Salt Lake Community College

Design & Construction Standards for New and Remodel Construction Projects

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I. Table of Contents

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1 PREFACE

Facilities Services Division - Mission Statement

We value the success of our students. Our mission is to foster an environment that is conducive to teaching and learning by providing an attractive, clean, safe, and comfortable environment. We strive for professional, courteous and timely service to all students, faculty, staff and visitors. See The General Info tab on the left for more information and policies.

Acknowledgements

Facility Services Division (FSD) of the Salt Lake Community College (SLCC) acknowledges the participation of all our diverse and skilled employees in the development of these standards. They honor and support the Facilities Services Division - Mission Statement with their craft, quality, dedication, and hard work.

The Steering Committee has directed this effort, and we acknowledge their vision and support.

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- Caleb Prusso
  - Director, Planning & Design
- Barton Mace
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2 INTRODUCTION

2.1 GENERAL INFORMATION

The Salt Lake Community College (SLCC) Design and Construction Standards (DCS) Manual guides project leaders, architects, and engineers on SLCC policies for planning, developing, and detailing facilities projects.

This document outlines the basic standards for planning, designing, and constructing new buildings and renovations.

These manuals do not preclude the responsibilities of the planning, design, or construction professionals to ensure that all state and federal codes are met and that spaces comply with all appropriate regulations.

2.1.1 DESIGN & CONSTRUCTION STANDARDS REVISIONS

The Director of Planning & Design will update the standards as directed by the Associate Vice-President of Facilities Services.

2.1.2 VARIANCE REQUEST PROCESS

It is expected that all projects shall adhere to these standards. Any deviations shall be approved through the Variance Request Process (VPR). Contact the SLCC PM for the current Variance Request form and process.

2.1.3 DEFINITIONS

This section contains a glossary of planning, design, and construction terms found within this document:

Authority Having Jurisdiction (AHJ) - Either a federal, state, local, or other regional department or an individual such as a fire chief, fire marshal, chief of a fire prevention bureau (or labor department or health department), building official, electrical inspector, or other individual having statutory authority

Back Punch - The process of rechecking noted corrections found while performing the initial punch list to ensure that issues have been corrected or resolved

Certificate of Substantial Completion (CSC) - A document that records the date of substantial completion of the work or a designated portion thereof

- The contractor prepares a list of items to be completed or corrected and the architect verifies and amends this list
- If the architect finds that the work is substantially complete, the form is prepared for acceptance by the contractor and the owner and the list of items to be completed or corrected is attached

Certificate of Occupancy (CO) - A document issued by a local building or zoning authority to the owner of the premises attesting that the premises have been built according to the provisions of building or zoning ordinances

- It provides evidence that the building complies substantially with the plans and specifications that have been submitted to, and approved by, the local authority
- Coordinate construction to minimize warranty and punch list items.
- It completes a building permit

Change Order - A form used for implementing changes in the work agreed to by the owner, contractor, and architect

- Execution of a completed change order indicates agreement upon all the terms of the change, including any changes in the contract sum (or guaranteed maximum price) and contract time
- The form provides space for the signatures of the owner, architect, and contractor, as well as a complete description of the change

Commissioning - The process of verification that the facility, its systems, and its assemblies are functioning as planned and designed. This process is also part of the requirements for achieving LEED certification.

Conceptual Cost Estimate - An early estimate that is based upon the Program or Schematic Design drawings. (It is typically based upon historical square foot data of similar projects, rather than a detailed quantity survey)

Contractor Selection Committee - Committee, which may include representatives from DFCM, SLCC staff, SLCC students, community representatives, organized to review qualifications for construction and, if required, construction management services

Construction Documents (CD) Phase - The stage of services provided by architect and/or engineer in which working drawings, specifications, and bidding documents are produced

Construction Manager/General Contractor (CM/GC) - A method where the general contractor also provides construction management services to the owner

Consultant - A professional engaged by FSD for a short-term contract. Consultants can be architects, engineers, planners, surveyors, hazardous materials surveying and testing, attorneys, etc.

Cost Model - An early project cost summary that is updated as the design documents are developed in greater detail; this cost estimate includes the construction cost, owner-furnished equipment, furnishings, data equipment, design costs, fees, permits, and impact fees

Design & Construction Standards (DCS) – Salt Lake Community College Design & Construction Standards for New and Remodel Construction Projects (DCS) include the standards for all new and remodel construction projects. This document supplements the DFCM Design Requirements.

Design Development (DD) Phase - Architectural plans with greater detail, including room equipment layout, mechanical and electrical equipment, and exterior elevations (structural plans including framing and footing plans and site development details are part of this design phase)

Distributed Antenna System (DAS) - A network of spatially separated antenna nodes connected to a common source via a transport medium that provides wireless service within a geographic area or structure; a DAS alleviates "dead-zone" issues by providing reliable coverage throughout a building

Division of Facilities Construction and Management (DFCM) - Utah State agency overseeing the management of state-owned buildings. https://dfcm.utah.gov/

Facilities Services Division (FSD) – A large and diverse organization, employing a variety of skilled crafts who are pleased to assist the students and employees at Salt Lake Community College. Services provided include custodial services, plumbing and heating repairs, grounds maintenance, carpentry, and electrical repairs

General Conditions - The costs that a CM/GC provides and are directly paid by the owner

- This includes items such as winter protection, building heat, on-site management salaries, office space, etc.
- The CM/GC works directly for the owner for a fee, so these costs are accurately defined and reimbursed

General Contractor - The firm that is contracted to construct the project that is defined by the construction documents

Informed Budget Process (IBP) - SLCC process for developing, approval, and funding initiatives and construction projects

Integrated Design Process - The Integrated Design Process (IDP) is a collaborative, interdisciplinary approach to design that considers the interrelationships between a building, its components, and its surroundings. The goal of IDP is to optimize the interaction between different disciplines and building systems to reduce costs and improve performance

Memorandum of Understanding (MOU) - Agreement that determines the project responsibilities of DFCM and SLCC

Pay Application - The contractor's invoice or request for payment that is submitted at the beginning of each month, reviewed by the architect and SLCC PM, and approved by the AVP

Post-Occupancy Evaluation (POE) - The systematic evaluation of a building (or built environment) in use, from the perspective of the people who use it

Program - The research and decision-making process used to identify, examine, and elaborate upon the various needs underlying a design project; the architectural programming process provides the designer with a clear definition of the scope of a project and the criteria for a successful solution

Project Manager - The individual assigned and designated as the person primarily responsible for the successful completion of the project as measured by being on time, on budget, and of the specified quality; the SLCC PM is assigned by the Director of Facilities Services Division

Project Responsibility Matrix - A detailed project task and responsibility matrix is required for every project. The matrix clearly defines roles and responsibilities for tasks, deliverables, and activities for the project.

Punch List - A contract document used to organize the completion of a construction project; it is a list of outstanding items to be completed as of the date of Substantial Completion

Request for Information (RFI) - A formal request submitted by an owner, architect, or contractor to clarify an element of the construction documents. Neither the request nor the response received provides authorization for work that increases the cost or time of the project

Request for Proposal (RFP) - A formal request submitted to vendors to bid or propose on customer-specified needs, costs, terms, and conditions for a given project

Schematic Design (SD) Phase - A process that establishes the general scope, conceptual design, scale, and relationships among the components of a project

Substantial Completion - The stage in the progress of the Work where the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use

Target Value Design (TVD) - Project management that uses cross-functional teams to set cost targets for major building components and working collaboratively to design within those targets. TVD also considers other factors like constructability, aesthetics, and sustainability.

User Group - An assembly of individuals that use the work and interact with a given space

User Group Representative - A point person (assigned by the relevant business unit) who represents departmental users and is actively involved throughout the project

Value Engineering Analysis (VE) - An organized effort directed at analyzing designed building features, systems, equipment, and material selections for the purpose of achieving essential functions at the lowest life cycle cost consistent with required performance, quality, reliability, and safety

3 Project Development and Management

3.1 Facilities Services Division (FSD)

3.1.1 Description of the Division

The Facilities Services Division is a large and diverse organization, employing a variety of skilled crafts who are pleased to assist the students and employees at Salt Lake Community College. Services provided include custodial services, plumbing and heating repairs, grounds maintenance, carpentry, and electrical repairs.

FSD also includes surplus, motor pool, distribution services, and moving services. Facilities architects and projects managers also coordinate the design and remodel of all the campuses. Additional Facilities Services Divisional information can be found at http://i.slcc.edu/facilities/index.aspx

3.1.2 Purpose Statement

We value the success of our students. Our mission is to foster an environment that is conducive to teaching and learning by providing an attractive, clean, safe and comfortable environment. We strive for professional, courteous and timely service to all students, faculty, staff and visitors. See The General Info tab on the left for more information and policies.

3.2 The State of Utah, Division of Facilities Construction and Management (DFCM)

3.2.1 Description of roles

The State of Utah, Division of Facilities Construction and Management (DFCM) has jurisdictions for all SLCC Buildings. FSD coordinates all design, construction, operations, and maintenance according to the State of Utah rules and regulations. More information can be found at the DFCM References.

Reference to DFCM Website:	http://www.dfcm.utah.gov/
Reference to Construction Management Forms:	https://dfcm.utah.gov/construction-management/standard-documents/

4 Design and Construction Standards

4.1 General Philosophy

Salt Lake Community College (SLCC) considers quality workmanship, sound construction, and innovative design approaches critical to the image of the College. The buildings and grounds at SLCC stand as a physical representation of what the College offers and as an inspiration for students. Our facilities must, therefore, represent the best possible learning environments.

4.2 Design for Future Programs

The College curriculum and support services are constantly evolving to meet educational programs and teaching methodologies. Our buildings shall incorporate strategies and technologies that support flexibility, adaptability, and expansion. Planning and construction documents shall identify adaptive building strategies and technologies. Care shall be taken to locate building structural elements and utilities to support long-term building changes.

4.3 Master Planning and Campus Design Standards

SLCC commissions and updates facility master plans for the college and all major campuses. These master plans are included in the DCS by reference. Contact the SLCC PM for digital copies of relevant master plans.

4.4 Efficiency Standards

Salt Lake Community College is committed to energy conservation and creating a healthy environment that supports the college vision, mission, and values. SLCC projects require compliance with the State Building Energy Efficiency Program (SBEEP) through the High Performance Building Standards (HPBS) process. HPBS uses an Integrated Design Process (IDP) to promote Community Oriented Design, Manage Transportation, responsibly develop the site, use energy modeling to develop the energy performance of the building, reduce the impact of materials by using locally sourced materials, design for occupant wellness, and educate users and visitors about building performance.

Design teams must demonstrate proficiency in meeting the HPBS requirements, documentation, and coordination.

SLCC participates in the *wattsmart* Business Incentive program of Rocky Mountain Power and the ThermWise Business Rebate program of Enbridge Gas. All consultants must be aware of current program rebates and submittal requirements and specify products that qualify for rebates whenever possible.

All new buildings, remodels, and building systems upgrade projects shall be coordinated through the SLCC Energy Manager.

4.5 Project Administration

Project Administration: A SLCC PM is assigned to each project and is the main point of contact for the Consultant.

Delegated Projects: Projects assigned by the State of Utah Division of Facilities Construction and Management (DFCM) to SLCC for administration require a Memorandum of Understanding (MOU) with DFCM and will use SLCC contract forms. Bidding will be through the SLCC Purchasing Department and coordinated by the SLCC PM.

4.6 Project Responsibility Matrix

A Project Responsibility Matrix is required for every project. The matrix is a tool used to clearly define roles and responsibilities for tasks, deliverables, and activities. It helps ensure everyone understands who is responsible for performing a task, who is accountable for its completion, who should be consulted for expertise, and who needs to be informed about the progress

4.7 Authorities Having Jurisdiction (AHJ) Coordination

Project Managers shall confirm the AHJ(s) required for all projects. Consultants, Contractors, and CM/GCs shall coordinate all AHJ activities, meetings, and correspondence with the SLCC PM.

- Projects that modify our leased facilities must have property owner's approval and comply with local zoning and building codes.

Comply with the following Authorities Having Jurisdiction (AHJ) Regulations, Submittal Requirements, & Approvals.

- Utah Department of Public Safety, State Fire Marshal
- DFCM Design Requirements, Current Edition
- SLCC Fire Marshall
- Designated Code Officials for Building Permits and Construction Inspections: Building Code Solutions (BCS) Reference: https://bcsgroup.com; West Coast Code Consultants, Inc. (WC3) Reference: www.wc-3.com;

Consultant, Contractor, and CM/GC AHJ Coordination Responsibilities:

- Coordinate code-compliance submittals and documentation.
- Copy the SLCC PM with all AHJ communications.
- Coordinate all AHJ required inspections, certifications, testing, etc.

SLCC Fire Marshal Additional Requirements:

- Communication & Coordination: Coordinate with SLCC Fire Marshall through the SLCC PM.
- Inspection Notification: 48-hour notice required.
- Required Construction Permits: Approve Hot Works Permits & verify Hot Works Permit Training
- Required Construction Documents Approval: Code & standards compliance, rated wall and floor penetration details.
- Required Inspections: All concealed penetrations of fire separation walls and floors, and concealed water supply lines.
- Required Observation: SLCC Fire Marshal to observe fire suppression systems flush
- Lock Boxes: If required, Fire Marshal provides access key lock boxes upon request for contractor installation
- Construction Site Protection: Provide portable fire extinguishers and firefighting water source.

4.8 Maintenance Support Design Standards

Attic Stock Storage:

- All new projects shall include an attic stock storage room.

Custodial Closet:

- Each building should have a custodial closet on the main floor. The closet should be a design to accommodate the entire facility. Minimum floor area shall be 10’ x 25’ with a 4 ft. door, racking system, pallet jacks, and custodial equipment. Eye wash station is required.
- Every floor above the first shall have a 3’ x 5’ closet with a 3 ft. door.
- Every custodial closet shall include a floor mounted mop sink with moisture protected wall surfaces (ceramic tile), and adequate mechanical exhaust ventilation.
- Provide adequate electrical outlets and services for charging and testing maintenance equipment.

Mechanical Rooms Design and Access:

- Provide sufficient space in mechanical rooms for proper installation, servicing, and replacement of all equipment
- Locate mechanical room to allow efficient ducting, piping distribution systems, and access to outside utilities
- Provide concrete equipment pads for all major mechanical equipment
- Allow space for storage of mechanical items such as filters
- Construct mechanical equipment rooms to reduce transmission of sound, vibration, and odor to other parts of the building. Locate mechanical rooms away from sounds sensitive areas
- Install curbs around the perimeter and seal the floor of mechanical rooms to prevent water flooding adjacent spaces

Service Access:

- Provide easy access for deliveries, mail services, waste storage and collection, and recycling collections.
- Owners Programming Requirements (OPR) or the Project Program shall determine if loading dock(s) are required.

Utility and Building System Access:

- Provide easy exterior access to mechanical and electrical rooms for maintenance and replacement of equipment and transformers. Locate air intakes away from loading docks and exhaust outlets.

4.9 Sole Source Products

Sole Source Products have been selected due to their unique characteristics, compatibility with existing systems, or specific performance requirements that are critical to the success of the project. No substitutions or equivalents will be accepted. Design professionals and contractors shall specify or include the cost of this sole source product in their bid. Any deviation from this specification must be approved in writing by the SLCC Project Manager prior to bid submission.

- HVAC Controls - Johnson Controls (Building or Campus Dependent)
- Fire Alarm Control Panels - Gamewell
- Lighting Controls - Wattstopper
- Access Controls for Doors - Millenium
- Door Hardware - Marks USA
- Irrigation Systems – Rainbird

4.10 Attic Stock

Attic stock to be included in all contracts. Contractor to provide attic stock for the following items.

Architectural Finishes, Quantity 5%:

- Ceiling Tiles
- Ceramic Tile
- Flooring: Vinyl Tile (LVT), Vinyl Composition Tile (VCT), Sheet Vinyl, Resilient Base
- Wainscot Materials: Wood, Ceramic Tiles, Sheet Vinyl, etc.
- Specialties: Wood Ceilings, etc.

Architectural Finishes, Quantity 5% with additional requirements:

- Carpet Tile: Full tiles equal to 10 percent of amount installed for each type, but not less than 10 sq. yd. (8.3 sq. m.)
- Paint: Provide 5 percent, but not less than 1 gallon (3.8 L) of each material and color applied
- Fabric: If specified in the Construction Documents shall be full roll width equal to the specified amount

Mechanical, Plumbing, Electrical, Low Voltage:

- Fire Sprinkler Heads: 5% or no less than 2 units
- Hardware, Locks, and Keys: (3) Three Sets minimum or 6%
- HVAC Equipment: Belts, one full replacement set
- Irrigation Heads: 5% or no less than 2 units
- Lighting: Drivers for LED lights: 5%, no less than 2 units
- Smoke Detector Heads: 5% or no less than 2 units
- Filters: (1) One Complete Set
- Fixtures with Lenses: Minimum (1) for each type

Exceptions to Attic Stock Requirements:

- Request shall be submitted in writing to the SLCC PM
- Shall be approved by the SLCC PM Prior to proposal (bid) submittal

4.11 General Building Requirements

4.11.1 Component / Element Standards

Design Consistency: Remodel projects shall match existing design concepts, makes, models, styles, etc.

Breakrooms/Prep Kitchens:

- Include space for a standard refrigerator
- Backsplashes are required on counters, as well as any other table or surface that is being installed on a wall
- Counters to accommodate standard size microwaves that can be placed at ADA compliant height
- Provide location for recycling and waste collection systems

Entrances: Provide mechanically supplemented entrance vestibules with walk off carpet tile to all buildings

Existing Conditions, Design: It is the responsibility of the Lead Architect or Engineer to review and document all existing site and facility conditions prior to beginning design. The consultant shall locate the origin of all utilities and services and be responsible to design connections and paths from the project to the origin. Contact the SLCC PM for assistance in locating utilities and services and to coordinate non-destructive testing if required (X-ray).

Existing Conditions, Construction: For any underground work, the contractor must use a professional utility locator company and is responsible for any damage to SLCC's utilities

Eyewash and Shower Stations: Comply with current OHSA recommendations. Provide eyewash station in each janitorial workroom and all teaching facilities that use hazardous chemicals. Contact SLCC Environmental Health & Safety Manager for additional requirements.

Furniture, Fixtures and Equipment (FFE): Selection of FFE shall include accommodation for persons of size.

General Maintenance: Avoid exterior design that creates perches for birds.

Information Systems: In all public areas, design locations for display systems including college newspapers, posters, notices and video monitors.

Lactation Rooms: SLCC is required by federal law under the Fair Labor Standards Act to provide a private, non-bathroom space for nursing mothers to express milk during the workday. All new buildings and significant remodels must incorporate lactation rooms. The room shall have the following features:

- Maximum visual and audio privacy with a minimum of 7' x 7' clear floor space
- A door with secure lock, small sink, full length mirror, small refrigerator, and a comfortable chair or glider
- Electrical outlets, location of which must be easily reached from chair placed in the room
- Identify locations on building maps
- Signage to identify support, assistance, and security contact information

Materials Selection: Materials are expected to be durable and easily maintained. Site paving materials and building exterior material to harmonize with materials used on other buildings on campus, including soffit and trim. Exterior walls should be brick, cast stone, or other permanent type material that does not require frequent cleaning and/or painting. Terracotta subject to AVP approval.

Project Identification Sign: Within the Construction Documents, the Consultant to provide the design for the Contractor's project identification sign. Each project over $1 million to have a color rendering of the project on the sign.

Recycling and Waste Collection: In all public areas, break rooms, kitchens, workrooms, and storage rooms, design conveniently located alcoves for both recycling and waste collection services. New projects must include new, attractive container systems or, if approved, be sized to accommodate standard college collection systems.

SLCC Installed Items: Verify with the SLCC PM which of the following items shall be owner furnished and/or owner installed. The Consultant may be asked to include in the owner furnished and/or owner installed items in the project budget.

- Audio visual equipment
- Automated external defibrillator (AED)
- Cylinders for each door requiring a lock
- Elevator lock box lids
- Fire extinguishers
- Furniture, fixtures, and equipment (FF&E)
- Information Technology cabling, infrastructure, and equipment
- Installation of toilet room accessories
- SLCC standard signage including room signs, exterior building identification signs
- Donor wall
- Interior building directories, digital or fixed display

Restroom Design: Inclusive or All gender restroom design shall be included in all new buildings and remodel projects as allowed by code.

Vending: Vending areas to be incorporated in the design of buildings. Use hard flooring in machine areas, locate adjacent to main corridors in a convenient part of the building. Carpet is prohibited.

Window Maintenance: Design should allow for interior and exterior window washing and replacement.

Wall Wainscot, Corner Guard, and Chair Rail Standards: The design team is responsible to help the college reduce maintenance and repair of walls and corners. The design team responsibilities include:

- Evaluate sources of damage and design protection systems to prevent damage
- Ensure protection systems are applied consistently throughout buildings and campuses
  Protection systems for consideration include stainless steel, stone veneer, ceramic tile, lacquered hardwoods, modular clip-on acrylic panels, and bumpers (4” x 4” maple block with base) for rolling chairs with desks.

Built-in Seating: Walls and seating surfaces shall be tile or other durable and cleanable approved product

4.12 Academic Environments

Reserved.

4.13 Administrative Environments

Office Work Environments: Administrative and Faculty Suites must conform to the State of Utah design standards. Standards are developed using the *Space Standards and Workplace Change Playbook* (3/10/21). Reference: https://dfcm.utah.gov/wp-content/uploads/Space-Standards-and-Workplace-Change-Playbook-31021.pdf. Workplace Strategy, taking a rigorous and integrated approach to delivering workplace environments, technology and work practices that support achievement of organizational objectives.

- INCREASE SPACE EFFICIENCY: Space saving, cost avoidance through accurate space requirements & alternative workplace scenarios
- ENABLE PRODUCTIVITY: Ability to access, attract, and retain talent. Develop technology and space to support your work
- ENHANCE EMPLOYEE EXPERIENCE: Increase flexibility and choice for employees, enable workplace environments that support your culture and reflect what you stand for

Work Style Profiling and Recommendations, consist of synthesis and conclusions from workplace strategy assessments to facilitate decision making around workplace solutions, and support programming for design. These involve two sets of activities including:

- Building Work Style Profiles using a tool to highlight work style differences across units

- Providing workplace recommendations spanning space, technology and cultural practices, based on challenges and opportunities observable through all workplace strategy studies.

DFCM Work Style Profiles:

- Resident: Groups that spend considerable time in their primary workspace with high levels of solo work, and lower levels of collaboration
- Adaptable: Groups that spend considerable time in their primary workspace and have higher levels of internal collaboration, often with immediate team members.
- Mobile: Groups that spend considerable time away from their primary workspace, potentially offsite, and have high levels of internal collaboration, often with immediate team members.
- Remote: Groups that spend considerable time away from their primary workspace, often offsite, and have lower levels of internal collaboration

SLCC Design Requirements:

- Focus on providing an efficient and effective work zone. Provide convenient shared open and/or enclosed meeting space for use when collaboration or sound privacy are needed. Retain meeting space in the immediate workspace only for those employee positions whose primary job function is to meet with others.
- Office Design: In private offices, the occupant must face the door when seated at the desk
- The College does not use partitions to create cubicle style office space.

