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*22 52 00.01 – Domestic Water Heaters – Steam-Fired

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*23 07 13 – Duct Insulation
23 07 19 – HVAC Piping Insulation
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*23 21 13 – Hydronic Piping
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23 22 13 – Steam & Condensate Heating Piping
23 22 16 – Steam & Condensate Heating Piping Specialties
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23 52 00 – Heating Boilers
23 64 16.13 – Air-Cooled Water Chillers
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23 65 00 – Cooling Towers
23 73 00 – Central-Station Air-Handling Units
23 74 00 – Packaged Outdoor HVAC Equipment
23 81 26 – Split-System Air Conditioners
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26 05 19 – Low-Voltage Electrical Power Conductors & Cables
26 05 26 – Grounding & Bonding for Electrical Systems
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26 51 00 – Interior Lighting
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27 05 26 – Grounding & Bonding for Communication Systems
27 05 29 – Hangers & Supports for Communications Systems
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27 13 23 – Communications Optical Fiber Backbone Cabling
27 13 23.13 – Communications Optical Fiber Splicing & Terminations
27 13 33 – Communications Coaxial Backbone Cabling
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31 00 00 – General Earthwork Requirements
31 23 16.26 – Rock Removal – Rock Blasting

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33 00 00 – General Utilities Requirements
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33 12 13.13 – Water Supply Backflow Preventer Assemblies
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Appendices
*Appendix A – UGA Standard Details
*Appendix B – UGA Standard Control Drawings

Office of University Architects
for Facilities Planning
UNIVERSITY OF GEORGIA

UGA DESIGN & CONSTRUCTION
SUPPLEMENTAL GENERAL REQUIREMENTS & STANDARDS
CHANGE LOG
(revisions from August 29, 2025 version to July 1, 2026)

Table of Contents

- Added reference for newly created sections:
    - 23 05 33 – Heat Tracing for HVAC Piping
    - 28 40 00 – Gas Detection and Alarm

00 00 02 – Terms

- Revised "Office of Fire Safety" to "Office of Fire and Life Safety. Note this revision has been made in all instances throughout the document.

00 00 03 – Modifications to general Requirements of BOR Contracts

- 1.E.i: Revised "…at least one person installing…" to "…at least one person in the company installing…"
- 1.E.ii: Revised "…at least one person installing…" to "…at least one person in the company installing…"
- 1.E.iii: Revised "…at least one person installing…" to "…at least one person in the company installing…"

00 31 31.14 – Seismic Investigations Information

- 1.A: Updated report date to February 24, 2026

00 73 01 – Sole Source/Sole Brand

- 2.A: Removed "Closed Cell Polyurethane Spray Foam Insulation…"
- 2.H: Added "HVAC Water Treatment…"
- 2.I.i: Removed "Global Lighting Perspectives…"
- 2.I.i: Added "LUMEC L80…"
- 2J.i: Added "Architectural Area Lighting…"
- 2.M: Removed "Audio Visual Control System…"
- 2.O. Removed Security and Access Control – Legacy System…"

01 32 16 – Construction Progress Schedule

- 1.F: Added "Adequate time shall be included for hydronic flushing, passivation, and inhibitor addition as required by the project."
- 1.G: Added "The Schedule on all commissioned projects should accommodate the requirements for prefunctional checklists and functional testing (refer to UGA Standard Commissioning Specifications)"

- 1.H: Added "Schedule shall include the anticipated date of permanent electrical service connection by the serving electrical utility, including completion of all required inspections, approvals, metering installation, and authorization to energize."

01 41 26.02

- 1.J: Added "Electrical Utility – University-Owned Electrical Distribution System…"

01 41 26.03 – Permit Requirements – Construction Permits

- 1.E.a: Replaced "One copy of the "UGA Fire Safety Form 354" and two sets of drawings and specifications…" with "A digital copy of the "Plans Review Submission Form" with digital plans and specifications shall be submitted to the UGA Office of Fire and Life Safety. The form can be found at the Office of Fire and Life Safety Plans Review Submission page…"

01 41 26.06 – Dining Services

- 2.D.v: Added "Product shall be equal to Global Industrial Model: WBB872969 Genesis Smooth Pro PVC Ceiling Tile 740-00, Waterproof & Washable, 2'L X 2'W, White"

01 58 00 – UGA Campus Signage Standards

- Throughout this division: Revised "…Campus Environs Review Committee…" to "Campus Environs Advisory Group"
- 4.D.a: "Typeface…" Added …"or Merriweather Regular…"
- 4.E: Added "Exterior Space Naming Recognition"
  - 4.E.i: Added "Exterior named spaces shall not have any accompanying exterior or interior donor recognition plaque.

