 IV., 05 51 00, 08 71 00, 08 71 13, 11 31 13, 14 20 00, 22 40 00, 22 47 00, 32 17 26
Architectural Woodwork Institute (AWI)	06 20 00, 06 40 00
ASHRAE	07 00 00, 07 26 00, 08 81 23, 23 00 00, 26 00 00
Automated Logic Corporation	25 50 00, 33 00 00 (Metering)
Brick Industry Association	04 00 00
DCO Energy, LLC	01 00 00
Factory Mutual (FM) Global	01 00 00, 07 00 00, 07 50 00, 28 46 20
International Masonry Association	04 00 00
National Fire Protection Association (NFPA)	07 00 00
National Roofing Contractors Association (NRCA)	07 00 00
New Jersey Department of Community Affairs (DCA)	01 00 00 II., VII.
NJ State Board of Professional Engineers and Land Surveyors	01 00 00 VIII.
Occupational Safety and Health Administration (OSHA)	01 00 00 II., 11 81 29, 14 00 00
USGBC, LEED	01 00 00 VI., 06 00 00, 09 00 00, 09 50 00, 09 70 00, 10 28 26, 22 00 00, 23 00 00, 26 56 00

Other (in Alphabetical Order)

Air-Handling Units	23 73 00
Attic Stock	09 00 00 <i>Finishes</i>
Automatic Door Operators	08 71 13
Bicycle Racks	32 33 00 <i>Site Furnishings</i> , 32 33 13
Building Automation System (BAS)	23 09 23, 25 00 00, 25 50 00, 27 05 53 (Data Cable Color), 33 00 00 (Metering)
Campus Accessibility Map	01 00 00 IV.
🔨 Carpentry 🔨	06 10 00 <i>Rough Carpentry</i> , 06 20 00 <i>Finish Carpentry</i>
Casework	12 30 00
Cast Stone	04 72 00 (Masonry), 32 13 16 (Quatrefoil)
Clay Roof Tiles	07 32 13
Complete Streets	01 00 00 VI.
Cost Estimate and Schedule	01 00 00 VII.
CPVC (Chlorinated Polyvinyl Chloride)	22 10 00, 33 00 00 (Utilities)
Defibrillator Cabinets	10 43 13
Design Process	01 00 00 I.
Diaper Changing Stations	10 28 14
Donor Recognition Signage	10 14 00
Drinking Fountains and Water Coolers	22 47 00
🔌 Electrical 🔌	Division 26, 13 20 00 (Lactation Rooms)
Elevators	14 00 00
Emergency Phones – Area Of Refuge/Elevator Landing	27 32 26 <i>Ring-Down Emergency Telephones</i>
Emergency Phones, Pedestal-Mounted Blue Light	27 51 29 <i>Emergency Communications Systems</i>
Emergency Phones, Outdoor Wall-Mounted	27 51 29 <i>Emergency Communications Systems</i>
Exterior Insulation Finish Systems (EIFS)	07 24 00, 09 91 00 (Color/Finish Specifications)
Eyewash/Safety Showers	22 45 00 <i>Emergency Plumbing Fixtures</i>
Facilities Sustainability Plan	01 00 00 VI.
Facility Fall Protection	11 81 29
Finishes	01 00 00 I. <i>Design Process</i> , 08 11 00 <i>Metal Doors and Frames</i> , 08 71 00 <i>Door Hardware</i> , 09 00 00, 13 20 00 (Lactation Rooms)
Fire Extinguishers	10 44 00 <i>Fire Protection Specialties</i>
Fire Protection Cabinets	10 44 00 <i>Fire Protection Specialties</i>
Flooring	09 60 00
Furnishings	01 00 00 I. <i>Design Process</i> , VIII. (Project Site Furnishings), 12 40 00, 12 56 00, 12 90 00 (Other), 13 20 00 (Lactation Rooms), 32 33 00 (Site)
Furniture	12 50 00
General Guidelines and Responsibilities	01 00 00 VIII.
Handrails	05 51 00, 05 52 00, 05 70 00, 05 73 00, 05 73 13
Heat Exchangers	22 35 00 (Domestic Water), 23 57 00 (HVAC)
Historical	08 71 00 <i>Door Hardware</i> , 09 91 13 <i>Exterior Painting</i> , 05 70 00 <i>Decorative Metal</i>
Hoods	11 31 13 <i>Residential Kitchen Appliances</i> , 11 53 13 <i>Laboratory Fume Hoods</i> , 22 45 00
🔥 Heating, Ventilating, and Air Conditioning (HVAC) 🔥	Division 23, 25 00 00 <i>Integrated Automation</i> , 13 20 00 (Lactation Rooms)
Hygiene and Custodial Accessories	10 28 26
Ice Machines	11 46 83