Work Zone Standards: Open Offices (64-80 NSF); Private Offices (80-150 NSF); Open Collaboration (36-80 NSF); Enclosed Collaboration (80-280 NSF)

5 Salt Lake Community College Policies

5.1 Smoke Free Workplace Policy

The Clean Air Act prohibits smoking in a place of public access, public meeting, or any SLCC buildings or campus.

- "Smoking" means the possession of any lighted or heated tobacco or nicotine product in any form.
- "Lighted Tobacco," means both tobacco that is under self-sustained combustion and tobacco that is heated to a point of smoking or vaporizing."
- Smoking is not permitted within 25 feet of any entranceway, exit, open window, or air intake of a building where smoking is prohibited.

See Alcohol, Tobacco, and Other Drug Policy: https://www.slcc.edu/policies/policies/student_affairs/Alchol&Other_Drugs.

5.2 Workplace Safety Policy

Proper personal safety gear shall be worn on the project site. Rotating equipment will dictate the use of safety glasses for those operating or working in the near vicinity. Work boots or shoes shall be worn around all power equipment which is operated in the vicinity of the feet. Dangling earrings are not acceptable in the mechanical environment. Long hair will be tied back.

Possession or use of weapons, including firearms, while upon properties owned or controlled by the College or where College activities occur, is prohibited, except for authorized law enforcement officers and persons exempt under Utah State law. Because weapons are capable of inflicting serious injury and pose a clear risk to persons and property, violations of this policy may result in suspension or termination from the College and prosecution under appropriate laws.

See Weapons Policy: https://www.slcc.edu/policies/policies/finance_and_administration/2.5.050.aspx

5.3 Construction Safety Requirements

Site Safety and Security: Site safety and security is the highest priority for SLCC projects. The contractor is responsible for all job site safety and security (including but not limited to materials, tools, and equipment stored on site). The contractor shall review their safety program with the SLCC PM prior to project initiation and at each construction progress meeting. The contractor's safety program shall comply with all applicable laws and required safeguards. The Contractor shall post signs, erect barriers, and provide those items necessary to implement their safety program. The contractor shall have all workers and visitors on site wear safety hard hats, as well as all other appropriate safety apparel such as safety glasses and shoes and obey all safety rules. The contractor shall post a sign in a conspicuous location indicating the project's safety requirements including hard hats, eye protection and other appropriate precautions. The contractor shall loan safety equipment to visitors as required.

Hazardous Materials: If hazardous materials are encountered during the course of the work, the contractor shall cease operations in that area and notify the SLCC PM immediately. The SLCC PM will then employ an abatement contractor, who will remedy the affected area. The contractor shall not resume work in the affected area until approved by the SLCC PM.

5.4 Facility Access

Facility access for site and facility construction shall be coordinated and approved by the SLCC PM.

- Keys and Electronic access must be requested 24 hours in advance.
- Instructions and on-line forms are available at the Facilities Services, Key Office Department website.

5.5 Facilities Design Guideline: Room Numbering

Room Numbering Approvals:

- Rooms receive a unique number in each design phase, approved by the Space Inventory Manager.
- Required design and construction submittals and approvals: Schematic Design, Design Development, Construction Documents, Conformance Sets, and all Construction Change Orders.
- Before documenting HVAC systems, electrical circuits, building signage, etc., the Space Inventory Manager must approve all room numbers.

SLCC Room Numbering Procedure:

Three-digit numbers shall be used for building circulation, rooms, and spaces.

- The first floor will be numbered 100's; second floor will be 200's; third floor will be 300's etc. Ground floor or basement rooms shall be numbered in the 000 category (example: Hallways 000. 000A, 000B, and Room numbers 001, 002). Exceptions will be made for buildings greater than 001-100. Do not use "I" or "O" as room letter suffix.

Numbers should flow from one end of the building to the other.

- In a building with only one dividing corridor, room numbers should flow in ascending order from one end of the building to the other. In a building with more complex corridors, numbers should flow in ascending order in a clockwise direction through the corridors from the main entrance, or similar location such as elevator lobby. Use odd numbers on the left side and even numbers on the right side.

Skip numbers to maintain succession of room numbering and allow for future renovations.

- In some instances, room numbers on one side of a corridor shall be skipped in order to maintain succession with the room numbers on the opposite side of the corridor. This may occur, for example, when a suite of rooms or larger space is accessed through a single door and there are no other doors on that same side until further down the corridor. This will allow for future renovations that may convert suites or large spaces into separate or small rooms with a corridor door.

Use similar numbering on each floor.

- Numbering systems on all floors should be similar, even when the floor plans are significantly different.

Use alphabetic suffixes for rooms entered from other rooms.

- Rooms entered from a main corridor or lobby are number with a number only, no letter suffix. When rooms open off another room and not from a corridor, i.e. a suite of offices, use the number of the first room and a letter suffix i.e. 102 A. Rooms lettering should follow using the clockwise format.

Number all accessible spaces.

- Number all accessible spaces including closets, pipe chases, mechanical area, vestibules etc.

5.6 Wayfinding

Wayfinding Design Guidelines: SLCC has completed a comprehensive Master Plan and Implementation Project for Taylorsville Redwood, south City, and Jordan Campuses. All projects must comply with the Wayfinding Design Guidelines. Contact the PM for guidelines and wayfinding coordination.

A team effort is required to create clear, uniform signage that complies with the Americans with Disabilities Act (ADA) and meets the requirements for Salt Lake Community College campuses. In accordance with ADA, signs are regulated on text length, letter size, raised lettering, mounting, international symbols, contrast, etc. The context of the sign must also include Braille.

General Contractors are required to provide a room sign, meeting college standards, for every room within the project's construction limits. The SLCC PM shall approve signage prior to fabrication and installation. Contact SLCC for current Sign Specifications. The SLCC Sign Shop reserves the right to complete signage projects at its discretion.

5.7 Facilities Services Policies

Facilities Services expect all consultants and contractors to conform to SLCC and Facilities Services Division policies. The following References are provided for your convenience. Please check the college website for the latest versions and any newly approved policies (slcc.edu).

SLCC Policies & Procedures, Finance & Administration, Facilities

- Facilities Renovations, Remodeling, & New Construction
- Key (SLCC Policies & Procedures, Policies, Finance & Administration, Facilities)
- Motor Vehicle (SLCC Policies & Procedures, Policies, Finance & Administration, Facilities)

Facilities Services Division Procedures

- Blood borne Pathogens
- Campus Posting Guidelines
- Confined Spaces
- Custodial Dept. Rules and Regulations
- Dress Standards
- Holiday Decorations Policy
- Integrated Pest Management Policy (IPM)
- Key Office/ Door Opening Policy
- LOTO Policy
- Operating Policy
- Portable Heater Policy
- Quality of Expectation
- Remodel/Construction Process – Not Found
- Roof Access Policy
- Sign Shop Policy
- SLCC Safety Shoe Policy
- Summer Dress Policy
- Work Order Billing Policy

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SPECIFICATION SECTIONS

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DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 01 - GENERAL REQUIREMENTS

DIVISION 01 - GENERAL REQUIREMENTS

01 14 00 WORK RESTRICTIONS

On-site Work Hours

- Limit work in existing buildings to normal business hours of 7:00 am to 5:30 pm, Monday through Friday, except as otherwise arranged and approved through the SLCC PM in writing.
- Weekend hours must be coordinate with the SLCC PM

Noise, Vibration, and Odors

- Notify SLCC PM no less than two days in advance of proposed disruptive operations.
- Obtain SLCC PM's written permission before proceeding with disruptive operations.
- Disruptive operations may require evening, early morning, or weekend work.
- Finals weeks are quiet hours on campus and may prohibit work during normal business hours.

Existing Utility Interruptions

- Do not interrupt utilities serving occupied facilities without SLCC PM approvals
- Approval Requirements:
    - Provide temporary utility services according to the project requirements
    - Notify SLCC PM no less than two days in advance of proposed utility interruptions
    - Obtain written permission before proceeding with utility interruptions.

01 14 13 ACCESS TO SITE

- Contractors shall have full use of the project site for construction operations during the construction period.
- Contractor's use of the project site is limited only by the Owner's right to perform work or to retain other contractors on portions of the project.
- Limit use of the project site to areas within the contract limits indicated.
- Do not disturb portions of project site beyond areas in which the work is indicated.
- Contractor shall be responsible for securing and maintaining a safe site.

01 14 16 COORDINATION WITH OCCUPANTS

- SLCC will occupy adjacent buildings on campus and/or adjacent portions of the building during the entire construction period. Coordinate with the SLCC PM during construction operations in order to minimize conflicts and facilitate the College's day-to-day operations.
- Maintain existing exits unless directed by SLCC and approval of authorities having jurisdiction in writing.
- Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from SLCC and approval of authorities having jurisdiction.
- Owner Limited Occupancy of Completed Areas of Construction: SLCC reserves the right to occupy and to place and install equipment in completed portions of the work, prior to Substantial Completion of the work, provided such occupancy does not interfere with completion of the work. Such placement of equipment does not constitute acceptance of the total work.
    - Architect will prepare a Certificate of Substantial Completion for each specific portion of the work to be occupied prior to the owner's acceptance of the completed work.
    - Obtain a Certificate of Occupancy from Authorities Having Jurisdiction (AHJ) before limited Owner Occupancy.

- Before limited Owner Occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, owner will operate and maintain mechanical and electrical systems serving occupied portions of work.
- On occupancy, owner will assume responsibility for maintenance and custodial services for occupied portions of work.

01 18 00 PROJECT UTILITY SOURCES

Temporary Utilities

- The contractor shall arrange with utilities(s) for temporary connections and bear all costs for these utilities for projects involving new buildings. SLCC provides all utilities on most campuses and some peripheral areas. The contractor shall arrange for connections through FSD. The Contractor shall provide and install meters for measuring use of utilities purchased from SLCC. FSD shall read or have the meters read at the beginning of the project, monthly, and at the end of the project. The contractor shall be responsible for all utility costs including those from SLCC.

01 21 00 ALLOWANCES

Certain items are specified in the Contract Documents by allowances.

01 31 00 PROJECT MANAGEMENT AND COORDINATION

- Campus Facilities Manager (CFM): The CFM must be included in all phases of the Project Planning, Design, & Construction to improve the design solution, to coordinate the work, and to provide a seamless transition from construction to occupancy.
- Certificate of Occupancy: Complete construction in a timely manner to minimize punchlist and warranty items.
- Code Approval: The code approvals process involves managing code compliance in design and coordinating the approval procedures. Coordinate with SLCC PM, SLCC selected Authorities Having Jurisdiction (AHJ), DFCM PMs, State of Utah AHJs.
- Project Administration Handoff: To streamline the project administration handoff, it is essential to manage warranty and facilities management work effectively. This involves managing user expectations to ensure a smooth transition.
- Project Safety & Site Management: Contractors are required to maintain a clean project site and ensure clear access, aiming to minimize the impact on Facility Maintenance.
- Schedules: The Contractor shall provide to the Consultant a construction schedule prior the start of construction and with each pay request. Pay requests without schedules will not be processed. The Consultant will review the pay request to verify accuracy and amount completed and then transmit to the SLCC PM for approval and payment.
- Schedules, Additional Requirements for Mission Critical Projects and Projects Over $1 Million: Provide a Critical Path Method (CPM) schedule prior to beginning project. The schedule shall be updated, at least biweekly identifying any and all changes. Changes that impact the Critical Path shall be accompanied by a recovery strategy. The recovery strategy shall be approved by DFCM PM, SLCC PM and Consultants.
- Progress Meetings: The Consultant shall be in charge of the construction progress meetings, set the agenda and take minutes of the meeting. The Consultant will distribute copies of the agenda and minutes to the SLCC PM and Contractor prior to each meeting. The agenda for weekly scheduled progress meeting will cover:
  - Problems and potential field orders or change orders, proposal requests, and RFIs.
  - Update of the construction schedule.
  - Work completed during the prior week.
  - Items to be completed during the next week with assignments.

01 41 00 REGULATORY REQUIREMENTS

Permits:

- Building Permits are not required on SLCC owned (state owned) property or for connection to College Utilities.
- Building Permits are required on SLCC leased property. The Consultant shall contact the Local Authorities Having Jurisdiction (AHJ) and apply for any required permits.

- Digging Permits are required for any excavation, including utility installation, interruption, shut-off or outage, etc. Digging Permits are obtained through FSD Planning and are required to be submitted no later than five working days prior to the planned digging date. No digging shall take place until a valid Digging Permit has been obtained. The Digging Permit form can be found at https://i.slcc.edu/facilities/docs/ehs/DiggingPermit.pdf .

01 52 00 CONSTRUCTION FACILITIES

- When required, a construction office will be provided by the Contractor on the job site. The construction office will include conference room, table, and chairs sufficiently sized to accommodate meetings of 12 individuals, electrical power service and 120-V ac duplex receptacles with no fewer than one receptacle on each wall, tack board, marker board, Wi-Fi, video projector or large monitor, drinking water, private toilet, and wash facilities. The office will have heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 74 degrees Fahrenheit and have adequate lighting.
- The Contractor will provide temporary toilets, wash facilities, and drinking water for the use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of these facilities.

01 53 00 TEMPORARY CONSTRUCTION

- When routing pedestrians around an area of construction, the Contractor will provide temporary walking surfaces across existing landscaped areas. These surfaces must be constructed of a durable material with a slip-resistant surface. Coordinate the use and placement of temporary walking surfaces with FSD. The Contractor will be responsible for restoring any landscaping damaged by pedestrians routed over the landscaping in order to avoid construction.
- Accessible paths complying with ANSI 117.1 shall be maintained or coordinate alternate routes with SLCC PM.

01 55 00 VEHICULAR ACCESS AND PARKING

- Indicate on the Construction Drawings or Conformance Set access routes to the job site for concrete trucks, delivery trucks and other vehicles required for the project. These routes should be determined with FSD. Any damage to these areas shall be repaired by the Contractor.

01 56 00 TEMPORARY BARRIERS AND ENCLOSURES

- Prior to commencing earthwork, furnish and install site enclosure fence in order to prevent people and animals from easily entering the site except by entrance gates. Entrances need to be locked at the end of each workday. The Contractor will maintain security by limiting the number of keys and restricting distribution to authorized personnel. Furnish one set of keys to the Owner. Fencing location to be shown on the Construction Drawings.
- Open excavations outside of construction fences shall be protected by a six-foot high chain link fence in good repair installed in a manner that will not create a safety hazard. Access gates to be locked.
- When pedestrians are routed around construction areas additional barricades will be required to prevent damage to adjacent landscaped areas.
- Contractor to provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations and similar activities. Where heating and cooling is needed and the permanent enclosure is incomplete, insulate temporary enclosures.
- Comply with requirements of Authorities Having Jurisdiction for erecting structural adequate barricades, including warning signs and lighting.
- Temporary barriers and enclosures are to be dismantled and removed from the site by the Contractor when the need for its services has ended or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facilities. Repair damaged work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

01 74 00 CLEANING AND WASTE MANAGEMENT

- Maintain project site free of waste materials and debris. Clean project daily, including common areas.
- Enforce requirements strictly and dispose of materials lawfully.

01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

- Develop a Waste Management Plan according to ASTM E 1609. The plan shall include waste identification, waste reduction plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume.
- Do not bury or burn waste materials on-site. Do not dump waste down sewers or into waterways.
- Dispose of materials lawfully.

01 77 00 CLOSEOUT PROCEDURES

- A Pre-Substantial Completion Inspection will be scheduled to include all Consultants, SLCC PM, Trades and O&M personnel, Building Code Official or representative, and other invited SLCC representatives. SLCC representatives will provide inspections reports to the SLCC PM who will provide the consultant with copies. The Consultant will check for conformance to the Contract Documents and shall assemble all reports from SLCC representatives and distribute copies to the Contractor and FSD.
- Substantial Completion Inspection will be held after completion of the items noted on the pre-substantial completion inspection report have been remedied and when the building is ready for occupancy. The Substantial Completion Inspection will include the State Fire Marshal, State and SLCC Official, the Consultant and the Contractor.
- Substantial Completion Certificate will be issued at the time that SLCC may occupy the building. The following Substantial Completion requirements have been clarified by the Attorney General and shall be included in the Contract Documents:
    - All Fire Marshal items are cleared, and a “Certificate of Fire Clearance” is issued.
    - The Consultant has received balance reports from the Contractor.
    - All correction items have been substantially completed.
- The Contractor will provide a training session with FSD personnel on all mechanical, electrical, communication, etc. systems. It is the Contractor’s responsibility to submit to the SLCC PM an attendance log of the personnel present at the above training. Contractor to provide FSD with a video of the training session.
- Transfer of Deliverables Process: An itemized transmittal shall accompany all deliverables. The Contractor shall transfer deliverables through the Consultant to SLCC. All Contractor supplied items transferred to the College shall be accompanied by a Letter of Transmittal signed by an authorized agent of the Consultant and delivered to FSD. Proper use of approved transmittal prevents misunderstanding and loss of value documents, materials, and equipment. The Consultant shall verify that the correct quantities of all attic stock items are transferred.
- Contractor Deliverables: The Contractor will provide copies to the FSD and to the Consultant for review and approval. The Contractor shall revise Deliverable as needed to receive Consultant approval. Deliverable shall include:
    - Record Drawings, as per DCS Section 01 78 39
    - Training session documents
    - List of all attic stock materials, quantities, and location
- The Consultant will incorporate all contract modifications into the original files and provide FSD with a reproducible record set, and electronic files as outlined in the DFCM CADD Criteria. The original Contractor red-lined set shall be delivered to FSD.
- Final payment will not be issued until all of the above items have been delivered.

01 78 39 PROJECT RECORD DOCUMENTS

Comply with DFCM standards.

Engineering Calculations:
- Structural Calculations: Submit stamped and dated structural calculations including firm's project number.
- Energy Model: Submit PDF with all assumption and firm contact shall be submitted to FSD in electronic format.

Construction Documents, PDF:
- Construction or Conformance Set
- Construction Onsite Redlines
- As-Built Drawing
- All Submittals, Organized by Master Specification Sections
- All RFI, Change Orders, Construction Directives

Architectural & Engineering Models & Drawings
- Format: AutoCAD or Revit
- AutoCAD XREFs: Must be attached. Overlay XREFs are prohibited.
- Construction or Conformance Set
- As-Built Set.

Operations & Maintenance Manuals
- PDFs with bookmarks per Master Specification
- Two (2) hard copies (bound/binders)

Complete Set of Submittals
- PDFs with bookmarks per Master Specification
- Two (2) hard copies (bound/binders)

Ductwork & Conduit Documentation
- Video documentation of all ductwork and conduits before the installation of the ceiling grid system.
- Audio narration shall include the room number, identification of the duct or conduit and its location in the room.
- The digital file is to be delivered to the SLCC PM after the completion of all duct and conduit work.

DIVISION 02 - EXISTING CONDITIONS

02 21 00 SITE SURVEYS

Survey: SLCC or DFCM will provide an engineered site survey showing contours, existing grades, streets, walks and any special situations that might be within the site of the new building. The Consultant will also receive a map of the area showing the location of SLCC utilities: SLCC Tunnels, sewer, water (culinary and irrigation), electric lines, telephone, communications, gas lines, and steam lines.

- If the utility work involves crossing of city streets the Consultant must obtain information on location and depth of sewer lines, water lines, etc., from local authorities and private utility companies.
- Elevations of survey monuments on SLCC maps and drawings are based upon U.S. Geological (USGS) Surveys.

Soil Report: Geotechnical soils report will be provided by the Owner. Testing for subsoil data shall be performed by third 3rd party testing companies. The testing consultant shall be contracted by SLCC or DFCM.

02 26 23 ASBESTOS ASSESSMENT

All projects require a Hazmat assessment. See also Section 02 82 00 Asbestos Remediation SLCC Construction & Trades will contact a Hazmat Survey Company from DFCM's list. The project PM can determine if an assessment is not required due to a recently completed assessment. If the cost of the Hazmat Survey is less than $3,500 SLCC can direct award.

02 26 26 LEAD ASSESSMENT

All projects require a Hazmat assessment. See also Section 02 83 00 Lead Remediation. SLCC Construction & Trades will contact a Hazmat Survey Company from DFCM's list. If the cost of the Hazmat Survey is less than $3,500 SLCC can direct award.

02 24 00 ENVIRONMENTAL ASSESSMENT

Environmental Assessments, when required, will be commissioned by SLCC or DFCM.

02 32 00 GEOTECHNICAL INVESTIGATIONS

Geotechnical Investigations, when required, will be commissioned by SLCC or DFCM.

02 41 00 DEMOLITION

Materials Ownership:

- Unless otherwise indicated, demolition waste becomes property of Contractor, Demolition Contractor, is encouraged to salvage building materials during process of demolition. Refer to Division 01 Sections 01 74 19 - Construction Waste Management and Disposal, and 01 18 113 - Sustainable Design Requirements.
- Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner. Carefully salvage in a manner to prevent damage and promptly return to Owner.
- When feasible, removed brick should be carefully salvaged and returned to the Owner.

02 82 00 ASBESTOS REMEDIATION

SLCC PM shall contract and coordinate remediation though a certified abatement contractor following DFCM Policies which require independent remediation monitoring.

02 83 00 LEAD REMEDIATION

SLCC PM shall contract and coordinate remediation though a certified abatement contractor following DFCM Policies.

DIVISION 03 - CONCRETE

03 30 00 GENERAL REQUIREMENTS

Do not use colored concrete.
Do not paint concrete.

- Site Cast Concrete:
  - 4500 fc @ 28 days, 0.45 Max W/C Ratio, 4.5% Air Content, 1" Max Aggregate, F1/S1/C1 Exposure Class
  - Microfiber Reinforcement complying with ASTM A706, Grade 60
  - Slump Limit: 4"
  - Cure: Sealer (double application)
  - Concrete sidewalks are constructed with 6 inches of concrete for regular sidewalks, vehicle traffic, and 10 inches for fire lanes, with an additional 2 inches of 1-minus rock. Note that road base is prohibited on this construction.

- Sidewalks:
  - Pour diagonal corner piece in sidewalk corners by all building entrances to help reduce mud and dirt being kicked up onto the sidewalk and tracking dirt into buildings during snow removal.
  - Use concrete on entrance sidewalks. Bricks, pavers, and flagstone sidewalks are prohibited due to maintenance challenges, including difficulty with cleaning and snow removal.
  - Broom finish.
  - 6” minimum thickness.
- Stained Concrete:
  - Appropriate for use in interiors lab space.
  - Finish level: Project dependent to be approved by FSD. Contact SLCC PM.
- Interior Concrete
  - Seal concrete interior floors that will be exposed to pedestrian traffic.