01 58 13 – Temporary Project Signage

- 1.B: Added "OUA has a standard template for construction signage. Contractors shall work with their designated project manager to fill the template and develop draft signage for approval prior to printing and fabrication…"

01 74 19 – Construction Waste Management & Disposal

- 1.B: Added Definitions for "construction waste, disposal, diversion, diversion rate, recycle, salvage, and reuse."
- 1.C: Added "…The University of Georgia aims to achieve a minimum end-of-Project Diversion rate of at least sixty-five percent (65%) by weight of total nonhazardous solid waste generated by the work. At the Project Manager's discretion, small Projects may be exempt from this Diversion goal. Confirm exemption with Project Manager prior to or during Pre-Construction meeting…"
- 1.E: Added "…Contractor should consult with Project Manager on items to be salvaged and/or reused with the Project. Care should be taken to preserve the existing condition of all materials

designated for salvage or reuse. If the Contractor believes that recycling, salvage, or reuse of any of these materials is impractical, the Contractor should inform the Project Manager before commencement of construction and keep a record all materials then sent to a landfill. The Project Manager can provide assistance to the Contractor in identifying markets for diversion upon request. A partial list of waste diversion vendors is included at the end of this section…"

- 1.H: Added "At Material Completion, the Contractor must submit a Closeout Waste Management Report which includes separation, hauling, and recycling procedures. The Report shall be submitted to the Project Manager with the total quantities of each waste material and their diversion methods (reuse, salvage, recycle, or landfill) so that it provides documentation in a single source of waste management performance on the Project."
- 3.A: Revised Execution to include the new "Project Waste Management Plan", and "Closeout Waste Management Report Templates"

01 77 00 – Project Closeout

- 1.E.i: Added "Closeout submittals shall follow the file naming and structure detailed throughout this section. A reference UGA standard closeout file template .zip file shall be provided by the project manager for use in formatting closeout submittal files."

01 91 13 – General Commissioning Requirements

- 1.B: Added " The University of Georgia (UGA) is committed to applying the Commissioning (Cx) Process to all new construction and major renovation projects for its campus buildings and its energy and utility infrastructure. This section of the Design and Construction Standards is intended to provide guidance and information regarding the minimum expectations and requirements of the Cx process at UGA. The primary goal of this section is to inform the A/E team of their Cx related responsibilities, as well as those of the various members of the Cx team throughout the project."
- 1.C: Added "The Cx Process is a systematic procedure for ensuring that systems operate and perform according to the Owner's Project Requirements (OPR, for new construction and certain major renovation projects), or the Current Facility Requirement (CFR, for renovation projects). The Cx process oversees, verifies, and documents that the facility and its systems are planned, designed, installed, tested, and turned over as required to meet the OPR/CFR and the project contract drawing and specification documents. The Commissioning process does not take away from or reduce the responsibility of the Design Professional or Contractor to provide a finished and fully functioning product. Specific objectives of commissioning are as follows:…"
- 1.E: Added "Management: At UGA, the Cx Consultant, (either CxA, CCP, BCx Consultant qualified, or equivalent) will be contracted directly to the University, or through the Georgia State Finance and Investment Commission (GSFIC). The Cx Consultant will be independent of the design and construction teams. The Cx Consultant will primarily report directly to UGA's designated Project Manager (PM). The PM will coordinate with the project appropriate UGA Engineering personnel, the Director of Capital Engineering and Infrastructure within the Office

of the University Architects (OUA), or UGA in-house Commissioning Department (cx@fmd.uga.edu) within the Office of Utility and Energy Management (UEM)."

- 1.F: Added "…Coordination: Each contractor and sub-contractor of the Cx Team shall assign one individual to be the primary point of contact for the Cx process. Expected roles for the Cx Team are provided by phase at the end of this section…"
- 1.H: Revised Systems to commission:…"
- 1.I: Added " Sustainability The Cx Consultant's shall confirm with the PM, project specific energy efficiency requirements. The SoW will adhere to and generally exceed appropriate energy-efficiency rating systems, The Georgia Peach Green Building Rating System, USGBC LEED™ requirements (EAp Fundamental Commissioning and Verification, EAc Enhanced Commissioning), Green Globes, or equivalent."
- 1.J: Revised "Abbreviations:…"

07 41 20 – Steel Standing Seam Sheet Metal Roofing

- 2.A.vii: Added "Manufacturer approved snow guards shall be installed on all standing seam metal roofs"

08 71 00 – Door Hardware

- 2.D.i.e: added "Best QDC 100 Series" to Closers and Door Control Devices

09 00 00.1 – Custodial Storage

- 1.B.v.a.vi: Revised "…Maytag Washing Machine…" to "…Whirlpool WFW560CHW…" Washing Machine
- 1.B.v.a.vii Revised "...Maytag Drying Machine…" to "…Whirlpool WED560LHW…" Drying Machine

09 50 00 – Ceilings

- 1.B.iv: Added "Domestic water valves installed above ceiling shall be indicated on the ceiling grid or access panels below by marking the location with a blue circular sticker."
- 1.C: Added "Ceilings in restrooms should be acoustical ceiling tile, exceptions for gypsum ceilings are to be coordinated with the project manager."