Insulation	07 21 00 <i>Thermal Insulation</i> , 07 22 00 (Roof and Deck), 07 24 00 (EIFS), 07 27 00 <i>Air Barriers</i> , 07 30 00 <i>Steep Slope Roofing</i> , 07 50 00 <i>Membrane Roofing</i> , 09 21 16 <i>Gypsum Board Assemblies</i>
Insurance Carrier Review	01 00 00 III.
International Building Code (IBC)	01 00 00 II.
Irrigation, Operation and Maintenance	32 01 80
🔑 Keying and Locks 🔑	08 10 00 <i>Doors and Frames</i> , 08 11 00 <i>Metal Doors and Frames</i> , 08 71 00 <i>Door Hardware</i> , 08 71 13, 10 41 16 <i>Emergency Key Cabinets</i> , 13 20 00 <i>Special Purpose Rooms</i> , 14 20 00 <i>Elevators</i> , 28 10 00 <i>Access Control</i> , 28 15 25 <i>Electronic Key Management System</i>
Kitchens	09 91 23 (<i>Paint</i>), 11 31 13 (<i>Residential Appliances</i>), 12 46 33 (<i>Receptacles</i>), 23 38 13 (<i>Hoods</i>), Division 13 (<i>Residential Community Kitchens</i>)
Knox Box	10 41 16
Lactation Rooms	13 20 00
Landscaping, Project Site	01 00 00 VIII.
Lift Station Design	33 32 00
Lighting	13 20 00 (Lactation Rooms), 25 00 00, 26 00 00, 26 50 00
Emergency and Exit Lighting	26 52 13
Exterior Lighting	26 56 00
Interior Lighting	26 51 00
Lighting Control Devices	26 09 23
Project Site Lighting	01 00 00 VIII.
Safety Lighting	26 52 00
Manholes	33 00 00
Masonry	04 00 00, 04 20 00 (Unit), 04 70 00 (Manufactured)
Metering	23 09 23 , 26 09 13 , 26 27 13 , 33 00 00
Morse Box	28 15 25
Painting	02 80 00 (Remediation), 09 00 00 <i>Finishes</i> , 09 70 00 <i>Wall Finishes</i> , 09 90 00 <i>Painting and Coating</i>
Paint Sheens/Finishes	09 91 23
Paving	01 00 00 VIII. (Project Site Paving), 32 10 00 <i>Bases, Ballasts, and Paving</i> , 32 13 13 <i>Concrete Paving</i> , 32 13 16 <i>Decorative Concrete Paving</i> , 32 14 00 <i>Unit Paving</i>
Planting, Operation and Maintenance	32 01 90
🔧 Plumbing 🔧	Division 22
Projectmates	01 00 00
Project Communication and Documentation	01 00 00 IX.
Projection Screens	11 52 13
PVC (Polyvinyl Chloride)	07 50 00, 07 54 19, 07 60 00, 12 56 33 (Furniture), 33 00 00 (Utilities)
Receptacles	10 28 13 (Toilet), 12 46 33, 12 93 23, 13 20 00 (Lactation Rooms), 32 33 23 (Site)
Regulatory Agencies	01 00 00 II.
Remediation	02 80 00 (Facility), 02 82 00 (Asbestos), 02 83 00 (Lead), 09 00 00
Signage	01 00 00 VIII. (Project), 10 10 00 <i>Information Specialties</i> , 13 20 00 (Lactation Rooms)
Surplus Furniture Program	12 56 00
Time Clock	28 15 11
Toilets and Restrooms	10 21 13 (Compartments), 10 28 13 (Accessories), 22 42 13 <i>Water Closets, Urinals, and Bidets</i>
Universal Design	01 00 00 V.
Utilities	01 00 00 VIII (Project), 12 35 53 <i>Laboratory Casework</i>
Volatile Organic Compounds (VOC)	07 92 00 <i>Joint Sealants</i> , 09 60 00 <i>Flooring</i>
Window Treatments	12 20 00

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