Also, see DFCM Design Requirements

DIVISION 04 - MASONRY

04 05 05 SELECTIVE DEMOLITION FOR MASONRY

SLCC shall determine when masonry salvage is required. Salvaged bricks shall be returned in good condition, and free from mortar. Salvaged brick shall be stacked neatly and orderly on standard pallets. Coordinate with the SLCC PM.

DIVISION 05 - METALS

05 00 00 METALS GENERAL REQUIREMENTS

Metals selected should be able to service a 50-year building.

Exterior Metal Surfaces:

- Hot dipped galvanized steel
- Stainless steel - shall be finished with stainless steel polishing wheels.
- Aluminum

05 51 33 METAL LADDERS

- Metal ladders to be galvanized steel.
- Torch-cut modifications are not acceptable.

05 52 00 METAL RAILINGS

- Railings to be stainless steel or brass.
- Galvanized and rigid stock to absorb abuse may be used as outside fencing or gating.
- Use only stainless steel or anodized aluminum at interior stairs.
- Exterior railings to be stainless or anodized aluminum only.
- Field painted steel rails are not acceptable.

05 53 00 METAL GRATINGS

- Design gratings and trench covers to be structurally strong, stable and solid. Gratings to be galvanized and a minimum 3/16” thick flat stock.

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

06 20 00 FINISH CARPENTRY

General Requirements:

- Door Requirements:
  - Install LCN door closers on all doors.
  - Install door closers with hold-open features where necessary and approved by FSD..
  - Place kickplates on doors located in heavy traffic areas to prevent damage.
- Wall Base Requirements:
  - Johnsonite, Burke, Roppe, or VPI for durability and consistency.
  - Wall bases shall be 4” with 5/8-inch toe with minimum length of 8 feet
- Toe kick: Rubber base or exterior glued plywood or hardwood-math cabinet finishes or surrounding floor base. Outside corners must be molded, tooled, or scored to fit properly and to prevent damage.

06 41 00 ARCHITECTURAL WOODWORK

General Requirements:

- Standards:
  - North American Architectural Woodwork Standards (NAAWS) Version 4.0.
  - Architectural Woodwork Institute (AWI) ANSI 0641 Custom Grade or better.
  - Follow the DFCM University of Utah design requirements as outlined on page 44, section M(2).
- Cabinet Standards:
  - Do not use composite materials (MDF/Particle Board) for drawer box construction.
  - Install soft-close mechanisms on all doors and drawers, using either undermount or side mount hardware.
  - Use institutional-grade hinges on large doors measuring 60 inches or more.
  - Ensure all hinges and drawer tracks meet the required weight and size specifications.
- Hardware Standards:
  - Blum or Salice hardware for cabinet doors.
  - Blum or Accuride hardware for drawer construction.
- Design Considerations:
  - Establish consistent standards for colors and materials, including cabinet fronts, hardware (pulls and knobs), countertop materials, and cabinet hardware (tracks and hinges).
  - Use consistent lock systems on all cabinets with a master key option.

Construction Requirements:

- Countertops Materials:
  - Limit the use of laminate materials; prefer solid surfaces for restrooms and work areas that are repairable; use Quartz for restrooms and work areas; limit the use of Granite; prefer Porcelain for its UV resistance and heat tolerance despite its expense and brittleness; and choose Stainless steel for its resistance to heat, stains, water, and bacteria.
  - Marble/Quartz: Prohibited.
  - Granite: Can be used.
  - Solid surface with eased edge.
  - Plastic Laminate: Prohibited for wet areas and laboratories.
    - Non-staining, high slick, and of maximum hardness.
    - One-piece top with backsplash and bull nose, full wrap, 2” beyond cabinet face.
    - Sits on top of the cabinet.
  - Colors & Texture: Specified by designer and approved by SLCC Interiors Group.

- Cabinet Boxes and Base Cabinets:
  - Include ¾-inch back band for fastening to the wall.
  - Wall Cabinet Materials:
    - Oak panels: Plain sliced red oak

        - Maple panels: Hard rock natural finish
        - Melamine
        - Wall Cabinet Back: ¼ - inch panel as specified
        - If closed bookcase, white melamine with MDF core.
        - If open bookcase, use wood with wood box, melamine with melamine box.
    - Wall Cabinet Sides:
        - Line bore with 5 mm holes.
    - Base Cabinet Back:
        - Non-sink areas: Use ¼-inch melamine.
        - Sink areas - no back.
    - Base Cabinet Sides:
        - For wood: Use ¾" hardwood with ¼" edge; line bore with 5 mm holes.
        - For melamine: Particleboard preferred; MDF core also acceptable; line bore with 5mm holes.
    - Separate Cabinet Base:
        - In sink/water areas: Exterior glue hardwood plywood (Baltic Birch), caulk at floor & 6" up back wall.
        - Other areas: use particle board or MDF
        - Cover with rubber cove base or matching laminate.
    - Faces / Edges:
        - For wood, use ¼-inch edge.
        - For melamine (2-sided) or plastic laminate, use 5 mm PVC edge.
- Cabinet Drawers
    - Cabinet Drawer Fronts - Materials:
        - Wood Grain - Use ¾" gold ply Oak or Hard Rock Maple Veneer with ¼ inch wood edge banding.
        - Laminate - Use MDF or particle board core with either a ¼ inch edge or a 5 mm PVC edge.
        - Melamine with 5 mm edge.
        - Cabinet Drawer Front - Finish: High solid lacquer.
    - Drawer Box – Wood or ½-inch Baltic Birch plywood with 7-9 plies.
    - Drawer Mounts/Slides: Use bottom mounts with a bottom mount drawer slide, self-closing.
        - DO NOT USE groove mount.
    - Drawer Construction: Box with front, back and two sides. Rabbit or lock joints.
        - Attach drawer fronts with screws.
    - Drawer Tab Pull: 1 ¼" Tab Drawer
        - Pull sits flush on top of drawer door.
    - Use bolts to attach handles.
    - Use longer screws to secure drawer fronts.
    - Drawer Pull: 3" c.c. (center-to-center screw holes), solid brass construction with different finishes.
    - Colonial Bronze Company Pulls:
        - COL-167-14 Polished Nickel
        - COL-167-15 Satin Nickel
        - COL-167-15CC Nickel Stainless
        - COL-167-26 Polished Chrome/Satin Chrome
    - Drawer Guides: Full Extension Slide
        - Grass America
        - Blum
- Cabinet Doors
    - Cabinet Doors - Materials: Same as drawers.
        - Hinges: Use 120-degree European, self-closing clip hinge; Blum 71T5580
    - Shelves:
        - Wood: ¼ inch to match box.
        - Melamine: Use two-sided ¾" melamine

  - Clips: Use 5 mm L-shaped nickel clips with pinhole. 5 mm 1M/B 8551080
- Hardware
  - Door and Drawer Handles: Standardize pieces with supply on hand for repairs.
  - Wire Pulls: Use pulls with ½-inch diameter base.
    - Colonial Bronze Company: 167-26d
  - Cabinet Locks: Use 7/8 4T3 Keyway System. Brushed aluminum or polished brass.
    - Door pairs: Use elbow catch on inactive door.
    - Single door: Use an angle ½ x ¾ inch steel strike with chrome finish.
    - Olympus brand locks:
      - Doors: 100DR
      - Drawers: 600DW
      - Elbow Catch: P/N 1018-b or -al
  - Door Bumper Pads Use ¼-inch felt, self-sticking.
  - Installation
    - Block or Brick Walls: Use tap-con fasteners or similar approved wall anchors.
    - Sheet Rock or Dry Wall: Fasten to metal studs with approved wall anchor.
    -
    - Screws: Use #10 zinc pan head screws to fasten cabinets to wall surface.
  - Cabinet Consolidation: Fasten cabinet units together with screws.

DIVISION 07 - THERMAL & MOISTURE PROTECTION

07 00 00 GENERAL REQUIREMENTS

- Provide roof fall protection as per OSHA and IBC standards. All fall protection shall be galvanized or stainless steel
- Furnish and install handrails around all roof hatches; Provide ladder cages if taller than 15 feet
- For low slope (flat) roofs provide PVC or TPO material 25-30 year warranty as per DFCM standards
- If foundation dimple board is specified, a cap is required to maintain the waterproof system.
- Foundation Sleeves for conduits and piping shall be sealed on the interior face and exterior face by approved mechanical seals.
- The exterior seal shall form a water-tight connection to the foundation waterproofing system.
- Approved mechanical seals are Link Seal, OG Gedney, or approved equals. Mechanical seals shall be compatible with the conduit or piping. New sleeve locations shall avoid cutting imbedded structural elements.
- Imbedded structural element locations shall be verified by X-ray imaging.

DIVISION 08 - OPENINGS

08 11 00 METAL DOORS & FRAMES

- Standard: Hollow Metal Manual NAAM Standard HMMA 840-07 Guide Specification for Installation and Storage of hollow Metal Doors and Frames.
- Interior Doors and Frames: Anodized aluminum door frames to be pre-approved by SLCC.
- Paint Requirements:
  - Use semi-gloss DTM (Direct to Metal) paint.
  - Match color of existing door frames when project is within an existing building.
  - Painted door frames to be spray painted and not rolled.

08 14 00 WOOD DOORS

- Wood doors shall comply with ANSI/WDMA I.S.1A-2 Performance Duty: Extra Heavy Duty, Finish: Red Oak

08 36 16 BARN (SLIDING) DOORS

- Sliding doors are prohibited for offices, classrooms, and all other locations that require security.

08 50 00 WINDOWS

- Windows to be easily accessible for cleaning and glazing replacement.
- Consider bird-friendly window design by use of stock patterns with a ABV Threat Factor Rating of 25 or below (American Bird Conservancy, 2023)

08 70 00 HARDWARE

- Provide shop drawings or cut sheets for all metal hardware (locks, poles, hinges, etc.) surface mounted accessories.

08 71 00 DOOR & ACCESS CONTROL HARDWARE

Salt Lake Community College

Door Hardware Standards Acknowledgement Form

Attention: Architects, Design Professionals, Hardware Specifiers, Contractors, Project Managers, and other concerned parties:

Salt Lake Community College has standardized the following door and hardware products. Please adhere to the following when specifying hardware and/or access control for Specification Section 087100 and 084100 in new construction and/or renovation.

Key System	ANSI Grade 1. BHMA A156.5 ASSA Key System. KIL. No substitution. Provided and installed by owner.
Access Control System	Head End System: XXXX Integrator: XXXX Readers: XXXX Credentials: XXXX
Locksets	ANSI Grade 1. BHMA A156.2 Cylindrical Locksets Marks 195
Electrified Locksets	ANSI Grade 1. BHMA A156.2 Mortise Locksets XXXX Cylindrical Locksets Marks
Exit Devices	ANSI Grade 1. BHMA A156.3 Marks
Electrified Exit Devices	ANSI Grade 1. BHMA A156.3 SDC LR100-MDK
Electric Strikes	ANSI Grade 1. BHMA A156.31 NOT WANTED
EPTs / Wiring Harnesses	EPTs: PRECISION Electrified Hinge: COMMAND ACCESS
Mullions	Keyed Removeable Mullions. Match manufacturer of Exit Devices.
Surface Closers	ANSI Grade 1. BHMA A156.4 Cast iron body.

	LCN 4040XP
Flush Bolts	Ives
Hinges: Architectural Continuous Pivots	ANSI Grade 1. BHMA A156.1 Ives Provide continuous hinges on all Aluminum Doors and Frames. Provide continuous hinges on Wood or Hollow Metal Doors with a width greater than or equal to 3'-6".
Stops	Glynn-Johnson 100S-ADJ concealed overhead stops to be used on all exterior aluminum doors.
Automatic Operators	Electrohydraulic Operators SEE STANDARD-STANLEY
Kickplates Push/Pull Plates Grips	Ives
Doors / Frames	
Pre-Installation Meeting	Required for all trades involved in installing door hardware. Including, but not limited to: Hardware Installers, Electricians, Integrators, and General Contractors. Meeting shall be conducted by an Allegion Representative. Owner shall be invited. The best time for this meeting is after frames have arrived and a hardware installer has been selected, but no later than two weeks before arrival of door hardware on site.
Post-Installation Inspection	The purpose of this inspection is to verify that Allegion products have been installed according to the manufacturer's instructions. This shall be performed by an Allegion Representative. This shall be conducted near the date of substantial completion.

Facility personnel are trained in the installation and maintenance of the above material. We advise you to contact our consultants for questions and to write the hardware specification (Section 087100) for all projects. Facility personnel are trained in the installation and maintenance of the above material, and the maintenance department owns considerable stock of material for repair work. The facility is not prepared to accommodate the adoption of an additional standard as the hardware standards in place serve the campus well.

Signed: _____ Dated: _____

Signed: _____ Dated: _____

End of Form

Access Control Systems:

ASSA key system: This system dictates what kind of keys and cylinders SLCC uses. SLCC must purchase the components of the ASSA system, as SLCC holds the rights to the sidebars and keys. SLCC uses, almost exclusively, Schlage type cores (Schlage, Marks, and Corbin), meaning they are a screw type tail piece. SLCC has had the fewest problems when using Marks. Corbin type locks are no longer used, as the double stocking of cylinders is prohibitively expensive.

Millennium Electronic System: This is an open architecture system, meaning that all of the readers, locks, and other parts for making the door function can be made by other companies. However, the site controller, door controller and power supplies for those items must be purchased from the company. SLCC to purchase.

- Install a card access reader for each door that enters a hallway, except for electrical rooms.
- Users will pay for installation of card access readers beyond that scope.
- Card readers to be located outside and inside classroom doors. Use toggle function.
- Power supplied by standby generator circuits.

General Requirements:

- Card Readers: Locate outside and inside of classroom doors. Use toggle function.
- Closers: Use LCN closers attached with through bolts. Coordinate with Carpenter Department
- Door Hardware: Must accept ASSA cylinder.
- Door Operators:
    - Door Operator: Stanley Magic-Access® low energy swing door operator.
    - Power Swing Door Operators: Horton Automatics EasyAccess® Series 7100 Surface Applied, Single & Pair with Parallel Inswing Arm.
- Electrified Exterior and Interior Doors:
    - Use fail-safe lever handles on all stair exits/entrances
    - Electrical lever door should be core drilled and use power transfer hinges with 18-gauge wire
    - All Doors to be bored for electronic hardware
- Functions: Entry function on all non-electrified office doors. Storeroom function on non-electrified storeroom.
- Hardware Finish: New construction & Large Remodels shall be 626, 26, or 26D, otherwise match existing.
- Installation & Keying: Keying by SLCC Key Office/Locksmiths.
- Mullions: Use removable mullions
- Restrooms: Minimum of 3’-0” doors and designed to be held open for equipment and cart access Provide kick plates.
- Store Front Doors, 4” minimum in order to avoid using narrow rail panic devices
- Substitutions: All hardware substitutions must receive approval from FSD prior to final addenda.

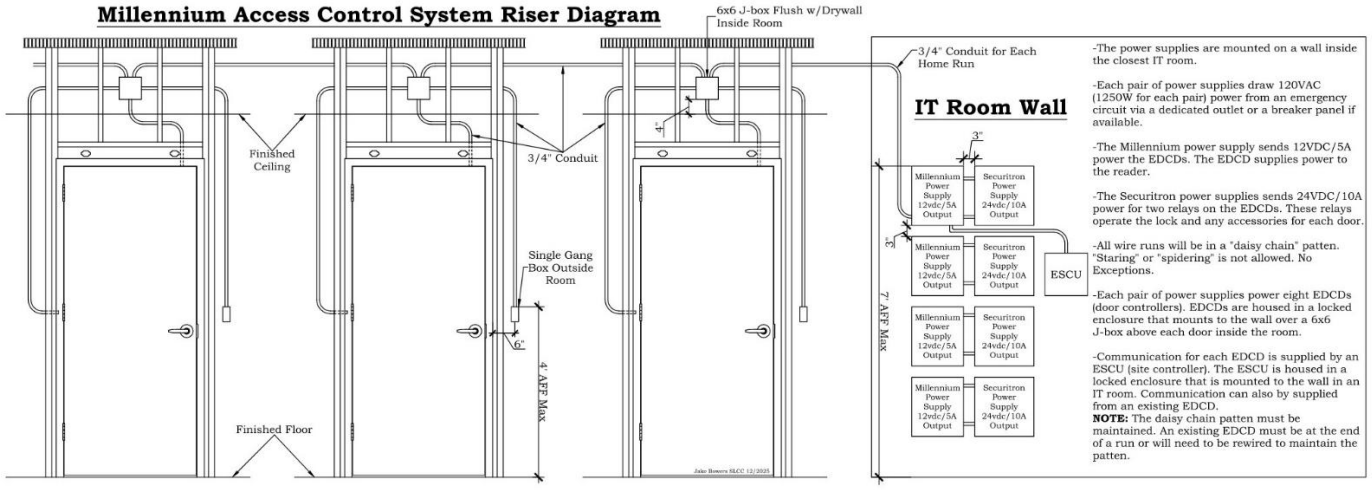
Door Hardware and Access Control Equipment List, Sole Source:

	Description	Brand	Part Number	Finish
1	Intercom/Video Doorbell System, 7in Touch Button Monitor With JO-1MD, JO-DA & PS-1820UL	Aiphone Corporation	JOS-1V	
2	7in Expansion Monitor	Aiphone Corporation	JO-1FD	
3	Piezo Siren Single Tone Flush Mount	Alarm Technology Worldwide	SGST-W	
4	Power Conversion Module 24VDC into Regulated 12VDC 3 Amp Output	Altronix	VR4T	
5	Key-In-Knob/Key-in-Lever 851 Cylinder Schlage SNS (Sub-Assembled, No Sidebar)	ASSA	E65611-626-SNS	626
6	Rim Cylinder 1-1/8in Horizontal Tailpiece SNS (Sub-Assembled, No Sidebar)	ASSA	E6551-H-626-SNS	626
7	Mortice Cylinder 1-1/4in #6 Cam SNS (Sub-Assembled, No Sidebar)	ASSA	E6552-6-626-SNS	626
8	Rim Cylinder V/H Tailpiece/Screws Kit	ASSA	867450	
9	Cam #1 Adams Rite	ASSA	867445	
10	Cam #5 Yale Standard	ASSA	872610	
11	Cam #6 Schlage L	ASSA	867453	
12	Wireless 900 MHz Digital Receiver	BEA Incorporated	10RD900	
13	Wireless 900 MHz Transmitter	BEA Incorporated	10TD900PB	
14	Transfer Hinge	Command Access	ETH2W4545-626	626
15	Passive Wiegand Splitter	Cypress	OPTW-100	
16	Exit Alarm, Door or Wall Mount, 100DB, 9VDC Battery Operated	Detex Corporation	EAX-500	
17	Exit Alarm, Door or Wall Mount, 100DB, 9VDC Battery Operated Weatherized	Detex Corporation	EAX-500W	
18	Door Wrap 2-3/4in BS, 1-3/4in Door, 5-1/8in W x 12in H, 2-1/8in Hole, Indent Latch Prep	Don-Jo Mfg Inc	12-S-2-CW	630
19	Blank Door Wrap 1-3/4in Door, 5in W x 12in H, Stainless Steel	Don-Jo Mfg Inc	90-S-CW	630
20	"IN USE" Light	Dortronics	7201XL1R-HXE6	630
21	Privacy Button	Dortronics	WR5276-HD29XLRGXE6	630
22	SPDT Relay 12/24VDC Big Terminal	Elk Products Inc	912B	
23	DPDT Relay 12/24VDC	Elk Products Inc	924	
24	Timer Delay 12/24VDC 1 Second - 60 Minute	Elk Products Inc	960	
25	3/4in N/O DPS	George Risk Industries	180-12WG-W	
26	3/4in DPDT White DPS	George Risk Industries	195-12WG-W	
27	Single Gang, Signo Reader	HID	40NKS-00-000000	
28	Narrow Stile, Signo Reader	HID	20NKS-00-000000	

29	Single Gang, Signo Keypad Reader	HID	40KNKS-00-000000	
30	Narrow Stile, Signo Keypad Reader	HID	20KNKS-00-000000	
31	Mortise Cylinder 1in Dummy	Ilco Unican Corp.	M100D-26D	626
32	Rim Cylinder 1-1/8in Dummy	Ilco Unican Corp.	RD118-26D	626
33	Nut for Cash Box Cylinder	Ilco Unican Corp.	869-00-10	
34	Elbow Catch	Ives	SP2A92	626
35	Storeroom Function Tailpiece for 175/195	Marks USA	F1903-C	
36	Classroom Function Tailpiece for 175/195	Marks USA	F1903S-C	
37	36in Rim Exit Device	Marks USA	M9900-32D	630
38	48in Rim Exit Device	Marks USA	M9900-32D-48	630
39	Fire Rated 36in Rim Exit Device	Marks USA	M9900F-32D	630
40	Fire Rated 48in Rim Exit Device	Marks USA	M9900F-32D-48	630
41	Exit Trim - Key In Lever x Rose Storeroom Function	Marks USA	M195F/26D-G3	626
42	Exit Trim - Key In Lever x Rose Classroom Function	Marks USA	M195S/26D-G3	626
43	Exit Nightlatch Pull Handle and Plate Trim	Marks USA	M99F/32D-G3	626
44	Electrically Unlocked 24VDC Lockset	Marks USA	195FEU/26D-G3	626
45	Storeroom Function Lever Lockset	Marks USA	195F/26D-G3	626
46	Classroom Function Lever Lockset	Marks USA	195S/26D-G3	626
47	Corridor Function Lever Lockset	Marks USA	195T/26D-G3	626
48	Passage Function Lever Lockset	Marks USA	195N/26D	626
49	Institution Function Lever Lockset	Marks USA	195DW/26D-G3	626
50	Millennium Power Supply	Millennium	PS1-100212-001	
51	Enhanced SCU	Millennium	149-101992	
52	Enhanced DCD	Millennium	149-101966	
53	Surface Box Kit w/Lock	Millennium	041-100992	
54	Ojmar Combi Pro Locks (2 master keys and stickers)	Ojmar	COMBI PRO-SILVER	
55	1-1/8in Cabinet Door Lock, Less Key-in Knob Cylinder	Olympus Lock	700LCA	626
56	1-3/8in Cabinet Door Lock, Less Key-in Knob Cylinder	Olympus Lock	700LCM	626
57	1-1/8in Cabinet Drawer Lock, Less Key-in Knob Cylinder	Olympus Lock	800LCA	626
58	1-3/8in Cabinet Drawer Lock, Less Key-in Knob Cylinder	Olympus Lock	800LCM	626
59	1-1/8in Cabinet Latch Lock, Less Key-in-Knob Cylinder	Olympus Lock	L78R-LCA	626
60	1-3/8in Cabinet Latch Lock, Less Key-in-Knob Cylinder	Olympus Lock	L78R-LCM	626
61	Power Transfer	Precision Hardware	EPT-5	629
62	16-4C Stranded, Unshielded, Plenum Jacket, White 1000'	Remee	AL-1604C-2-2N-01	
63	Manual Flush Bolt with 12in Extension Rod, Face Plate Size 1in x 6-3/4in	Rockwood Manufacturing Co	555US26D	626
64	Offset Pull 10in CTC	Rockwood Manufacturing Co	BF157US28	628

65	Push Plate 3.5in x 15in, Four Beveled Edges, 050in Thick, 6 x 5/8in Sheet Metal Screws	Rockwood Manufacturing Co	70BUS32D	630
66	Push Plate 4in x 16in, Four Beveled Edges, 050in Thick, 6 x 5/8in Sheet Metal Screws	Rockwood Manufacturing Co	70CUS32D	630
67	DPDT Momentary Key Switch	Rutherford Controls	960-DMO-28	628
68	Retraction Kit	SDC	LR100MDK	
69	Latching Relay Module	SDC	UR-1	
70	REX Button, Adjustable 1-60 Seconds Timer	SDC	423U	630
71	Electric Deadbolt Cabinet Lock 12/24VDC, Fail-Secure or Fail-Safe	Seco-Larm	SD-997C-GCQ	626
72	Single-Voltage Power Supply with Enclosure, 24VDC, 10 Amp	Securitron	AQS2410	
73	Motion Sensor, 12/24VDC	Securitron	XMS	
74	Maglock w/Door Position and Tamper Switches	Securitron	MM15DT	626
75	Z-Bracket	Securitron	Z-MM15CL	626
76	22/2 Stranded Bare Copper, Overall Shielded OAS, Plenum Jacket, White 1000ft Box	Southwire Company	22/2-STR-OS-PLEN-1000-WHITE	
77	18/2 Stranded Bare Copper, Unshielded, Plenum Jacket, White 1000ft	Southwire Company	18/2-STR-PLEN-1000-WHITE	
78	18/4 Stranded Bare Copper, Unshielded, Plenum Jacket, White 1000ft	Southwire Company	18/4-STR-PLEN-1000-WHITE	
79	22/6 Stranded Bare Copper, Overall Shield Composite Plenum Jacket, White 1000ft	Southwire Company	22/6-STR-OS-PLEN-1000-WHITE	
80	12 Volt 8.0AH Backup Battery	Universal Power Gr.	UB1280	
81	Steel Mullion	Von Duprin	4954	689
82	Keyed Removable Retrofit Kit for 4954 Steel Mullion	Von Duprin	KR54	689
83	Mullion Stabilizers	Von Duprin	154	689
84	Cat6-550 MHz, 4 Twisted Pairs, 23 AWG, Unshielded, Plenum Jacket, Blue 1000ft	Wavenet	CAT6-550-PLEN-1000-BLUE	

Wiring Diagrams for Access Controls: Contact Project Manager for digital copy.



08 81 13 DECORATIVE GLASS & COVERINGS

- Window Clings and Frosted Glass Bands Window clings and frosted glass bands, which are semi-transparent should start no lower than 24 inches and no higher than 64 inches. Graphic or branded cling must be approved by Planning & Design Department in consultation with Institutional Marketing.
- Office doors with windows, doors with sidelights, and entrances to suites shall remain uncovered to comply with campus security policies. See FSD Interior & Exterior Window and Wall Cling Procedure for requirements and approvals. Curtains, blinds, posters, paper information, or other obstructions are prohibited.

DIVISION 09 - FINISHES

09 00 00 GENERAL REQUIREMENTS

Durability and maintenance of interior finishes is a primary concern of FSD:

- All finish products shall be submitted to SLCC Interiors Group for approval
- All user groups presentations must be pre-approved by SLCC Interiors Group
- Painted or coated metal panels are prohibited in public areas due to high maintenance and are subject to abuse.

09 30 00 TILING

General:

- Elevators: Do not tile elevators.

Restrooms:

- General Notes: Tile detailing shall promote cleanability and durability to support SLCC janitorial services.
- Floor: Floors with no grout is preferred in restrooms. Flat surfaces are preferred. No small tiles, the bigger the tile the easier it is to clean due to reduced grout. Use shallow grout on any tile surfaces. Format shall be 12” x 12” or larger: No ceramic tile in restrooms. Easily accessible floor drains to be installed in every restroom.
- Base: Porcelain Cove Base 6” x 12” #S-36C96T Daltile Unpolished
- Walls: Ceramic Tile 6” x 6” - Daltile, Semi-Gloss. Tile walls in a manner that cleaning can be performed by spraying the walls down. Avoid curved walls and tiling in restrooms as they cannot be cleaned by custodial machine.
- Grout: Care should be taken when selecting grout color, white should not be used on restroom floors.
- Counters: Select a material that will not absorb water, soap, and other liquid materials as well as reduce scratching. See Division 06 WOOD, PLASTICS, AND COMPOSITES for countertop and backsplash requirements.
- Flooring Transitions shall be Marble, single piece, beveled to meet ANSI/IBC 117.1 accessibility standards

09 50 00 CEILINGS

SLCC requires uniformity in acoustical ceiling panels. Acoustical panels shall be limited to one of the following panels or an equivalent fire rated panel. Standard panel is 15/16. Do not use cast tiles. Specialty tiles or ceiling produce shall be approved by SLCC Interiors Group.

BRAND	NUMBER	SIZE	NRC	CAC	LR
Armstrong Cortega Tegular	704	2 x 2	0.55	0.33	0.81
Armstrong Cortega Tegular	703	2 x 4	0.55	0.3	0.81
Armstrong Cortega Flat	770	2 x 2	0.55	0.33	0.81
Armstrong Cortega Flat	769	2 x 4	0.55	0.35	0.81
Armstrong Ultima	1910 (HRC)	2 X 2	0.75	.35	0.88
Armstrong Ultima	1913 (HRC)	2 X 2	0.75	.35	0.88
USG Frost	418	2 x 2	0.75	0.38	0.83
USG Radar Tegular Second Look	2742	2 x 4	0.55	0.35	0.84
USG Mars Tegular	87200	2 x 2	0.81	0.35	0.89

09 60 00 FLOORING

SLCC Planning & Design shall approve the design specifications for all flooring. Flooring shall comply with each campus design standards.

- Flooring shall be selected for durability, first cost, life cycle cost and, east of maintenance,
- Health science and laboratory projects shall use polished concrete, Marmoleum, or Armstrong Meditech
- Health science and laboratory projects shall use integral coved base or equivalent wall protection
- Transition strips is a primary design consideration to be minimized by equal thickness products: i.e. 5 mm LVT/Carpet

09 65 00 RESILIENT FLOORING

- Resilient Base Standard: 4-inch cove base with toe. Approved manufacturers: Johnsonite, Roppe, and Flexco.
- Linoleum: Provide sheet goods in places like childcare, health care and cafeteria areas.
    - Attic stock of linoleum should not be included as the product becomes too brittle when stored.
- Luxury Vinyl Tiling (LVT): Use 5 mm product with minimum 20 mil wear layer.
- Vinyl Composition Tile (VCT): Use requires SLCC Interiors Group approval

09 68 00 CARPETING

- Carpet products must be on state contract.
- SLCC standard is carpet tiles.
- Broadloom carpet requires SLCC Interiors Group approval.
- Use Type 6 Nylon or Type 66 Nylon. Do not use any material other than nylon.
- All carpet, including accents, must be heathered, variegated, or patterned in order to not show dirt.
    - No solid product. Avoid light colors.
- Walk-off carpet tile must be used at exterior entrances.

09 70 00 WALL FINISHES

- SLCC prefers to avoid use of wall coverings including fabric and wallpaper, except in circumstances in which it is found necessary due to the use of the space. When wall coverings are used, they must be durable and easily maintained. Approval required.
- Stone Facing: Architect to submit specifications on product to FSD for approval prior to use.
- Fabric-Wrapped Panels: Architect to submit specifications on product to FSD for approval prior to use. When used, fabric-wrapped panels must be easily cleaned, and attic stock must be provided.
- Avoid curved hallways which cause maintenance issues.
- Corridors shall have wainscot protection. See Section 4.09

09 91 00 PAINTING GENERAL REQUIREMENTS

General Requirements

- All interior paints and coatings shall meet the low emitting materials standards set forth by the State of Utah Administrative Rule R307-361. Architectural Coatings. See DFCM Design Requirements, Current Edition.
- Preferred Provider:
    - National Coatings Supplies (NSC), 79 West 4500 South, Murray, Utah, (801) 487-7535
- SLCC has multiple campuses and buildings. In an effort to reduce the inventory of paints products for maintenance, we have standardized colors for each Campus. Contact SLCC Interiors for the current building standards colors.

Paint Manufactures By Campus

- PPG Wall (NCS) Valspar Door Frames: South City Campus, West Point, Jordan Campus, Miller Campus, Redwood Campus
- Sherwin Williams: Business Building Technical Arts Building, Jordan Student Center
- Benjamin Moore: Workforce Training & Education Center, Herriman Campus

Standard Requirements and Details

- SLCC uses Sherwin Williams (SW) colors for selection. Contractors must ensure that color and sheen is accurate, so as to be able to be matched in the future for maintenance purposes.
- The legacy building standard color is “Revue”: Color Guild System AX6.L16.SS+196 White Base, based on 48yh oz.
- Painting of doors must be pre-approved.
- Paint hollow metal doors to match existing colors. Use Direct to Metal (DTM) semi-gloss.
- New door frames to be spray painted and not rolled, whenever possible.
- Existing frames may be brushed but not rolled.
- The painting of concrete and brick masonry, both walls and floors, is not permitted.
- The painting of concrete, walls and floors, is not permitted.
- The painting of brick, walls and floors, is not permitted.

09 93 00 STAINING AND TRANSPARENT FINISHING

- Oak doors to receive clear satin lacquer finish from the manufacturer to match existing doors at SLCC.

DIVISION 10 - SPECIALTIES

10 11 00 VISUAL DISPLAY UNITS

MARKERBOARD & TACKBOARD DESIGN CONSIDERATIONS
Coordinate projection screens and markerboards to ensure markerboards are accessible when screens are in use. Standard lengths of up to 8 feet max, coordinated with projectors.
“Flex Classroom” design element includes multiple wall mounted/ portable boards or writing surfaces for students, as well as dedicated board(s) for short-throw projectors. Contact SLCC for current design requirements.

- Chalkboards: Are prohibited.
- Marker board Assemblies for Short-throw Projectors:
  - Manufacturer: Epson 100" 16:10 White Board/Dry Erase, accessory for BrightLink Projectors.
- Marker board Accessories:
  - Map Rail (when required): Display rail shall be continuous and integral with map rail and fabricated from cork approximately 1 to 2 inches (25 to 50 mm) wide. End stops shall be located at each end of the map rail. Two map hooks for every 48 inches (1219 mm) of map rail or fraction thereof.
- Glass boards: Glass boards may be used in lieu of marker boards at the request of the College.
  - Clarus Glassboards, Claridge, or approved equals.
  - Platinum Glassboards from Midwest featuring magnetic porcelain.
- Tackable Surface:
  - Forbo Flooring, Inc., Bulletin Board resilient tackable surface sheet material, or a comparable approved equal linoleum sheet product by Armstrong World Industries, Johnsonite, or approved equal. Color shall extend throughout the thickness of the material.

10 13 00 DIRECTORIES

All building directories shall coordinate with the Wayfinding Design Standards. Each new building or building with significant remodels shall implement wayfinding and directories based on the Wayfinding Design Standard and or update existing wayfinding signage and directories.

10 14 00 SIGNAGE

A team effort is required to create clear, uniform signage that complies with the Americans with Disabilities Act (ADA) requirements for Salt Lake Community College campuses. In accordance with ADA, signs are regulated on text length, letter size, raised lettering, mounting, international symbols, contrast, etc. The context of the sign must also include Braille.

- The signage standards require that products and installations match existing setups.
- Signage shall be included in all projects.
- The SLCC Sign Shop reserves the right to complete signage projects at its discretion.
- SLCC signs are required to comply with current ANSI and ADA standards. Address noncompliant standards with SLCC PM prior to moving forward.
- Current SLCC Signage Specifications (Standards) are available on request from the SLCC PM
- Current: “An approved frame provider: Delvie’s Plastics, Inc., 133 West Haven Ave., Salt Lake City, UT 84114 (800) 533-5843”
- Update to: “
- Current: “All existing frames and Grip-a-strips are to be reused, when possible”
- Update to: “All existing frames and Grip-a-strips are to be reused when possible or given to the Facilities Services Sign Shop.”
- Current: “Desk Name Plates, when requested, can include the entire name, no matter the length.”
- Update to: “Desk name plates, when requested, include first and last name only unless a middle initial is also requested.”

Signage Expectations and Requirements

- Provide mockup of signs to SLCC Sign Shop for approval prior to proceeding.
- Desk Name Plates, when requested, is limited to first name, middle initial if requested and last name.
- Only Vice Presidents, Division Chairs, Deans, Associate Deans, Directors, and Associate Vice Presidents will receive office signs with their names.
- Any signage mounted to brick, must be mounted to the mortar only and not to the brick itself.
- New buildings must have ADA signage installed prior to being occupied.
- All existing signage frames and Grip-a-Strips are to be reused or returned to Facilities Service Sign Shop.
- Signage contactors must receive approval prior to bidding.
- SLCC approved Romark Plastics Distributer and signage frame provider:
    - Delvie’s Plastics, Inc., 133 West Haven Ave., Salt Lake City, UT 84115 (800) 533-5843

10 21 00 COMPARTMENTS AND CUBICLES

- Carefully consider design concepts for toilet compartments that facilitate easy maintenance, safety, complete accessibility to the handicapped, and extreme durability for heavy institutional use.
- Toilet compartments standard is floor and ceiling mounted phenolic with stainless steel fasteners.
- Use gap free interlocking edges and continuous stainless-steel hinges.
- Rabbeted strike edge for “no-peek”.
- Continuous hinge emergency stall door removal feature.
- Non-porous material.
- Multi-colored surfaces preferred. Avoid compartments that are all white and only one color.
- Minimize metal to avoid rust developing from the cleaning process.
- Material to be scratch resistant and can be repainted if and when needed.
- Incorporate a coathook and a low built-in shelf to place books, handbags, etc.
- Rubber bumper/ latch combo on stall doors.

10 26 13 CORNER GUARDS

- Corner guards to be considered in areas subject to heavy traffic and potential impact (e.g. areas that will use carts).
- Corner guards, typically made of stainless steel, come in varying lengths depending on the project requirements.
- Aesthetically, corner guards should appear as part of the original design, and not as a design oversite.

10 28 13 TOILET ACCESSORIES

- Feminine Hygiene disposal cans should be attached to the wall and have lids that open on the top.

- ADA grab pull bars
- Baby changing stations in male, female, family and all gender restrooms
- Soap & Towel Dispensers shall be supplied and installed by SLCC

10 70 00 EXTERIOR SPECIALTIES

Bike Racks:

- U Rack/ 1 Loop 3 Bikes Standard, Belson Outdoors Model #U238-IG-S or comparable. See specification sheet.
- Stainless steel, powder coated or, hot-tipped galvanized.

10 75 00 FLAGPOLES

Flagpoles shall be installed in a manner that provides for proper display for the main building on each campus.

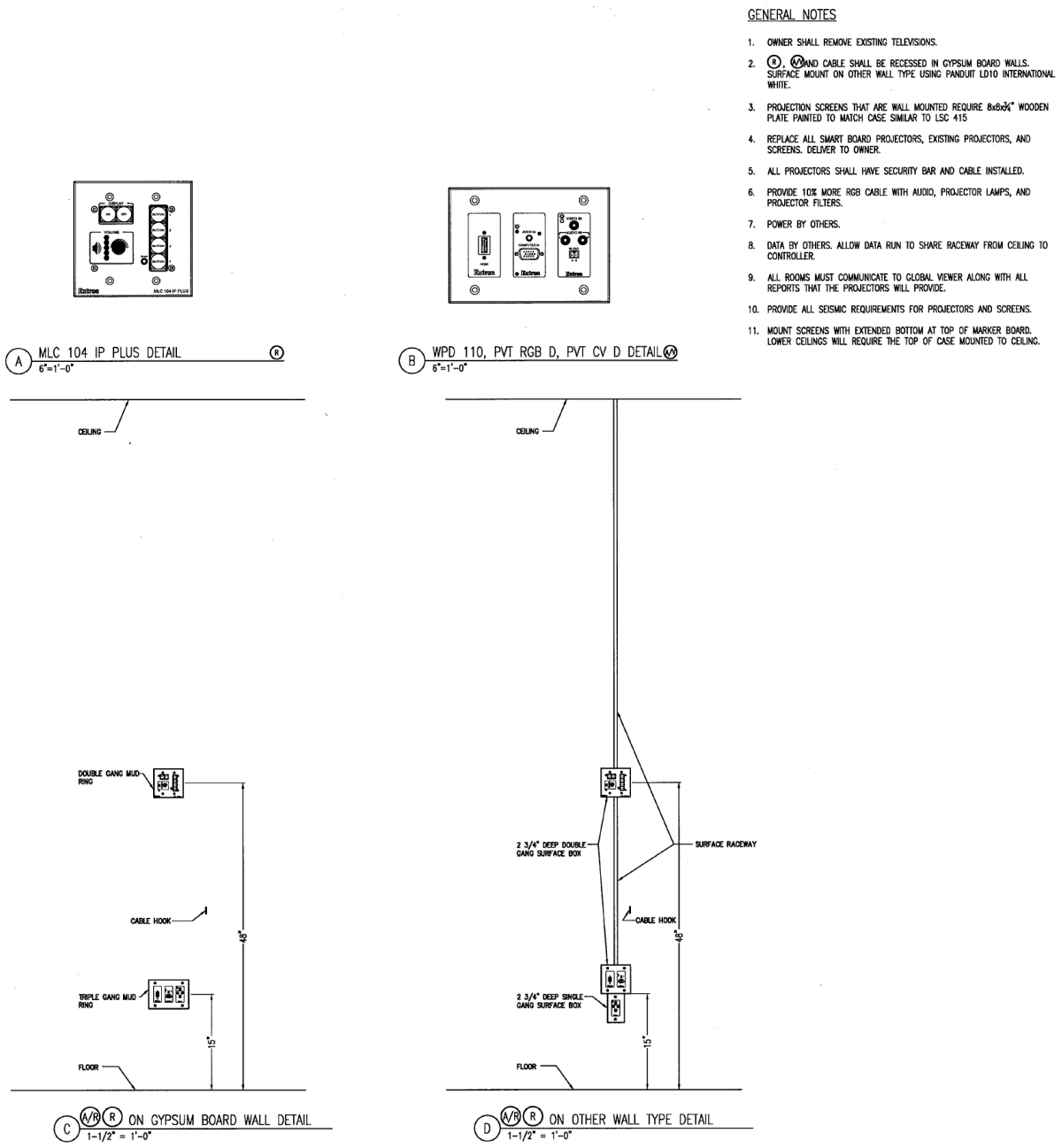
- Three flagpoles: State, Country, College

DIVISION 11 - EQUIPMENT

11 52 00 AUDIO-VISUAL EQUIPMENT

- Coordinate all Audio/Visual design with SLCC A/V Services through the SLCC PM.
- SLCC may choose to delegate A/V Desing to the design team or a designated consultant.
- SLCC projects may include projectors and short throw projectors with Bluetooth and Wi-Fi capabilities.
- Projection Screens: DA-LITE Model C Spring Roller Screen. Provide conceal structural backing.

Standard A/V Control Diagrams:



11 82 00 FACILITY SOLID WASTE HANDLING EQUIPMENT

Waste and recycling collection is an integral design selection for new projects and stall be address in all design phases. Existing standards are not the default solution applicable to all projects. The following are for use in exterior applications and non-public spaces:

- Rubbermaid 3540 Slim Jim Waste Container
- Rubbermaid 1792339 2-Steam Glutton Recycling Station
- Rubbermaid 1792372 Glutton Recycling Station

DIVISION 12 - FURNISHINGS

12 24 00 WINDOW SHADES

Roller Shades:
When needed opacity level of rollers shades should be 1-3% when high sun exposure is anticipated. This is typically on south and east facing windows. Each project should be carefully analyzed to anticipate the needs, particularly in classrooms, so as to not interfere with A/V projection. Other roller shades should have a 5% opacity level.

Manufacturers:
    - Draper Inc.; Hunter Douglas Architectural Window Coverings, RB Basic and RB 500+
    - MechoShade Systems, Inc., MechoShade 5, ax and y (Urbanshade is prohibited)
    - Or approved equal.
- Fabric:
    - Hunter Douglas Architectural Window Coverings: Glacier Screen, Black/Pearl
    - Or approved equal
- Facia: Clear Anodized Aluminum
- Shade Size Limits: Shade shall be limited to 48” in width unless approved by SLCC Interiors Group
- Warranty: 10-15 Year Minimum
- Roller Shades come in standard colors, specifically MechoShade 5, 5x, and y, although Urbanshade is prohibited. Installation must be certified by the installer if required by warranty.

Manually Operated shades with Single Rollers:
Chain-and-Clutch Operating Mechanisms: With continuous-loop bead chain and clutch that stops shade movement when bead chain is released; permanently adjusted and lubricated.

- Bead Chains:
    - Loop Length: Full length of roller shade.
    - Limit Stops: Provide upper and lower ball stops.
    - Chain-Retainer Type: Chain tensioner, jamb mounted.
- Spring Lift-Assist Mechanisms: Manufacturer’s standard for balancing roller-shade weight and lifting heavy roller shades shall be provided for shadebands that weigh more than 10 lb. (4.5 kg) or for shades as recommended by manufacturer, whichever criteria is more stringent.

Volts/Motorized:
Motorized roller window shades must receive approval by SLCC Interiors Group. For all motorized roller window shades use 120V systems. Trackless systems preferred. Automatic shade controls shall be wall mounted, mobile remote controls are prohibited.

12 36 00 COUNTERTOPS

- Select a material that will not absorb water, soap, and other liquid materials.
- Select a material that is scratch resistant.
- Countertop for the South City classroom radiator cabinets, Formica White Tigress #4783-60

12 46 19 CLOCKS

- Clock Products: Sync 72 MHz Analog Clock, 12.5” Black w/ Dual D-Cell Alkaline Battery Pack by Primex (Primexinc.com)
- Synchronize System: Sync OneVue Transmitter Wattage by Campus by Primex (Primexinc.com)

12 51 00 OFFICE FURNITURE

- It is the policy of FSD to purchase only furnishings that have been tested for strength and durability and have been approved by the FSD to meet the needs of students, faculty, and staff.
- Office furniture must be on state contract; exceptions must receive prior approval by SLCC.
- Office Furniture Standards: Contact SLCC Interiors Group for current Furniture, Fixtures, and Equipment Standards
- Standard Details: Specify products from SLCC Office Standards and Approved Suppliers, specify height adjustable desks, arrange offices so occupants face the door, provide modesty panels.

12 52 00 CHAIRS

- Task chairs are to be purchased with regard to adequate back and arm support, adjustability and with five casters to avoid tipping and provide proper positioning to the desk.
- Office Chairs - Herman Miller Aeron Chair, Steelcase Amia, Leap.
- No hard foot furniture on hard surface flooring to avoid damage to the finish. Select castors according to floor type.
- Furniture to match up with chair rail to avoid wall damage.

12 56 00 INSTITUTIONAL FURNITURE

- Classroom Tables - Steelcase Verb, standard finish Gypsum Micro with Sterling leg; KI Synthesis tables; Enlite tables. Each classroom must include one ADA table and chair.
- Classroom chairs - Herman Miller Caper; Steelcase Cachet; Node; KI Strive; Perry; Sit on It (labs). If it is anticipated that students will be in class for more than one hour, height adjustable chairs should be considered.
- Lounge Furniture - Fabrics must be durable with 100,000 double rubs, and cleanable. Use patterns that hide wear and Brisa for solids or write off vinyl.
- “Flex Classroom” - furniture must be mobile, including tables, chairs and lectern.

12 59 00 SYSTEMS FURNITURE

- Preference is to not use Panel-Hung systems furniture. Exceptions must have prior Facilities Services Division approval.

12 48 00 RUGS AND MATS

- Entry-level carpet tile must be used at exterior entrances.

12 93 23 TRASH AND LITTER RECEPTACLES

- Locations for trash and recycling receptacles should be included in the programming of new or remodeled spaces.

DIVISION 13 - SPECIAL CONSTRUCTION

Reserved.

DIVISION 14 - CONVEYING EQUIPMENT

Reserved.

DIVISION 21 - FIRE SUPPRESSION

21 00 00 GENERAL REQUIREMENTS

Comply with the following Authorities Having Jurisdiction (AHJ) Regulations, Submittal Requirements, & Approvals:

- Utah Department of Public Safety, State Fire Marshal
- DFCM Design Requirements, Current Edition
- SLCC Fire Marshall
- Designated Code Official: West Coast Code Consultants, Inc. (WC3) Reference: www.wc-3.com or designated alternate.

Products & Installation Requirements:

- Fire Alarm Control Panels, Sole Source: Honeywell, Gamewell FCI Series E3 or S3
- Preferred Installer: Nelson Fire Systems Reference: www.nelsonfire.com

Design Standards:

- All Buildings: Fully Sprinklered
- Fire Extinguisher Cabinets: Locate according to code & provide without keys
- Toilet Rooms & Catering Kitchens: Heat detectors, rather than smoke detectors
- Kitchens: Set to trigger at temperatures between 135 and 155 degrees Fahrenheit.

Hot Work Permits

- Hot Work permits must be approved by the SLCC PM and SLCC Fire Marshal
- Required Training: During pre-construction meeting.
- Resource Reference: https://dfcm.utah.gov/construction-management/building-official/hot-works/

DIVISION 22 - PLUMBING

22 40 00 PLUMBING FIXTURES

General Requirements

- Prior to Design Development, submit all fixture and faucet cut sheets for SLCC Approval
- Flush Valves: Battery or Manual, Hardwired prohibited.
- Grease Traps: Not permitted without SLCC Approval.
- Ground Keys: Located outside the building.
- Sumps: Gravity drained, not pumped.
- Water Piping: Install in heated spaces only.
- Clean-outs: Install above the flood rim.
- Double Fixture Fittings: Prohibited.
- Isolate branches and pipe chases with shut-off valves located in ceilings. Mark location with SLCC PM approved label.
- Toilet Rooms Chase: Minimum 2-foot walk-in plumbing chase with door access
- Fasteners: All fasteners to be stainless steel.
- Provide domestic water freeze less hose bibs on all new building roofs. Coordinate location(s) with FSD

Piping:

- Domestic (culinary) Water Piping: Copper Pipe using Pepe soldered connections.
- Copper Pipe: Type L or Higher
- PVC Pipe: Solid core underground, above ground cellular.
- PEX Piping: Prohibited.

Sinks:

- Porcelain sinks, no plastic sinks/countertop. “Hardpipe” water supply lines under countertops in restrooms.

Faucets:

- Use auto sensors that can be turned off during cleaning.
- Battery-operated faucets and valves do not require hardwire plumbing fixtures.
- Preferred faucet brands: Chicago, Moen, Toto, American Standard, and AMTC.

Toilets:

- Provide an accessible 2’-0” plumbing chase for all multi-stall toilet rooms.
- Install wall hanging toilets for cleaning purposes.
- Install auto-flush sensors, which can be manually flushed when needed.
- Preferred Flush Valves: Zurn, Sloan
- Flush valves and sensors should be installed on the fixture side only, not in the wall or chase.

Urinals:

- Install larger urinals. Smaller urinals cause splash and spray issues.
- Install auto-flush sensors which can be flushed manually when needed.
- Provide clean-outs at all urinals.
- Flush valves and sensors should be installed on the fixture side only, not in the wall or chase.

PVC Jacket Color Standards:

- Speedline Corporation 25/50 Smoke Safe PVC (www.speedlinepvc.com)
- Plumbing:
    - Steam: Light Grey 41619-R1
    - Condensate: Dark Grey 14609-E1
    - Domestic Cold Water: Green 41138-R1
    - Domestic Hot Water Supply: Yellow 41148-R2
    - Domestic Hot Water Return: Tan 42438-R1
    - Chilled HVAC Water Return: Light Blue 41073-R1
    - Chilled HVAC Water Supply: Dark Blue 14612-E1
    - Recycled Water: Purple 41932-R1
    - Hot HVAC Water Supply: Red 41086-R1
    - Hot HVAC Water Return: Orange 41137-R1
    - Rain Water: Brown 41079-R2
- Utilities:
    - Compressed Air: Pea Green 42307-R1
    - Controls Conduit: Dark Blue 14612-E1
    - Fire: Red 41086-R1
    - Natural Gas: Yellow 41148-R2
    - Sewer: Brown 41079-R2

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

23 00 00 GENERAL REQUIREMENTS

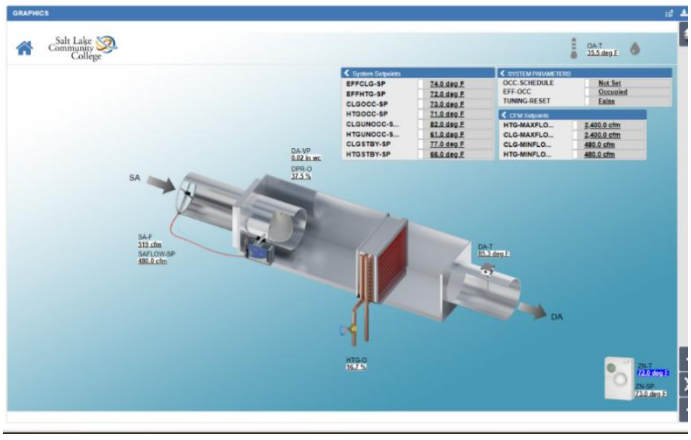
Comply with the DFCM Design Standards, Current Edition.

General Requirements

- HVAC Controls: Johnson Controls.
- HVAC Equipment on Emergency Power: Boilers; Fuel Oil, HW, CH, & Sewage Ejection Pumps, UH, & AC Split Systems
- AHU: Fan walls shall be provided with multiple VDFs for efficient airflow management. Two fans per VFD.
- AHU: MERV 13 filtration, enhancing indoor air quality and occupant comfort.
- AHU: Isolation valves on every unit.
- AHU & MAU: Indirect fired heaters required. Direct fired heaters with written SLCC approval only.
- Communication & Computer (OIT) Rooms: Provide AC split systems on Emergency Power, with independent ventilation and controls. System shall be designed to maintain temperatures below 65 degrees.
- Piping: HWS and CWS HVAC piping shall be welded or threaded connections.
- Circulate the water in the HVAC Piping to prevent freezing.
- Refrigerant: Refrigerants with scheduled expiration dates are prohibited. Select refrigerants for long-term uses.
- Expansion Joints: Maintenance-free systems, reducing the need for regular inspection and upkeep.
- Pumps: Engineer redundant, energy-efficient designs to ensure reliable operation and minimize energy consumption.
- Free Cooling: Incorporate free cooling design maximizes the efficiency of the cooling tower, utilizing natural cooling methods to reduce energy consumption.
- Cooling Towers: Materials: Stainless Steel Grade 316, Hardware: Stainless Steel, Joints: Welds: Continuous Water Tight Welds, Motors: Direct Drive, Joints, and Seams: Sealed Watertight
- SLCC Energy Manager approval required for new or replacement systems or major equipment replacement.
- Thermostat Placement Requirements: Install thermostats on interior walls 48–54 inches above finished floor, away from heat sources a false reading. Heat sources include but at not limited to windows, sunlight, heat generating equipment, diffusers, etc. Thermostat reading must represent the zone it is controlling.

Variable Air Volume (VAV Box) Standards

- VAV Systems: Standard design limited to two rooms for each VAV Box for optimal energy efficiency.
- VAV Identification: Identified access on the ceiling below the box, by approved standard markings.
- VAV Access: Indicated on the design documents with area, details, and specifications.
- VAV: Provide isolation valves on every unit.
- VAV Set Point: 72 Degrees (Range: 68 – 74)



DIVISION 25 - INTEGRATED AUTOMATION

Reserved.

DIVISION 26 - ELECTRICAL

26 00 00 GENERAL REQUIREMENTS

Comply with the DFCM Design Standards, Current Edition.

SLCC General Electrical Design Requirements

- Consider Watt Smart/Energy Management programs to maximize investment. Contact SLCC Energy Manager.
- Provide Emergency Power for all new buildings.
- Coordinate all medium conduits design and installation with Wasatch Electric and SLCC Project Mangers.
- Electrical closets and communication closets shall be separated.
- Electrical closets shall be sized for current and anticipated equipment.
- Incorporate a J-box in all accessible ceilings to accommodate future power needs. Mark location with approved label.
- Electrical conduits attached (extended along) exterior walls of buildings are not acceptable, except building feeders.
- Surface mounted conduits, when approved, shall be consistent, either painted or unpainted.
- All home run circuits shall be in conduits. MC cable may be approved by SLCC PMs after home run circuits.
- Device covers, whether white or stainless steel, remain consistent throughout the building or room as per application.
- Exit signs shall be hardwire for effective functionality.
- Electrical Vehicle Charging Equipment shall be sole sourced, ChargePoint Model CT4000 Level 2 manufactured by ChargePoint, Inc. Inc. Reference: https://www.chargepoint.com/

SLCC Lighting Control Design Requirements

- Lighting controls system is limited to Wattstopper by LeGrand.
- Lighting controls must be able to be programmed “Off-Line” in order to manage emergent events.
- Automated lighting controls must include a bypass function to provide operation during failures.
- When using tracking lighting, consider maintenance accessibility for ease of upkeep.

SLCC Footcandle Light Guide Requirements:

FOOT CANDLE LIGHT Guide

FOOTCANDLE LIGHT GUIDE

Footcandles are the most common unit of measure used by lighting professionals to calculate light levels in businesses and outdoor spaces. A footcandle is defined as the illuminance on a one square foot surface from a uniform source of light. The Illuminating Engineering Society (IES) recommends the following footcandle levels to ensure adequate illumination and safety for occupants. Below is a guideline for common areas to assist in achieving appropriate light levels with the greatest energy-efficiency.

Building Area & Task	Average Maintained Footcandles (Horizontal) (FC)	Range of Maintained Footcandles (Horizontal) (FC)	Average Maintained Footcandles (Vertical) (FC)	Range of Maintained Footcandles (Vertical) (FC)	Comments
WAREHOUSING & STORAGE					
Bulky Items—Large Labels	10		5		
Small Items—Small Labels	30		15		
Cold Storage	20	10 - 30	10	5 - 15	
Open Warehouse	20	10 - 30			
Warehouse w/Aisles	20	10 - 30	10	5 - 15	
COMMERCIAL OFFICE					
Open Office	40	30 - 50			@30" Above Finished Floor (AFF)
Private Office	40	30 - 50			@30" AFF
Conference Room	30				Matte surface reflectance for the table 40% recommended
Restroom	18	7.5 - 30			
Lunch & Break Room	15	5 - 20			
EDUCATIONAL (SCHOOLS)					
Classroom	40	30 - 50			@30" AFF
Gymnasium					
Class I (Pro or Div. 1 College)	125		30		
Class II (Div. 2 or 3 College)	80		20		
Class III (High School)	50		150		
Class IV (Elementary)	30		100		
Auditorium	7.5	3 - 10	5	2.5 - 10	
Corridor	25	10 - 40			

This guide is a collaborative effort of Energy Trust of Oregon and the Lighting Design Lab, Seattle, Washington.

lighting design lab

EnergyTrust of Oregon

Rev.07/2013

Building Area & Task	Average Maintained Footcandles (Horizontal) (FC)	Range of Maintained Footcandles (Horizontal) (FC)	Average Maintained Footcandles (Vertical) (FC)	Range of Maintained Footcandles (Vertical) (FC)	Comments
INDUSTRIAL/MANUFACTURING					
Assembly					
Simple (Large Item)	30	15 - 60	30	15 - 60	
Difficult (fine)	100	50 - 200	100	50 - 200	
Component Manufacturing					
Large	30	15 - 60	30	15 - 60	
Medium	50	25 - 100	50	25 - 100	
EXTERIOR					
Parking (Covered)	5				1FC min, 10:1 Max to Min Uniformity
Parking (Open) (Medium Activity)					
Lighting Zone 3 (Urban)	1.5	.75 - 3	.8	.4 - 1.6	
Lighting Zone 2 (suburban)	1	0.5 - 2	.6	.3 - 1.2	
Gas Station Canopy	12.5	10 - 15			
Safety (Building Exterior)	1	0.5 - 2			If security is an issue—raise average level to 3
RETAIL					
General Retail (Ambient)		50			
Department Store	40	20 - 80	15	7.5 - 30	
Perimeter			75	35 - 150	
Accent Lighting (Displays)					3 - 10 times greater than ambient light levels
AUTOMOTIVE					
Showroom	50	25 - 100	10	5 - 20	
Service Area	50	25 - 100	30	15 - 30	
Sales Lot (Exterior)					
Lighting Zone 3 (Urban)	20	10 - 40	20	10 - 40	
Lighting Zone 2 (Suburban)	15	7.5 - 30	15	7.5 - 30	
GROCERY					
Circulation	20	10 - 40	7.5	3.5 - 15	
General Retail	50	25 - 100	20	10-40	
Perimeter			50	25-100	
BANKING					
ATM	20	10-40	15		Vertical at face of ATM

NOTES:
- This guide is based on information gathered from the IES 'The Lighting Handbook 10th Edition. It is highly recommended that all lighting professionals refer to the full IES guide when specifying lighting projects.
- At least half of users are in the 25 - 65 age range
- Horizontal—horizontal plane that average maintained foot-candles are measured
- Vertical—vertical plane the average maintained foot-candles are measured
- It is the responsibility of the *specifier* to determine and provide appropriate lighting levels for each space

Energy Trust of Oregon 421 SW Oak St., Suite 300, Portland, OR 97204 1.866.368.7878 503.546.6862 fax energytrust.org

Rev.07/2013

DIVISION 27 - COMMUNICATIONS

27 00 00 GENERAL REQUIREMENTS

- A Distributed Antenna System (DAS) shall be included in all new projects unless the AVP grants a written exception.
- Electrical closets and communication closets to be separated and sized for current and anticipated equipment.
- Communication design shall include raceways to manage cables in major corridors and shall terminate at communication closets.
- In data coordination efforts, ensure conduits are routed above ceilings and through raceways for efficient organization and management.

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

Reserved.

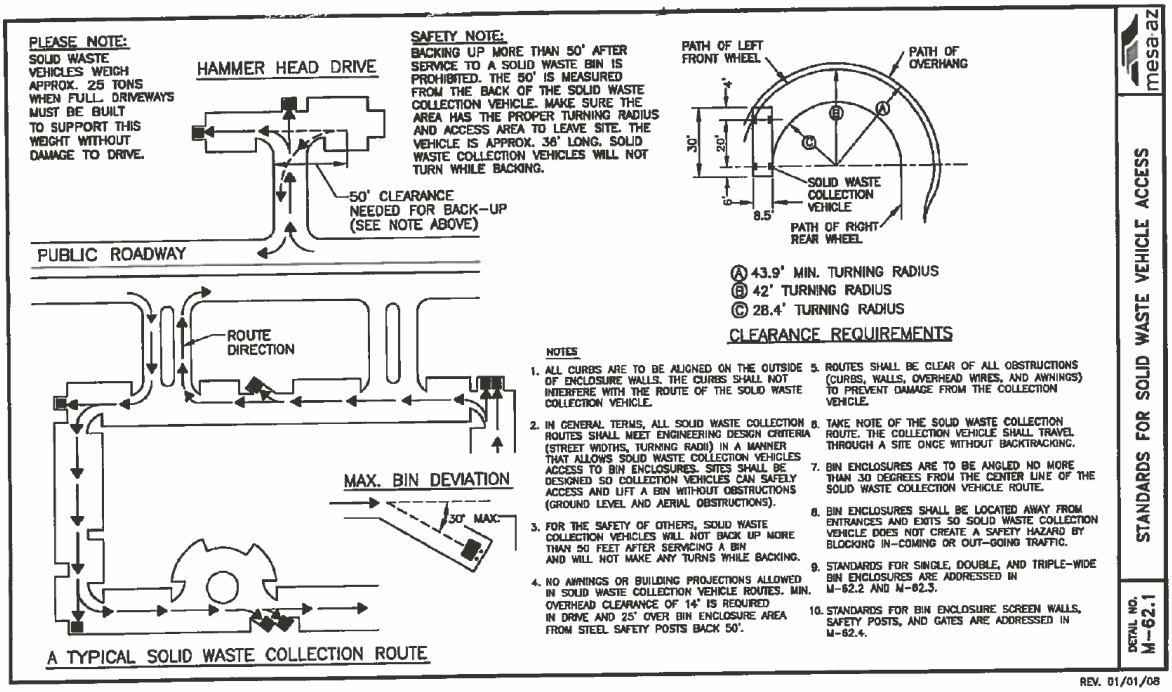
DIVISION 31 - EARTHWORK

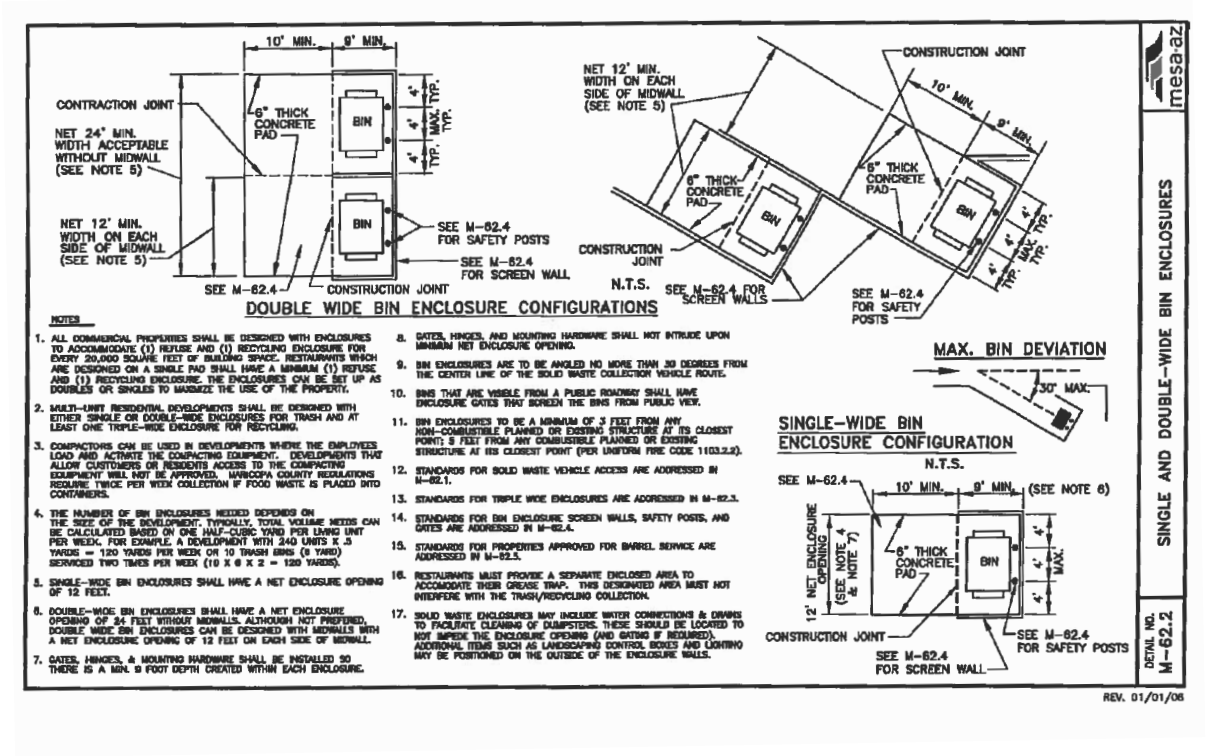
Reserved.

DIVISION 32 - EXTERIOR IMPROVEMENTS

32 00 00 WASTE MANAGEMENT ACCESS AND ENCLOSURES

Solid Waste Vehicle Access




10' MIN.
9' MIN.
CONTRACTION JOINT
6" THICK CONCRETE PAD
BIN
4' TYP. MAX. TYP.
NET 24' MIN. WIDTH ACCEPTABLE WITHOUT MIDWALL (SEE NOTE 5)
NET 12' MIN. WIDTH ON EACH SIDE OF MIDWALL (SEE NOTE 5)
SEE M-62.4 FOR SAFETY POSTS
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MAX. BIN DEVIATION
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NOTES
1. ALL COMMERCIAL PROPERTIES SHALL BE DESIGNED WITH ENCLOSURES TO ACCOMMODATE (1) REFUSE AND (1) RECYCLING ENCLOSURE FOR EVERY 20,000 SQUARE FEET OF BUILDING SPACE. RESTAURANTS WHICH ARE DESIGNED ON A SINGLE PAD SHALL HAVE A MINIMUM (1) REFUSE AND (1) RECYCLING ENCLOSURE. THE ENCLOSURES CAN BE SET UP AS DOUBLES OR SINGLES TO MAXIMIZE THE USE OF THE PROPERTY.
2. MULTI-UNIT RESIDENTIAL DEVELOPMENTS SHALL BE DESIGNED WITH EITHER SINGLE OR DOUBLE-WIDE ENCLOSURES FOR TRASH AND AT LEAST ONE TRIPLE-WIDE ENCLOSURE FOR RECYCLING.
3. COMPACTORS CAN BE USED IN DEVELOPMENTS WHERE THE EMPLOYEES LOAD AND ACTIVATE THE COMPACTING EQUIPMENT. DEVELOPMENTS THAT ALLOW CUSTOMERS OR RESIDENTS ACCESS TO THE COMPACTING EQUIPMENT WILL NOT BE APPROVED. MARICOPA COUNTY REGULATIONS REQUIRE TWICE PER WEEK COLLECTION IF FOOD WASTE IS PLACED INTO CONTAINERS.
4. THE NUMBER OF BIN ENCLOSURES NEEDED DEPENDS ON THE SIZE OF THE DEVELOPMENT. TYPICALLY, TOTAL VOLUME NEEDS CAN BE CALCULATED BASED ON ONE HALF-CUBIC YARD PER LIVING UNIT PER WEEK. FOR EXAMPLE, A DEVELOPMENT WITH 240 UNITS X .5 YARDS = 120 YARDS PER WEEK OR 10 TRASH BINS (8 YARD) SERVICED TWO TIMES PER WEEK (10 X 6 X 2 = 120 YARDS).
5. SINGLE-WIDE BIN ENCLOSURES SHALL HAVE A NET ENCLOSURE OPENING OF 12 FEET.
6. DOUBLE-WIDE BIN ENCLOSURES SHALL HAVE A NET ENCLOSURE OPENING OF 24 FEET WITHOUT MIDWALLS. ALTHOUGH NOT PREFERED, DOUBLE WIDE BIN ENCLOSURES CAN BE DESIGNED WITH MIDWALLS WITH A NET ENCLOSURE OPENING OF 12 FEET ON EACH SIDE OF MIDWALL.
7. GATES, HINGES, & MOUNTING HARDWARE SHALL BE INSTALLED SO THERE IS A MIN. 9 FOOT DEPTH CREATED WITHIN EACH ENCLOSURE.
8. GATES, HINGES, AND MOUNTING HARDWARE SHALL NOT INTRUDE UPON MINIMUM NET ENCLOSURE OPENING.
9. BIN ENCLOSURES ARE TO BE ANGLED NO MORE THAN 30 DEGREES FROM THE CENTER LINE OF THE SOLID WASTE COLLECTION VEHICLE ROUTE.
10. BINS THAT ARE VISIBLE FROM A PUBLIC ROADWAY SHALL HAVE ENCLOSURE GATES THAT SCREEN THE BINS FROM PUBLIC VIEW.
11. BIN ENCLOSURES TO BE A MINIMUM OF 3 FEET FROM ANY NON-COMBUSTIBLE PLANNED OR EXISTING STRUCTURE AT ITS CLOSEST POINT; 5 FEET FROM ANY COMBUSTIBLE PLANNED OR EXISTING STRUCTURE AT ITS CLOSEST POINT (PER UNIFORM FIRE CODE 1103.2.2).
12. STANDARDS FOR SOLID WASTE VEHICLE ACCESS ARE ADDRESSED IN M-82.1.
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14. STANDARDS FOR BIN ENCLOSURE SCREEN WALLS, SAFETY POSTS, AND GATES ARE ADDRESSED IN M-82.4.
15. STANDARDS FOR PROPERTIES APPROVED FOR BARREL SERVICE ARE ADDRESSED IN M-82.5.
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17. SOLID WASTE ENCLOSURES MAY INCLUDE WATER CONNECTIONS & DRAINS TO FACILITATE CLEANING OF DUMPSTERS. THESE SHOULD BE LOCATED TO NOT IMPEDE THE ENCLOSURE OPENING (AND GATING IF REQUIRED). ADDITIONAL ITEMS SUCH AS LANDSCAPING CONTROL BOXES AND LIGHTING MAY BE POSITIONED ON THE OUTSIDE OF THE ENCLOSURE WALLS.
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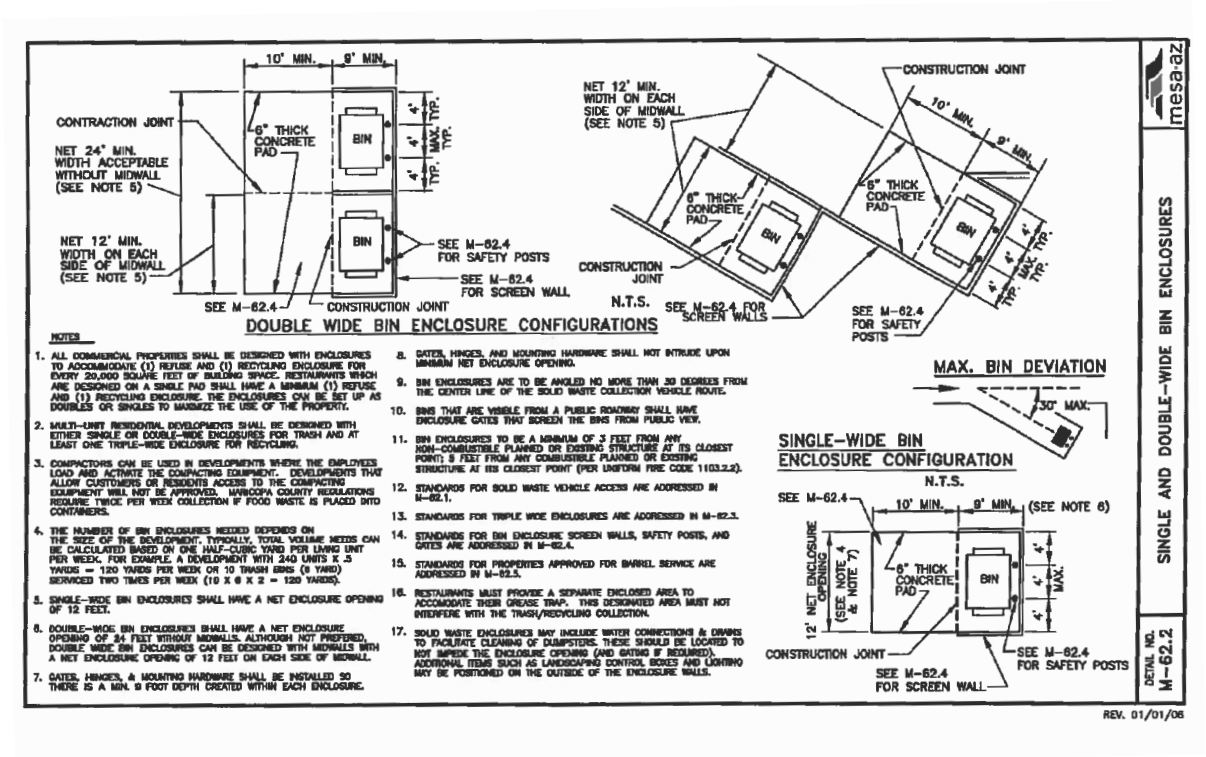
SINGLE AND DOUBLE-WIDE BIN ENCLOSURES
DETAIL NO. M-62.2
REV. 01/01/06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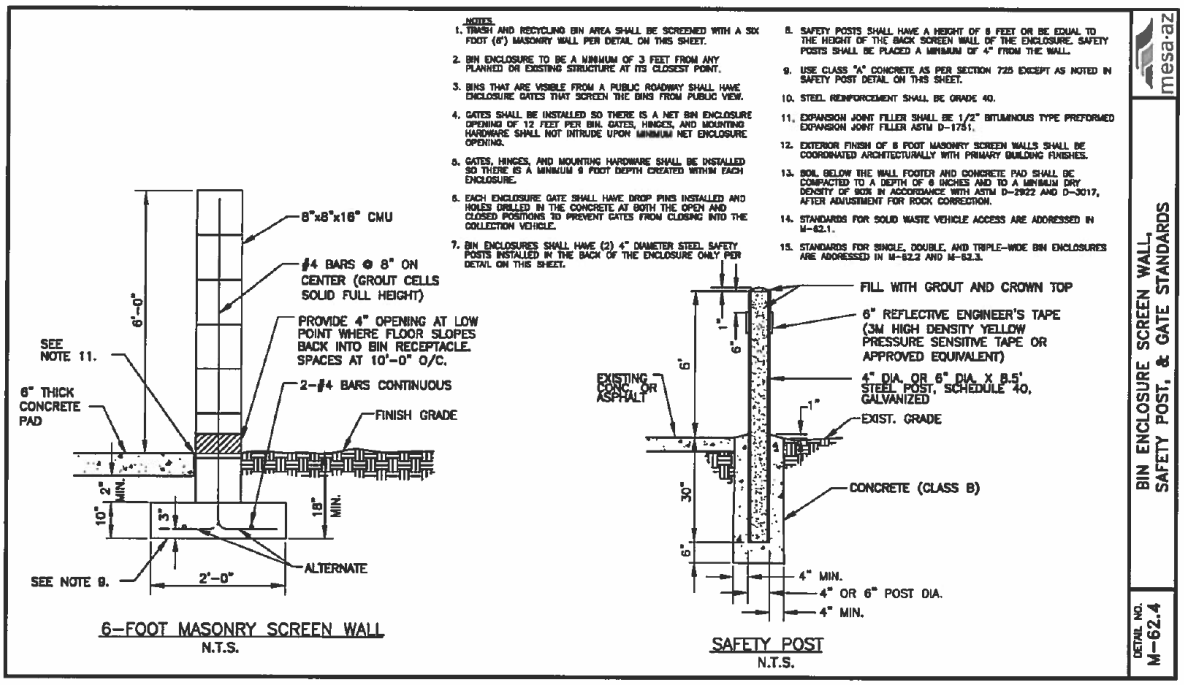

32 10 00 BASES, BALLASTS, AND PAVING

See DFCM Design Requirements, Section 3.2 Civil:

https://dfcm.utah.gov/wp-content/uploads/design_requirements.pdf

32 33 00 SITE FURNISHINGS

Exterior Metal – Non-Ferrous

- The exterior metal for guardrails, handrails, and bike racks, are constructed from non-ferrous materials.

32 33 13 SITE BICYCLE RACKS

Bike Racks:

- U Rack/ 1 Loop 3 Bikes Standard, Belson Outdoors Model #U238-IG-S or comparable. See specification sheet.
- Stainless steel, powder coated, or hot-tipped galvanized.

32 33 23 SITE TRASH AND LITTER RECEPTACLES

Waste and recycling collection is an integral design selection for projects and shall be addressed in all design phases. Existing standards are not the default solution applicable to all projects. The following are for use in exterior applications and non-public spaces:

- Rubbermaid Tailor™ Metal Frame 41 Gal, Black SKU: 2182672

32 33 43 SITE SEATING AND TABLES

- Avoid materials that will rust.
- Acceptable materials include hot dip galvanized steel, concrete and recycled plastic.

GROUNDS: SPECIFICATION AND SITE PREPARATIONS MANUAL - STANDARDS FOR PROJECT MANAGEMENT

II. INTRODUCTION

A. The SLCC Landscape Specification Standards provide a unified framework for planning, executing, and maintaining landscape projects across all Salt Lake Community College campuses.
B. These standards are designed to ensure consistency in quality, sustainability, and visual coherence throughout SLCC's diverse outdoor environments.
C. These specifications apply to all SLCC properties, regardless of location or size.
D. Whether the project involves new construction, renovation, or routine maintenance, adherence to these standards ensures that every campus reflects SLCC's commitment to excellence and environmental responsibility.

III. Project managers play a critical role in implementing these standards.

E. They are responsible for:
    1. Ensuring all landscape work aligns with SLCC's specifications, coordinating with contractors, vendors, and internal teams, monitoring compliance throughout the project lifecycle, and alignment with SLCC's sustainability campus aesthetic goals.
    2. By following these guidelines, project managers help create outdoor spaces that are not only functional and attractive but also ecologically sound and cost-effective over time.
F. This document serves as a foundational resource for all landscape-related projects and should be consulted at every stage—from initial planning to final inspection—to ensure alignment with SLCC's values and operational expectations.

IV. GENERAL SITE PREPARATION REVIEW

A) Site Evaluation:
    a. Prior to beginning any landscape work, a comprehensive site evaluation must be performed to assess existing conditions and determine necessary preparations.
    b. This includes analyzing soil composition, drainage, vegetation, irrigation infrastructure, and site accessibility.
    c. Special attention must be given to soil testing, particularly when canal or culinary water sources are used for irrigation, as these may require specific soil modifications to support plant health and system longevity.
    d. Project managers must refer to the "Soils" section of this specification for detailed guidance on amendments, pH adjustments, and nutrient balancing.
    e. Coordination with SLCC Facilities and Grounds is essential to document current site conditions and ensure all landscape designs are tailored to the unique environmental and operational needs of each campus location.

V. SOIL TESTING REVIEW

A) Native Soils:
    1. Most Utah soils have pH values ranging from the mid-7.0s to low 8.0s.
    2. While many plants can tolerate a broad range of soil pH, most struggle to thrive in soils with pH levels above 7.0.
    3. To improve growing conditions for these plants, soil amendments may be necessary.
    4. One emerging approach involves incorporating carbon ferrite, a compound that can help buffer and gradually lower soil pH.
    5. When used in combination with traditional acidifying agents such as elemental sulfur or peat moss, carbon ferrite may enhance soil acidity and improve nutrient availability for acid-loving turfgrass, perennials, and certain woody plants, ideally supporting a pH range of 6.0 to 7.0.

B) <u>References</u>

- Utah soils (no date) Utah's State Geographic Information Database (AGRC). Available at: https://opendata.gis.utah.gov/datasets/047e5268bed7404e8b7cf349d36c8283_0/explore (Accessed: 26 August 2025).
- Combs, Sherry. (n.d.). Reducing soil ph. Wisconsin Horticulture. https://hort.extension.wisc.edu/articles/reducing-soil-ph/

VI. Soil Mechanics Review

A. Soil used for **lawns, planting areas, and planting materials** shall allow for reasonable variance to accommodate site conditions.
B. All soils shall be suitable for plant health, drainage, and long-term performance.
C. Vegetation types including **turfgrass, perennials, and selected woody plants** that are irrigated using **culinary water or canal water** shall conform to **USDA soil texture specifications**.
D. Soils shall fall **within or close to standard USDA textural class expectations** for the intended planting type.
E. Culinary Water Irrigation Source - Mulch Beds
    1. Option 1 – Coarse Sandy / Sandy Loam Range
        a. Sand: 70% to 85%
        b. Clay: 8% to 20%
        c. Silt: 2% to 10%
    2. Option 2 – Sandy Clay Loam Range
        a. Sand: 60% to 65%
        b. Clay: 35% to 35%
        c. Silt: 5% to 10%
F. Culinary Water Irrigation Source - Mulch Beds (Alternate Textures)
    1. Option 3 – Coarse Sandy Mix
        a. Sand: 75% to 90%
        b. Clay: 8% to 20%
        c. Silt: 2% to 5%
    2. Option 4 – Fine Clay Mix
        a. Sand: 50% to 55%
        b. Clay: 35% to 40%
        c. Silt: 10% to 15%
G. Canal Water Irrigation Source - Turfgrass & Xeriscapes Beds
    1. Turfgrass and xeriscape planting beds irrigated with **canal water** shall meet USDA soil texture standards appropriate to their plant type.
    2. Soil composition shall emphasize:
        a. Adequate drainage
        b. Suitability for salinity and sodium exposure
        c. Long-term soil stability for reduced compaction
    3. Loam and sandy loam textures are preferred, while heavy clay soils should be avoided unless drainage and leaching provisions are demonstrated.

VII. SLCC Contractor Requirements for Landscape Protection

A. Protection Zones
    1. Contractors must protect all landscape assets before any construction or excavation begins:
B. Trees:
    1. Install physical barriers (e.g., chain-link or sturdy fencing) around the Critical Root Zone (CRZ), defined as 1.5 feet per inch of trunk diameter at breast height (DBH).
    2. Barriers must remain in place for the entire project's duration.
C. Shrubs & Plant Beds:
    1. Erect temporary fencing or protective barriers around shrub beds and perennial/annual flower beds.
    2. Avoid stockpiling materials or equipment within these zones.

D. Turfgrass:
    1. Do not drive or park vehicles on turf areas unless approved access mats are used.
    2. Avoid prolonged placement of materials on turf to prevent browning or compaction.
    3. Irrigation Systems:
    4. Contractors must locate and protect irrigation heads, valves, and mainlines before work begins.
    5. Any damage to irrigation infrastructure must be repaired immediately at the contractor's expense.

E. Hardscape (Pavers, Walkways):
    1. Protect paver areas from heavy equipment and staining.
    2. Use plywood or mats under equipment to prevent cracking or displacement.

F. Pre-Work Briefings:
    1. All contractors will receive SLCC Landscape Protection Standards prior to work.
    2. Contractors must sign a compliance agreement acknowledging these standards.

G. Monitoring:
    1. SLCC Grounds staff will conduct regular inspections of work sites to ensure compliance.
    2. Non-compliance will be documented and penalties enforced.

H. Penalties for Damage
    1. Trees:
        a. Minor Damage (bark scraping, broken limbs): $500–$1,500 per incident, plus corrective pruning.
        b. Root Zone Compaction or Soil Disturbance: $2,000–$5,000 per incident, plus soil remediation.
        c. Tree Removal or Death Due to Negligence: Full replacement cost based on SLCC inventory valuation (caliper size, species, installation), typically $125–$15,000 per tree.
    2. Shrubs & Plant Material:
        a. Damage or removal: $50–$500 per shrub, plus installation costs.
        b. Perennials/Annuals: $10–$50 per plant, plus labor for replanting.
    3. Turfgrass:
        a. Damage from ruts, material storage, or irrigation breaks: Contractor must repair and re-sod damaged areas at their expense.
        b. Failure to restore turf: $250–$1,000 per incident, plus cost of sod and labor.
    4. Irrigation:
        a. Broken heads, valves, or lines: $100–$500 per component, plus labor and water loss costs.
    5. Hardscape (Pavers):
        a. Cracked or displaced pavers: $25–$75 per paver, plus labor for resetting or replacement.
    6. Repeated Non-Compliance:
        a. Termination of contract and reporting to SLCC Procurement for future bid restrictions.

B. Program Goal
    1. By linking the value of landscape assets to enforceable contractor obligations and penalties, SLCC ensures its urban forest, plantings, turf, and hardscape remain healthy, safe, and sustainable, reducing risk under the SLCC Established Tree & Landscape Protection Program.

VIII. Irrigation System Review

A. <u>Proper Sprinkler Head Selection</u>
    1. Essential for efficient irrigation, plant health, and water conservation.
    2. The type of plant material whether turf, shrubs, groundcovers, or trees—determines the most appropriate irrigation method.
    3. All contractors must employ a certified irrigation contractor to install new systems or modify existing ones.
    4. Additionally, the contractor must be WeatherTRAK-certified to reprogram any controller that has been turned off regardless of whether a new system is installed as part of the project.
    5. At SLCC, irrigation systems are predominantly managed using WeatherTRAK technology.
    6. It is the contractor's responsibility to test any newly installed irrigation system and ensure that a qualified, certified professional is assigned to the project.
    7. Once landscape work is completed, the contractor must test the system and reprogram the irrigation controller to meet the specifications and expectations of the Grounds Director.

B. Turfgrass Areas
    1. Recommended Sprinkler Head: Pop-up spray heads or rotary heads.
C. Function:
    1. Uniform coverage over large areas.
        a. Please note: Spray heads are ideal for small, flat turf areas,
        b. Rotary heads (e.g., gear-driven rotors) are better for larger lawns due to their longer throw and lower precipitation rate.
D. Shrubs and Groundcovers
    1. Recommended sprinkler head:
        a. Drip emitters or micro-spray heads.
    2. Function:
        a. Targeted watering at the root zone.
            1. Please note: Drip emitters reduce evaporation and runoff,
            2. Micro-sprays can be used for dense plantings but may increase evaporation.
E. Trees
    1. Function:
        a. Provide slow, deep watering to encourage healthy root development and minimize surface evaporation.
    2. Application for Newly Planted Trees
        a. Bubblers are ideal for newly planted trees, delivering concentrated water directly to the root zone.
        b. To prevent damage from expanding root systems, bubblers should be placed:
            1. At the tree's drip line and add an additional bubbler 5–10 feet beyond the drip line, depending on the species and expected mature size.
            2. Use adapter hoses or flexible extensions to direct water precisely to the root system.
            3. Application for Mature Trees For established trees with deeper root zones, subsurface drip irrigation is recommended.
                1. This method promotes deeper root growth and reduces water loss due to evaporation.
F. Perennials and Flower Beds
    1. Recommended Sprinkler Head:
        a. Drip Lines or Micro-Sprays Function:
            1. Gentle watering to avoid damaging delicate foliage.
                1. Please note: Drip lines can be woven through beds for even coverage.
            2. Micro-sprays are useful for mixed beds with varied plant heights.
G. Slopes and Erosion-Prone Areas
    1. Recommended sprinkler head:
        a. Low-volume drip emitters.
    2. Function:
        a. Minimize runoff and erosion.
H. General Design Principles
    1. Design must follow Rain Bird's Landscape Irrigation Design manual.
    2. Use hydrozones based on plant water needs, sun exposure, and soil type.
    3. Prioritize water efficiency and compliance with local ordinances Utah Division of Water Rights (DWRi)

IX. Irrigation Components

A. Sprinkler Heads
    1. Use Rain Bird 5000 Series rotary heads for turf areas.
    2. Use Rain Bird HE-VAN or R-VAN nozzles for shrubs and irregular zones.
    3. Use Rain Bird Xeri-Bug or XFD dripline for trees and planter beds.
B. Valves
    1. Install Rain Bird DV or PGA series valves with flow control.
    2. Include Rain Bird PRS-Dial pressure regulators where needed.

C. Piping
   1. Mainlines: Class 200 PVC or SCH 40 for high-pressure zones.
   2. Laterals: Class 160 PVC or polyethylene tubing for drip zones.
   3. Use purple pipe for non-potable water zones.

D. Wiring
   1. Use 14-gauge direct burial wire for valve connections.
   2. All splices must be waterproof using Rain Bird DBY/DBR connectors.
   3. Follow NEC standards for wire separation and conduit use.
   4. Controller Standards – WeatherTRAK ET Pro3.

E. Controller Setup
   1. Use WeatherTRAK ET Pro3 2-Wire controllers for large zones (up to 96 stations). Siteone
   2. Program using ET Everywhere® weather data for daily runtime adjustments.
   3. Enable cycle and soak to prevent runoff on slopes.
   4. Programming Modes
   5. Use “Optimized by WeatherTRAK” for most zones.
   6. Use “User-No ET” for deep watering trees with manual soak cycles.
   7. Assign unique water windows to avoid overlapping valve operations.
   8. Flow Management
   9. Integrate flow sensors for leak detection and mainline break alerts.
   10. Use WeatherTRAK FlowLink® or compatible sensors (Data Industrial, Netafim). siteone

F. Connectivity
   1. Controllers must be connected via LTE cellular or WeatherTRAK Central for remote access and diagnostics.

G. Installation & Commissioning
   1. Trenching & Layout
   2. Minimum 12" depth for lateral lines, 18" for mainlines.
   3. Maintain 12" clearance from electrical lines.

H. Valve Boxes
   1. Use standard green valve boxes with a gravel base and secure lids.
   2. Label each box with valve number and zone description.

I. Controller Wiring
   1. Map each valve to its corresponding station.
   2. Document wire color, valve number, and zone description in asset map.

J. Testing
   1. Perform wet tests for each zone.
   2. Conduct full functional tests twice per year and after major changes.
   3. Maintenance Standards
   4. Respond to all WeatherTRAK alerts (e.g., high flow, valve faults).
   5. Update controller programming after landscape changes.
   6. Maintain documentation including Site Programming Worksheets.

K. Filter Cleaning
   1. Locate and access all mainline and zone filters.
   2. Remove, inspect, and clean filter screens and housing.
   3. Reinstall filters and verify proper sealing and pressure retention.

L. Line Flushing
   1. Open all flush valves at the end of the drip zones.
   2. Activate irrigation zones manually via controller or valve box.
   3. Flush each zone for a minimum of 5 minutes or until water runs clear.
   4. Close flush valves securely after flushing.

M. System Inspection
   1. Check for clogged emitters, leaks, or pressure irregularities.
   2. Report any damaged components to the project manager.

3. Ensure that all valves and emitters are functioning properly.

N. Controller Coordination
1. Coordinate with the irrigation technician to activate zones via WeatherTRAK controller.
2. Verify controller settings for proper zone runtime and sequencing.

O. Documentation
1. Provide a completion report listing:
2. Filters cleaned
3. Zones flushed
4. Issues found and resolved
5. Recommendations for future maintenance

P. Timeline
1. Work must be completed within [insert number] days of project completion.
2. Schedule must be coordinated with the site supervisor to avoid conflicts with other trades.

Q. Materials & Equipment
1. Contractor must provide:
2. Filter cleaning tools
3. Flush hose or tubing
4. PPE (gloves, eye protection)
5. Pressure gauge (optional)

R. Acceptance Criteria
1. All filters were cleaned and reinstalled.
2. All zones flushed with visibly clear water.
3. No leaks or clogged emitters present.
4. Completion report submitted and approved.

X. Drainage and Grading Review

A) Site Assessment
1. Topography: Identify natural slopes and low points.
2. Soil Type: Determine infiltration rates (e.g., clay vs. sandy soils).
3. Water Sources: Consider rainfall, irrigation, and runoff from adjacent properties.

B) Drainage Design
1. Surface Drainage: Use swales, berms, and grading to direct water flow.
2. Subsurface Drainage: Install French drains, perforated pipes, or dry wells for areas with poor surface drainage.
3. Stormwater Management: Include retention/detention basins, rain gardens, or bioswales to manage runoff sustainably.

C) Drainage Structures
1. Catch Basins & Inlets: Collect surface water and direct it to underground systems.
2. Drainage Pipes: PVC or corrugated pipes to transport water.
3. Outfalls: Safe discharge points for collected water.
4. Material: Schedule 40 or SDR 35 PVC, ASTM D3034 or D1785
5. Diameter: Minimum 6" or larger.
6. Slope: Minimum 1% (1/8" per foot) unless otherwise engineered
7. Jointing: Solvent-weld or gasketed bell-and-spigot joints
8. Bedding: Class I granular material, compacted to 95% Proctor

9. Cover Depth: Minimum 12" cover in non-traffic areas; 18" in traffic areas
10. Cleanouts: Every 100 ft or at bends >45°, per code
11. Outfall Protection: Energy dissipation (e.g., riprap apron, splash blocks)

D) Regulatory Compliance
1. Follow local codes for stormwater discharge, erosion control, and environmental protection. Utah Department of Environmental Quality (DEQ)

E) Grading Plan
1. Contour Mapping: Use topographic surveys to plan elevation changes.
2. Slope Design: Ensure slopes are safe and functional:
3. Lawn areas: 1–2% slope
4. Paved areas: Minimum 1% slope
5. Planting beds: 2–4% slope for drainage

F) Elevation Control
1. Building Foundations: Grade away from structures (typically 5% slope for first 10 feet).
2. Hardscapes: Ensure patios, walkways, and driveways have proper pitch.
3. Accessibility: Maintain ADA-compliant slopes where needed.

G) Erosion Control
1. Use silt fences, erosion blankets, and hydroseeding during construction.
2. Stabilize slopes with vegetation or retaining structures.
3. Installed downslope of disturbed areas.
4. Trenched and backfilled to prevent underflow.
5. Inspected weekly and after rain events.
6. Straw Wattles / Fiber Rolls
7. Place along contours or slopes.
8. Anchored with stakes every 4 ft.
9. Used to slow runoff and trap sediment.
10. Constructed from rock, sandbags, or wattles in ditches or swales.
11. Reduce flow velocity and trap sediment.
12. Spaced to prevent channel erosion.
13. Inlet Protection
14. Gravel bags, silt fence rings, or filter fabric around storm drain inlets.
15. Prevent sediment from entering stormwater systems.
16. Dust Control
17. Watering, tackifiers, or soil binders are used to suppress dust.
18. Required during dry, windy conditions.
19. Permanent Erosion Control BMPs
20. Vegetative Stabilization
21. Seeding, hydroseeding, or sod installation.
22. Use native or drought-tolerant species.
23. Mulch or erosion control blankets required on slopes >3:1.
24. Riprap & Energy Dissipation
    a. Installed at pipe outlets, culverts, and channels.
    b. Sized per flow velocity and soil type.
    c. Prevents scouring and downstream erosion.

25. Terracing & Contouring
    a. Used on steep slopes to reduce runoff velocity.
    b. Designed to promote infiltration and reduce erosion.

25. Retaining Structures

a. Gabions, block walls, or timber structures.
b. Stabilize slopes and prevent soil movement.

H) Inspection & Maintenance
1. Weekly inspections and after each 0.5" rainfall event.
2. Damaged BMPs must be repaired or replaced within 24 hours.
3. Sediments must be removed when accumulation reaches 1/3 of BMP height.

I) Integration with Landscape Features
1. Coordinate grading with:
2. Planting zones
3. Irrigation systems
4. Lighting and utilities
5. Retaining walls and terraces

J) Best Practices
1. Start early: Integrate drainage and grading in the initial design phase.
2. Collaborate: Work with civil engineers, landscape architects, and contractors.
3. Inspect regularly: Monitor during and after construction for issues.
4. Plan for maintenance: Ensure systems are accessible and serviceable
   a. Removal of debris, weeds, and existing vegetation
   b. Coordination with Facilities and Campus Safety
   c. Accessibility and pedestrian flow consideration

XI. Planting Material and Soil Prepping Review

A) Soil Perpetration
1. Soil preparation: tilling, leveling, and amendments. Till soil to a minimum depth of 12 inches using a rotary tiller, spade, or tractor-mounted implement. Avoid tilling when soil is saturated or frozen to prevent smearing and compaction. Perform tilling in two perpendicular passes to ensure uniform soil breakup.

B) Tilling
1. Till soil to a minimum depth of 12 inches using a rotary tiller, spade, or tractor-mounted implement.
2. Avoid tilling when soil is saturated or frozen to prevent smearing and compaction.
3. Perform tilling in two perpendicular passes to ensure uniform soil breakup and mixing.
4. Leveling
5. After tilling, grade and level the area to eliminate low spots and promote even water distribution.
6. Ensure a smooth, fine soil surface free of clumps, rocks, and debris.

C) Soil Amendments Leafgro/Compost Rates
1. 2–3 cubic yards per 1,000 sq ft for moderate improvement
2. 4–5 cubic yards per 1,000 sq ft for severely compacted or silt-heavy soils
3. Compost must be screened and free of weed seeds, trash, and pathogens
4. Certified by STA (Seal of Testing Assurance) or equivalent
5. Mix compost thoroughly into the top 12 inches of soil during tilling.
6. Ensure even distribution with no layering or clumping.
7. Final soil bed should be fine-textured, free of rocks and dirt clods, and ready for seeding.

D) Timing
1. Best seasons: Spring or Fall
2. Avoid installation during extreme heat or drought conditions.

E) Turfgrass Seed
1. Seeding Recommended:
    a. To establish a durable, self-repairing turf using Barenbrug Rhizomatous Tall Fescue Blend RTF, 25% Labarinth, 65% Barcesar / Barlexas II and 10% Julius, which features rhizome-producing tall fescue varieties for superior drought tolerance, wear resistance, and turf density.

F) Seeding Rates
1. New Seeding: 10–12 lbs. per 1,000 sq ft
    a. Overseeding: 10–15 lbs. per 1,000 sq ft

G) Equipment & Seeding Procedure
1. Use a commercial grade turfgrass slit seeder with adjustable seed rate and blade depth.
2. Seeder must be capable of cutting narrow slits (¼–½ inch deep) and dropping seed directly into the soil for optimal seed-to-soil contact.
3. Calibrate equipment before use to ensure accurate and uniform seed distribution.
4. Two-Direction Seeding Method
5. First Pass: Operate the slit seeder in a north-south direction, overlapping each row by 25% to ensure consistent coverage.
6. Second Pass: Repeat the process in an east-west direction, overlapping rows by 25%.
7. This crosshatch pattern ensures 90–100% soil contact, promoting uniform germination and turf density.

XII. Turfgrass Species and Planting Installation Review

A) Keep seedbed consistently moist during germination (7–21 days).
    1. Avoid overwatering or letting the soil dry out after initial seed imbibition just to a damp point; however, do not let it dry out.
B) Week One: Starter Fertilizer.
    1. Apply Lesco 18-24-11 18% FE at the rate of 1 to 1.5 lbs. per 100 sq ft. or 3.63 bags (50 lb. each)
C) Week Four: Earthworks Replenish (Sulfur):
    1. Apply 8-2-2 at the rate 1.0 to 1.5 lbs. per 100 sq ft or 5 lbs./1,000 sq ft 653.4 lbs or 13 bags per acre (50lbs each)
D) Week Six Nitrogen Fertilizer:
    1. Apply 30-0-3 AM MOP at the rate of 5 lbs./1,000 sq ft (1.5 lb. N) or 217.8 lbs. per acre 4.4 bags per acre
E) To re-establish turf in areas where initial seeding of Barenbrug Rhizomatous Tall Fescue Blend failed to germinate or resulted in poor coverage.

F) Sod Installation
    1. Type American
        i. Oasis Turf Type Tall Fescue
G) Location:
    1. All American Sod 8650 South 700 West Sandy UT 84070
H) Timing
    1. Best seasons: Spring or Fall
    2. Avoid installation during extreme heat or drought conditions.
I) Laying Sod
    1. Begin installation immediately after sod delivery.
    2. Lay sod in a brick-like staggered pattern to minimize seams.
    3. Butt edges tightly together without overlapping.
    4. Use a sharp knife to trim sod around curves and edges.
J) Rolling/Sater Application
    1. Roll sod with a lawn roller to ensure good soil contact and eliminate air pockets and apply a Lesco 18-24-11 18% FE at the rate of 1 to 1.5 lbs. per 100 sq ft. or 3.63 bags (50 lb. each)

K) Watering
   1. Week One and Two: Water 2–3 times per day in short cycles of 5–10 minutes per zone.
   2. Week Two and Three: Water 2–3 times per day in longer cycles of 10-15 minutes per zone.

L) Adjustments:
   1. Modify frequency and duration based on weather conditions, soil type, and site slope to prevent runoff and ensure adequate moisture.

M) Moisture Depth:
   1. Ensure water penetrates a depth of at least 1 inch into the soil beneath the sod.

N) Best Practices
   1. Water during the early morning and late afternoon to reduce evaporation.
   2. Avoid runoff, puddling, and drying out—sod should remain consistently moist.
   3. Watch for signs of stress such as graying or curling edges, which indicate dehydration.

O) Fertilizing
   1. Week One: Starter Fertilizer. Apply Lesco 18-24-11 18% FE at the rate of 1 to 1.5 lbs. per 100 sq ft. or 3.63 bags (50 lb. each)
   2. Week Four: Earthworks Replenish (Sulfur): Apply 8-2-2 at the rate 1.0 to 1.5 lbs. per 100 sq ft or 5 lbs./1,000 sq ft 653.4 lbs or 13 bags per acre (50lbs each)
   3. Week Six Nitrogen Fertilizer: Apply 30-0-3 AM MOP at the rate of 5 lbs./1,000 sq ft (1.5 lb. N) or 217.8 lbs. per acre 4.4 bags per acre

P) Quality Control and Inspections
   1. Pre-installation checklist
   2. In-progress monitoring and documentation
   3. Final inspection and acceptance criteria
   4. Maintenance schedule handoff to Grounds team

Q) Reporting & Communication/Submit monthly reports detailing:
   1. Turfgrass health status
   2. Watering schedule
   3. Maintenance activities
   4. Pest/disease observations
   5. Notify the project manager of any tree loss or replacement needs

XIII. Groundcover Species and Planting Installation Review

A) Objective to establish resilient, low-maintenance groundcover using climate-appropriate native and non-native plants for erosion control, weed suppression, and visual enhancement in Salt Lake City landscapes.

B) Approved Groundcover Plant List
   1. Sulphur Buckwheat (Eriogonum umbellatum) tolerant, year-round interest
   2. Pink Pussytoes (Antennaria rosea)
   3. Creeping Hummingbird Trumpet (Zauschneria latifolia) –
   4. Pineleaf Penstemon (Penstemon pinifolius)
   5. Globemallow (Sphaeralcea spp.)

C) Approved Non-Native (Adaptive) Groundcovers (Source: Axios)
   1. Creeping Thyme (Thymus serpyllum,
   2. Sedum (Stonecrop)
   3. Cooper’s Ice Plant (Delosperma cooperi)
   4. Ajuga (Ajuga reptans)
   5. Woolly Thyme (Thymus pseudolanuginosus)

D) Site Preparation
   1. Clear Area

2. Remove all weeds, debris, and existing vegetation.
3. Till or loosen soil to a depth of 4–6 inches.

E) Soil Amendment
1. Incorporate compost or organic matter if soil is compacted or nutrient-poor.
2. Ensure proper drainage—avoid planting in areas with standing water.

F) Grading
1. Grade surface to prevent erosion and promote even water distribution.

G) Planting Guidelines Plant Spacing
1. 2-4 inches for a fuller effect
2. 6–12 inches apart for fast-spreading species (e.g., thyme, ajuga)
3. 12–18 inches apart for clumping or slower growers (e.g., buckwheat, penstemon)

H) Planting Depth
1. Dig holes slightly wider than the root ball.
2. Place plants so the crown is level with the soil surface.
3. Backfill and gently firm soil around roots.

I) Mulching
1. Apply 1–2 inches of black mulch around plants to retain moisture and suppress weeds.
2. Keep mulch away from plant crowns to prevent rot.

J) Watering Schedule
1. Week 1–2: Water daily to establish roots.
2. Week 3–4: Water every other day.
3. Week 5+: Transition to weekly deep watering, depending on rainfall and soil type.

K) Maintenance
1. Weed control: Monitor and remove invasive weeds until groundcover fills in.
2. Pruning: Lightly trim to encourage spreading and maintaining shape.
3. Fertilization: Apply low-nitrogen fertilizer in early spring if needed.

L) Quality Control and Inspections
1. Pre-installation checklist
2. In-progress monitoring and documentation
3. Final inspection and acceptance criteria
4. Maintenance schedule handoff to Grounds team

M) Reporting & Communication/Submit monthly reports detailing:
1. Groundcover health status
2. Watering schedule
3. Maintenance activities
4. Pest/disease observations
5. Notify the project manager of any tree loss or replacement needs

XIV. Perennial Flower Species and Planting Installation Review

A) Objective to establish a healthy, sustainable, and visually appealing perennial flower bed using a mix of native and non-native adapted species suited to Salt Lake City's climate.

B) Approved Native Perennials Flowers
1. Aster (New England, Alpine, Calico)
2. Daisies (Shasta, English)
3. Goldenrod (Canada, Giant)
4. Bee Balm (Scarlet, Lemon)
5. Milkweed (Common, Swamp)
6. Joe Pye Weed
7. Columbine (McKana Giant Mix)
8. Black-Eyed Susan
9. Coneflower (Echinacea spp.)

10. Butterfly Weed (Asclepias tuberosa)

C) Approved Non-Native Adapted Perennials
1. Ashy Cranesbill (Geranium cinereum)
2. Daylily (Hemerocallis spp.)
3. Foxglove (Digitalis purpurea)
4. Hyacinth (Hyacinthus orientalis)
5. John Cabot Rose
6. Tickseed/Coreopsis
7. Munstead Lavender
8. Strawberry Seduction Yarrow
9. September Charm Windflower (Anemone)
10. Catmint Nepeta cataira
11. Iris
12. Salvia (genus)

D) Site Preparation
1. Soil Testing: Conduct pH and nutrient analysis.
2. Amendments: Add compost or sand as needed for drainage and fertility.
3. Weed Removal: Clear all invasive or competing vegetation.
4. Grading: Ensure proper slope for drainage and erosion control.
5. Irrigation: Install a spray head to the irrigation system

E) Planting Guidelines
1. Timing: Plant in early spring or fall for optimal root establishment.
2. Spacing: Follow species-specific spacing (typically 12–24 inches apart).
3. Depth: Plant at crown level; avoid burying stems.
4. Mulching: Apply 2–3 inches of organic mulch around each plant, avoiding direct contact with stems.
5. Labeling: Use temporary plant markers for identification during establishment.

F) Initial Watering
1. Water immediately after planting to settle soil.
2. Maintain consistent moisture for the first 4–6 weeks.
3. Transition to drought-tolerant schedule based on species needs.

G) Maintenance (First Year)
1. Watering: Deep watering 1–2 times per week depending on weather.
2. Weeding: Monthly removal of weeds and invasive species.
3. Deadheading: Remove spent blooms to encourage reblooming.
4. Pruning: Light pruning in late fall or early spring.
5. Fertilization: Apply slow-release organic fertilizer in spring and midsummer.
6. Pest Management: Monitor monthly; use organic or IPM methods.
7. Contractor shall guarantee the plant's health for 12 months.
8. Replace any dead or failing plants at no cost unless damage is due to vandalism or extreme weather.

H) Quality Control and Inspections
1. Pre-installation checklist
2. In-progress monitoring and documentation
3. Final inspection and acceptance criteria
4. Maintenance schedule handoff to Grounds team

I) Reporting & Communication/Submit monthly reports detailing:
1. Perennial flower health status
2. Watering schedule
3. Maintenance activities
4. Pest/disease observations
5. Notify project manager of any tree loss or replacement needs

J) Shrubs Species and Planting Installation Review
1. Objective: To ensure proper planting, establishment, and aesthetic integration of native and adaptive shrubs in triple black mulch beds across landscaped areas.

K) Materials
1. Selected shrubs (see plant list below)
2. Triple black mulch (shredded hardwood or dyed bark)
3. Compost or soil amendment (as needed)
4. Watering equipment
5. Mulch edging (optional)
6. Hand tools or auger

L) Approved Shrub List Native Shrubs
- Serviceberry (Amelanchier alnifolia) – greenpacks
- Cliffrose (Purshia mexicana) – Millburn landscape
- Bigtooth Maple (Acer grandidentatum) – Millburn landscape
- Rubber Rabbitbrush (Ericameria nauseosa) – Millburn landscape
- Snowberry (Symphoricarpos albus) – Sable Hills Utah
- Apache Plume (Fallugia paradoxa) – Sable Hills Utah
- Creeping Oregon Grape (Mahonia repens) – Sable Hills Utah
- Sumac (Rhus spp.) – Sable Hills Utah

M) Approved Non-Native (Adaptive) Shrubs
- Boxwood (Buxus spp.) – Sable Hills Utah
- Spirea (Spiraea spp.) – Sable Hills Utah
- Russian Sage (Perovskia atriplicifolia) – Sable Hills Utah
- Barberry (Berberis spp.) – Sable Hills Utah
- Juniper (Juniperus spp.) – Sable Hills Utah
- Potentilla (Potentilla fruticosa) – Sable Hills Utah
- Hydrangea (Annabelle, Incrediball) – Sable Hills Utah
- Lilac (Syringa vulgaris) – Sable Hills Utah

N) Installation Procedure/Site Preparation
1. Remove existing vegetation, debris, and rocks.
2. Loosen soil to a depth of 12–18 inches.
3. Incorporate compost if soil is compacted or nutrient-poor.
4. Grade area to ensure proper drainage.
5. Site Layout
6. Mark planting locations using flags or stakes.
7. Use a triangular grid to stagger rows and avoid uniform lines.
8. Maintain consistent spacing based on shrub species and mature spread.

O) Planting Specifications
1. Dig holes twice as wide and equal in depth to the root ball.
2. Place the shrub so the top of the root ball is level with the soil surface.
3. Backfill with native soil or amended mix, gently firming around roots.
4. Water thoroughly after planting to eliminate air pockets.

P) Spacing Methods
- 3-4 Method: Plant 3 shrubs in one row, followed by 4 shrubs in the next row, alternating the pattern. Creates a triangular or diamond grid that reduces straight lines and improves coverage. Ideal for medium-sized shrubs spaced 3–5 feet apart.

- 4-3 Method: Plant 4 shrubs in one row, followed by 3 shrubs in the next row, offset between the gaps. Offers a denser fill and is useful for larger beds or mass plantings. Recommended spacing: 4–6 feet apart, depending on mature size.
- Small shrubs (2–3 ft mature width): 2–3 ft apart
- Medium shrubs (3–5 ft mature width): 3–5 ft apart
- Large shrubs (5–8 ft mature width): 5–7 ft apart

Q) Mulching
1. Apply 2–3 inches of black mulch around each shrub.
2. Keep mulch 2–3 inches away from the base of the plant to prevent rot.
3. Ensure even coverage and a clean edge for visual appeal.

R) Watering
1. Water immediately after installation.
2. Follow a structured watering program for the first 4–6 weeks (see watering SOP).
3. Adjust based on weather and soil conditions.

S) Maintenance
1. Inspect weekly for signs of stress, pests, or disease.
2. Reapply mulch annually or as needed to maintain depth and color.
3. Prune according to species-specific guidelines.

T) Quality Control and Inspections
1. Pre-installation checklist
2. In-progress monitoring and documentation
3. Final inspection and acceptance criteria
4. Maintenance schedule handoff to Grounds team

U) Reporting & Communication/Submit monthly reports detailing:
1. Shrub health status
2. Watering schedule
3. Maintenance activities
4. Pest/disease observations
5. Notify the project manager of any tree loss or replacement needs

XV. Trees Species and Planting Installation Review

A) Objective to establish healthy, sustainable, and visually appealing trees using a mix of native and non-native adapted species suited to Salt Lake City's climate.

B) Approved Native Deciduous Trees
- Bigtooth Maple (*Acer grandidentatum*)
- Rocky Mountain Maple (*Acer glabrum*)
- Quaking Aspen (*Populus tremuloides*)
- Gambel Oak (*Quercus gambelii*)
- Western Catalpa (*Catalpa speciosa*)
- Chokecherry (*Prunus virginiana*)
- Mountain Mahogany (*Cercocarpus montanus*, *C. ledifolius*)
- Common Hackberry (*Celtis occidentalis*)
- Western Redbud (*Cercis occidentalis*)

C) Approved Non-Native Deciduous Trees
- Norwegian Sunset Maple (Acer truncatum × platanoides)
- Pacific Sunset Maple (Acer truncatum × platanoides)
- Zelkova (Zelkova serrata)
- Crabapple (All Varieties) (Malus spp.)

- Autumn Brilliance Serviceberry (Amelanchier × grandiflora)
- Columnar Oak (Various Cultivars)
- Kentucky Coffeetree (Gymnocladus dioicus) –
- Tulip Tree (Liriodendron tulipifera)
- European Beech (Fagus sylvatica)
- Japanese Tree Lilac (Syringa reticulata)
- Paperbark Maple (Acer griseum)
- Corneliancherry Dogwood (Cornus mas)
- Yellowwood (Cladrastis kentuckea)
- Chitalpa (Chitalpa × tashkentensis)
- Turkish Filbert (Corylus colurna)

D) Approve Native Evergreen Trees
- Utah Juniper (*Juniperus osteosperma*)
- Rocky Mountain Juniper (*Juniperus scopulorum*)
- Pinyon Pine (*Pinus edulis*)
- Limber Pine (*Pinus flexilis*)
- Bristlecone Pine (*Pinus longaeva*)
- White Fir (*Abies concolor*). Non-Native Deciduous Trees
- Norway Maple (*Acer platanoides*)
- Silver Maple (*Acer saccharinum*)
- Red Maple (*Acer rubrum*)
- Japanese Maple (*Acer palmatum*)
- Honeylocust (*Gleditsia triacanthos*)
- European Beech (*Fagus sylvatica*)
- Tulip Tree (*Liriodendron tulipifera*)
- Callery Pear (*Pyrus calleryana*)
- Black Locust (*Robinia pseudoacacia*)
- Sycamore Maple (*Acer pseudoplatanus*)
- John Cabot Rose Tree (*Rosa 'John Cabot'*)

E) Approved Non-Native Evergreen Trees
- Atlas Cedar (*Cedrus atlantica*)
- Deodar Cedar (*Cedrus deodara*)
- Bald Cypress (*Taxodium distichum*)
- Black Pine (*Pinus nigra*)
- Scots Pine (*Pinus sylvestris*)
- Norway Spruce (*Picea abies*)
- Korean Fir (*Abies koreana*)

F) Tree Planting Standards
1. Timing: Plant during spring or fall for optimal root establishment.
2. Hole Preparation: Dig holes 2–3 times wider than the root ball, with depth equal to root ball height.
3. Backfill: Use native soil unless otherwise specified; avoid soil amendments unless directed.
4. Mulching: Apply 2–4 inches of black mulch around the base, keeping mulch 2–3 inches away from the trunk. No volcano mounding around the tree trunk.
5. Staking: Stake only if necessary; remove stakes after one year.

G) Maintenance Standards (12 Months)
1. Watering
2. Establishment Phase: Deep watering 2–3 times per week for the first 6–8 weeks.

3. Maintenance Phase: Water 1–2 times per week depending on rainfall and soil conditions.
4. Method: Use drip irrigation or deep root watering to encourage deep root growth.
5. Mulching & Weed Control
6. Maintain mulch ring throughout the year.
7. Remove weeds monthly from the base and surrounding area.
8. Pruning. Fertilization
9. Apply slow-release fertilizer in spring if soil tests indicate need.
10. Avoid over-fertilization to prevent weak or excessive growth.

H) Pest & Disease Management
1. Monthly inspections for pests, disease, or stress.
2. Use integrated pest management (IPM) practices.
3. Report any infestations immediately.

I) Tree Health Monitoring
1. Monthly health checks with documentation.
2. Replace any tree that dies due to improper care.

J) Quality Control and Inspections
1. Pre-installation checklist
2. In-progress monitoring and documentation
3. Final inspection and acceptance criteria
4. Maintenance schedule handoff to Grounds team

K) Reporting & Communication/Submit monthly reports detailing:
1. Tree health status
2. Watering schedule
3. Maintenance activities
4. Pest/disease observations
5. Notify the project manager of any tree loss or replacement needs.

L) Warranty & Replacement
1. Contractor shall warranty all trees for 12 months.
2. Replace any tree that fails due to improper planting or care.
3. Replacement must be of the same species and size unless otherwise approved.

M) Quality Control and Inspections
1. Pre-installation checklist
2. In-progress monitoring and documentation
3. Final inspection and acceptance criteria
4. Maintenance schedule handoff to the Grounds team

N) Communication and Documentation
1. Project timeline and milestone tracking
2. Daily logs and progress reports
3. Repair and issue tracking
4. Coordination with Grounds, Facilities, and Campus Planning

XVI. Landscape Installation Checklist – Project Manager

A) Project Information
- Project Name: _____
- Location: _____

- Date: _____
- Project Manager: _____
- Crew Assigned: _____

B) General Site Preparation
1. Site layout reviewed and marked
2. Soil testing completed (pH, compaction, fertility)
3. Grading and drainage checked
4. Irrigation system installed/tested before planting
5. Planting areas cleared of debris/weeds
6. Soil amendments added and incorporated
7. Safety checks completed (utilities marked, equipment inspected)

C) Turfgrass Installation
1. Final grade smoothed and compacted properly
2. Soil amended (topsoil, compost, sand if required)
3. Irrigation coverage confirmed (no dry spots/overspray)
4. Sod/seed delivered in good condition
5. Sod installed tightly with staggered seams OR seed evenly spread
6. Starter fertilizer applied
7. First irrigation applied immediately after installation
8. Edges trimmed and secured

D) Perennials & Flowers Installation
1. Bed layout staked per design plan
2. Soil amended for drainage and fertility
3. Plants inspected for health (no pests/disease)
4. Holes dug to proper depth and width
5. Plants set at correct depth and orientation
6. Fertilizer/soil amendment added if required
7. Mulch applied (2–3 in., not covering crowns)
8. Irrigation tested and adjusted

E) Groundcover Installation
1. Area weed-free and soil prepared
2. Irrigation coverage checked
3. Plants inspected and spaced per design plan
4. Holes dug to proper depth
5. Mulch applied where required
6. Irrigation run to settle soil around roots

F) Shrubs Installation
1. Layout per design confirmed
2. Plants inspected for health and proper size
3. Planting holes dug 2× root ball width, correct depth
4. Root balls loosened / burlap, wire, or pots removed
5. Shrubs set level with surrounding grade
6. Backfill with amended soil, lightly tamped
7. Fertilizer or root stimulator applied (if specified)
8. Mulch applied (keep away from stems)
9. Irrigation tested for proper coverage

G) Trees Installation
1. Tree locations staked per design plan
2. Trees inspected for quality (straight trunk, no girdling roots)
3. Planting holes dug 2× root ball width, correct depth
4. Root ball wrapping (wire/burlap/pot) removed
5. Trees set with trunk flare at or slightly above grade

6. Backfill with native soil, lightly tamped
7. Stakes installed (if required) and ties adjusted loosely
8. Mulch applied (2–4 in., not touching trunk)
9. Irrigation tested and scheduled
10. Tree protection installed (guards if needed)

H) Xeriscape (Zero-Scape) Installation
1. Design plan reviewed for drought-tolerant plant selection
2. Soil amended only as needed for drainage (avoid excess organic matter)
3. Rock, gravel, or mulch groundcover installed to proper depth
4. Weed barrier fabric installed (if specified)
5. Planting holes dug properly, ensuring plants are set at grade
6. Drought-tolerant plants inspected for health and spacing
7. Irrigation (drip/low-flow emitters) installed and tested
8. Edging and transition zones installed cleanly
9. Final cleanup: rocks evenly spread, no exposed fabric/edges
10. Watering schedule set for establishment phase

I) Final Project Review
1. All plants watered in thoroughly
2. Excess soil/debris removed from site
3. Photos taken for records
4. Punch list completed and signed off
5. Maintenance instructions provided to client/grounds team

XVII. Approved Plant & Turf List

(For Use in SLCC Landscape Projects)

A. Turfgrass

Seed

a. Barenbrug Rhizomatous Tall Fescue (RTF) Blend
   i. 25% Labarinth
   ii. 65% Barcesar / Barlexas II
   iii. 10% Julius

Sod

a. Oasis Turf-Type Tall Fescue Sod

B. Perennial Flowers

- Aster *(New England, Alpine, Calico)*
- Daisies *(Shasta, English)*
- Goldenrod *(Canada, Giant)*
- Bee Balm *(Scarlet, Lemon)*
- Milkweed *(Common, Swamp)*
- Joe Pye Weed
- Columbine *(McKana Giant Mix)*
- Black-Eyed Susan *(Rudbeckia hirta)*
- Coneflower *(Echinacea spp.)*
- Butterfly Weed *(Asclepias tuberosa)*
- Ashy Cranesbill *(Geranium cinereum)*
- Daylily *(Hemerocallis spp.)*
- Foxglove *(Digitalis purpurea)*
- Hyacinth *(Hyacinthus orientalis)*
- John Cabot Rose *(Rosa 'John Cabot')*
- Tickseed *(Coreopsis spp.)*
- Munstead Lavender *(Lavandula angustifolia 'Munstead')*
- Strawberry Seduction Yarrow *(Achillea 'Strawberry Seduction')*

- September Charm Windflower *(Anemone × hybrida 'September Charm')*
- Catmint *(Nepeta cataria)*
- Iris *(Iris spp.)*
- Salvia *(Salvia spp.)*

II) Groundcovers

Native / Adaptive

- Sulphur Buckwheat *(Eriogonum umbellatum)*
- Pink Pussytoes *(Antennaria rosea)*
- Creeping Hummingbird Trumpet *(Zauschneria latifolia)*
- Pineleaf Penstemon *(Penstemon pinifolius)*
- Globemallow *(Sphaeralcea spp.)*

Adaptive / Ornamental

- Creeping Thyme *(Thymus serpyllum)*
- Woolly Thyme *(Thymus pseudolanuginosus)*
- Sedum / Stonecrop *(Sedum spp.)*
- Cooper's Ice Plant *(Delosperma cooperi)*
- Ajuga *(Ajuga reptans)*

III) Shrubs

Native Shrubs

- Serviceberry *(Amelanchier alnifolia)*
- Cliffrose *(Purshia mexicana)*
- Bigtooth Maple *(Acer grandidentatum)*
- Rubber Rabbitbrush *(Ericameria nauseosa)*
- Snowberry *(Symphoricarpos albus)*
- Apache Plume *(Fallugia paradoxa)*
- Creeping Oregon Grape *(Mahonia repens)*
- Sumac *(Rhus spp.)*

Adaptive & Ornamental Shrubs

- Boxwood *(Buxus spp.)*
- Spirea *(Spiraea spp.)*
- Russian Sage *(Perovskia atriplicifolia)*
- Barberry *(Berberis spp.)*
- Juniper *(Juniperus spp.)*
- Potentilla *(Potentilla fruticosa)*
- Hydrangea *(Hydrangea arborescens 'Annabelle', 'Incrediball')*
- Lilac *(Syringa vulgaris)*

IV) Trees

Native & Regionally Adaptive Trees

- Bigtooth Maple *(Acer grandidentatum)*
- Rocky Mountain Maple *(Acer glabrum)*
- Quaking Aspen *(Populus tremuloides)*
- Gambel Oak *(Quercus gambelii)*
- Western Catalpa *(Catalpa speciosa)*
- Chokecherry *(Prunus virginiana)*
- Mountain Mahogany *(Cercocarpus montanus, C. ledifolius)*
- Common Hackberry *(Celtis occidentalis)*
- Western Redbud *(Cercis occidentalis)*
- Utah Juniper *(Juniperus osteosperma)*
- Rocky Mountain Juniper *(Juniperus scopulorum)*
- Pinyon Pine *(Pinus edulis)*
- Limber Pine *(Pinus flexilis)*

- Bristlecone Pine *(Pinus longaeva)*
- White Fir *(Abies concolor)*\

Adaptive & Ornamental Trees

- Norwegian Sunset Maple *(Acer truncatum × platanoides)*
- Pacific Sunset Maple *(Acer truncatum × platanoides)*
- Zelkova *(Zelkova serrata)*
- Crabapple *(Malus spp., all varieties)*
- Autumn Brilliance Serviceberry *(Amelanchier × grandiflora)*
- Columnar Oak *(Quercus, cultivars)*
- Kentucky Coffeetree *(Gymnocladus dioicus)*
- Tulip Tree *(Liriodendron tulipifera)*
- European Beech *(Fagus sylvatica)*
- Japanese Tree Lilac *(Syringa reticulata)*
- Paperbark Maple *(Acer griseum)*
- Corneliancherry Dogwood *(Cornus mas)*
- Yellowwood *(Cladrastis kentuckea)*
- Chitalpa *(Chitalpa × tashkentensis)*
- Turkish Filbert *(Corylus colurna)*

Non-Native Deciduous Trees (select approved)

- Norway Maple *(Acer platanoides)*
- Silver Maple *(Acer saccharinum)*
- Red Maple *(Acer rubrum)*
- Japanese Maple *(Acer palmatum)*
- Honeylocust *(Gleditsia triacanthos)*
- Callery Pear *(Pyrus calleryana)*
- Black Locust *(Robinia pseudoacacia)*
- Sycamore Maple *(Acer pseudoplatanus)*
- John Cabot Rose Tree *(Rosa 'John Cabot')*

Conifers

- Atlas Cedar *(Cedrus atlantica)*
- Deodar Cedar *(Cedrus deodara)*
- Bald Cypress *(Taxodium distichum)*
- Black Pine *(Pinus nigra)*
- Scots Pine *(Pinus sylvestris)*
- Norway Spruce *(Picea abies)*
- Korean Fir *(Abies koreana)*

XVIII. Xeriscapes Rock Bed Installation Standards

A. This document outlines detailed standards and procedures for installing rock beds in Xeriscapes projects, including material specifications, best practices, and equipment guidelines.

B. Step-by-Step Installation Process

1. Plan & Mark the Area
    - Define boundaries using stakes and string for accurate layout.
    - Verify proper drainage and slope away from structures to prevent water pooling.
    - Mark utility lines before excavation for safety compliance.
2. Prepare the Site
    - Remove all grass, weeds, and debris to ensure a clean base.
    - Excavate to a depth of 2–4 inches for small beds or as specified in project drawings.
    - Compact soil to prevent future settling.

3. Install Edging
    - Use aluminum, steel, or heavy-duty plastic edging for durability.
    - Anchor edging securely to maintain shape under load.
4. Lay Landscape Fabric
    - Install high-quality weed barrier fabric to minimize weed growth.
    - Overlap seams by at least 6 inches and secure with landscape staples.
5. Add Base Layer (Optional)
    - Apply 1–2 inches of crushed stone or bedding sand for improved drainage.
    - Level and compact base before adding rock mulch.
6. Spread Rocks
    - Select durable rock types such as river rock, pea gravel, or fractured stone per design.
    - Spread evenly to maintain consistent depth and aesthetic finish.
    - Ensure final grade is slightly below edging for containment.
7. Best Practices & Safety Notes
    - Always wear PPE including gloves, safety glasses, and steel-toe boots.
    - Confirm material specifications match approved project submittals.
    - Maintain clear access for equipment and emergency exits during installation.
8. Rock Mulch Source Specifications

Description	Size	Color	Source	Project Reference
Rock Mulch - Light Vermillion (fractured)	1"	Tan	wedorox.com	Xeriscape Phase III, Xeriscape Phase IV
Rock Mulch - Golden Dawn (fractured)	1"	Tan	wedorox.com	Xeriscape Phase V, Xeriscape Phase VII, Alder Plaza, Xeriscape Phase VIII, Xeriscape Phase IX, Xeriscape South City North Phase
Rock Mulch - Golden Dawn (fractured)	3-6"	Tan	wedorox.com	Xeriscape Phase V
Rock Mulch - Golden Dawn (fractured)	3-6"	Tan	Mountain Valley Stone (435) 654-0120 Browns Canyon Quarry - Peoa, UT	Xeriscape Phase V
Rock Mulch - Woodland Blend (fractured)	1"	Red/Tan	wedorox.com	Xeriscape Phase III
Rock Mulch - Pure Cinnamon (fractured)	2-3"	Red	wedorox.com	Xeriscape Phase III, Xeriscape Phase IV, Xeriscape Phase V, Xeriscape Phase VII, Xeriscape South City North Phase
Rock Mulch - Cherokee (fractured)	2-3"	Red	American Stone (385) 900-1492 Heber City Pit – Heber City, UT	Xeriscape Phase V, Xeriscape Phase VI, Alder Plaza, Xeriscape Phase VIII, Xeriscape Phase IX
Rock Mulch - Pure Cinnamon (fractured)	4"	Red	wedorox.com	Xeriscape Phase V, Xeriscape Phase VII
Rock Mulch - Cherokee (fractured)	4"	Red	American Stone (385) 900-1492 Heber City Pit – Heber City, UT	Xeriscape Phase V, Xeriscape Phase VI, Xeriscape Phase VIII, Xeriscape Phase IX

Rock Mulch – Mountain Shadow (fractured)	2"	Gray	wedorox.com	Xeriscape Phase III, Xeriscape Phase IV, Xeriscape Phase VII
Rock Mulch - Pastel Riverbed (cobble)	3-8"	Tan	wedorox.com	Xeriscape Phase IV, Xeriscape Phase V, Xeriscape Phase VII, Xeriscape South City North Phase
Rock Mulch - Cobs (cobble)	2-4"	Tan	Geneva Rock (801) 281-7900 Pelican Point Pit - Saratoga Springs, UT	Xeriscape Phase V
Rock Mulch – South Town Cobble (cobble)	2-4"	Tan	Utah Landscaping Rock (435) 623-2332 Nephi Pit - Nephi, UT	Xeriscape Phase V, Xeriscape Phase VIII
Rock Mulch – Bronze Creekblend (cobble)	2-4"	Red/Tan	wedorox.com	Xeriscape Phase IV, Xeriscape Phase V, Xeriscape Phase VII
Rock Mulch - Geneva Cobble (cobble)	2-4"	Red/Tan	Geneva Rock (801) 281-7900 Geneva Point West Pit - Bluffdale, UT	Xeriscape Phase VI, Xeriscape Phase VIII, Xeriscape Phase IX
Rock Mulch - Geneva Cobble (cobble)	2-4"	Red/Tan	Geneva Rock (801) 281-7900 Geneva Point West Pit - Bluffdale, UT	Xeriscape Phase VI, Xeriscape Phase VIII, Xeriscape Phase IX
Rock Mulch – Nephi Cobble (cobble)	3-8"	Tan	Staker Parson (801) 731-1111 Nephi Pit - Nephi, UT	Xeriscape Phase VI
Rock Mulch - Pastel Riverbed (cobble)	8-24"	Tan	wedorox.com	Xeriscape Phase III, Xeriscape Phase IV
Accent Boulder - Desert Cinnamon	3-5'	Red	wedorox.com	Xeriscape Phase III-IX, Alder Plaza, Xeriscape South City North Phase
Flagstone – Cherokee (fractured)	3"-thick	Red	American Stone (385) 900-1492 Heber City Pit - Heber City, UT	Xeriscape Phase V, Xeriscape Phase VI, Xeriscape Phase VIII, Xeriscape Phase IX
Colored Concrete Paving		Gray	Davis Colors #8084 (coal)	Alder Plaza
Stone Dust Paving – #4 bedding sand	>3/8"	Tan	Staker Parson (801) 409-9500 Beef Hollow Quarry - Bluffdale, UT	Xeriscape South City North Phase

XIX. Glossary of Terms – SLCC Grounds Specification and Preparations Manual

- **Amendments (Soil Amendments)** – Organic or inorganic materials (e.g., compost, sulfur, peat moss) added to soil to improve fertility, structure, drainage, or pH balance.
- **Bubbler** – A low-flow irrigation device that delivers water directly to the root zone of trees and shrubs, minimizing surface evaporation.
- **Compost** – Decomposed organic matter used to improve soil structure, fertility, and microbial activity.

- **Controller (WeatherTRAK ET Pro3)** – An irrigation controller that adjusts watering schedules based on real-time weather data to improve water efficiency.
- **Culinary Water** – Treated potable water from municipal systems, sometimes used for irrigation purposes.
- **Cut/Fill Grading** – The process of reshaping land by cutting (removing) or filling (adding) soil to achieve desired elevations and slopes.
- **Drip Irrigation** – A water-efficient irrigation method that delivers water directly to the plant's root zone through emitters or tubing.
- **Erosion Control** – Practices such as silt fences, wattles, hydroseeding, or riprap used to prevent soil displacement due to wind, water, or construction activities.
- **Hydrozone** – A landscape area where plants with similar water needs are grouped together to improve irrigation efficiency.
- **Infiltration Rate** – The speed at which water enters the soil, influenced by soil texture and compaction.
- **Irrigation Zone** – A designated area within an irrigation system controlled by one valve, designed to water specific plant groups.
- **Loam** – Soil composed of a balanced mixture of sand, silt, and clay, ideal for plant growth.
- **Mulch** – Organic or inorganic material applied to soil surfaces to retain moisture, reduce weeds, and regulate soil temperature.
- **Native Plants** – Plant species that occur naturally in Utah and are adapted to the local climate and soil conditions.
- **Non-Potable Water** – Water is not suitable for drinking but is often used for irrigation (e.g., canal water, reclaimed water).
- **Overseeding** – The practice of spreading grass seed over existing turf to improve density, repair bare spots, or introduce improved grass varieties.
- **Perennials** – Plants that live for multiple growing seasons, typically flowering and returning each year.
- **pH (Soil pH)** – A measure of soil acidity or alkalinity, with most landscape plants preferring a range of 6.0–7.0.
- **Pop-Up Spray Head** – A type of sprinkler head that rises above ground when pressurized to spray water over turf areas.
- **Rhizomatous Tall Fescue (RTF)** – A turfgrass variety that spreads via underground stems (rhizomes), providing self-repairing and dense lawn coverage.
- **Silt Fence** – A temporary sediment control device used to trap soil during construction and prevent runoff into storm drains.
- **Soil Compaction** – The compression of soil particles that reduces pore space, limiting water infiltration and root growth.
- **Starter Fertilizer** – A nutrient-rich fertilizer applied at planting to promote root establishment and early plant growth.
- **Subsurface Drainage** – Underground drainage system (e.g., French drains) designed to remove excess water from poorly draining soils.
- **Topdressing** – The application of a thin layer of soil, compost, or sand over turf to improve soil quality and smooth the surface.
- **Xeriscaping** – A landscaping approach that uses drought-tolerant plants, efficient irrigation, and minimal turf to conserve water.

XX. REFERENCES

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