09 91 23 – Interior Painting

- 2.B.i: Added "Paint applied to doors and frames shall be acrylic semi-gloss paint with a tested pencil hardness of 4H or greater."

10 28 00 – Toilet, Bath, and Laundry Accessories

- 2.B.i: Revised 2 Roll Toilet Tissue Dispenser to "…Tork OptiCore Twin Toilet Paper Roll Dispenser…"
- 2.B.ii: Revised 3 Roll Toilet Tissue Dispenser to "…Tork OptiCore 3-Roll Toilet Paper Roll Dispenser…"

14 20 00 – Elevators

- 3.D.i: Revised to include "The first year of maintenance on all new elevators shall be provided by the installing contractor. For elevator renovations contractors shall confirm maintenance service requirements with their project manager."
- 3.D.ii: Revised to include "All annual elevator maintenance will be performed by the UGA elevator maintenance contractor under an already established contract held directly by UGA FMD. No maintenance responsibilities are required to be included otherwise."

21 00 00 – General Fire Suppression Requirements

- C: Added "Tamper switches shall not be installed on PIVs and OS&Y valves. Locks and or chains will be installed in lieu of tamper switches."
- D: Added "Parking Decks requiring fire suppression shall be dry pipe Nitrogen Generation Corrosion Inhibiting System. All other facilities may use compressed air dry pipe fire suppression systems…"
- E: Added "Fire Protection/Sprinkler system piping, fittings, appurtenances shall be manufactured in the United States of America, products manufactured abroad will not be accepted."

22 00 00 – General Plumbing Requirements

- 1.E: Plumbing drawings shall be provided for plumbing services only and shall not be combined with other disciplines.
- 1.F.Vii: Added "Valves installed above ceiling shall be indicated on the ceiling grid below by marking the location with a blue circular sticker."
- 1.F.viii: Added "…Plastic balancing valves are prohibited."

22 07 00 – Plumbing Insulation

- 3.A: Added "Pressure piping exposed to the elements, or in unconditioned spaces shall be heat trace."

22 10 00 – Plumbing Piping

- 2.B: Revised "All sanitary mains leaving the building and under the slab (4" and larger) shall be videotaped at the end of the warranty period." to "at the end of construction."

22 15 13 – Compressed Air Piping

- 2.A: Added "…ProPress fittings are not permitted for use on compressed air piping."

22 45 00 – Emergency Plumbing Fixtures

- 2.A: Added "WaterSaver SSBF2150" as an equal too emergency shower option

22 52 00.01 – Domestic Water Heaters – Steam Fired

- 2.C.: Basis of Design Added "Patterson-Kelly Compact"

23 00 00 – General Mechanical Requirements (HVAC)

- 1.D.xix: Added "…Refer to Appendix B, UGA Standard Sequences of Operation."
- 1.D.xxii: Added"… For new projects and projects involving a renovation valued at 50% or more of the building value, the mechanical design shall be drawn in 3-D utilizing Revit or compatible software. Exemptions shall be approved by the UGA PM
- 1.D.xl: Added "Design shall achieve space temperature and/or relative humidities as follows; refer to division 01 81 00 for outdoor design conditions."

23 05 23 – General-Duty Valves for HVAC Piping

- All valves installed above ceiling shall be indicated with a green circular sticker. Stickers should be placed on the ceiling grid for ACT and on access panels in gypsum ceilings.

23 05 33 – Heat Tracing for HVAC Piping [*Entire section was newly added in this version*]

23 07 13 – Duct Insulation

- 2.D: Added "…Perforated duct liner is prohibited."

23 09 23 – Building Automation and Temperature Control System (BAS)

- 1.G: Added "…Division 23 contractor installed…"
- 1.G: Revised "…Dwyer Photohelic…" to "…Veris and Senva."
- 1.H: Added "Review ALC Metering Standards with the project manager for updated metering requirements."
- 1.J: Added "All projects shall include a live graphics review led by the controls contractor to include FMD/OUA/Cx/DP personnel.
    i. For more complex projects— as determined during the design phase by UGA, ALC, and Cx— a virtual simulation shall be included in the commissioning (Cx) specifications.
        The following requirements shall apply:
        1) A virtual simulation of the Building Automation System (BAS) shall be conducted no less than thirty (30) days prior to on-site functional performance testing.
        2) This exercise shall simulate the functional performance test procedures for major equipment in accordance with the approved control sequences of operation.
        3) The simulation shall be limited to functions that can be fully executed virtually within the control system programming and

available graphics, without reliance on physical hardware such as relays, control valves, dampers, or similar devices.

23 21 13 – Hydronic Piping

- 3.H: Added "All valves installed above ceiling shall be indicated with a green circular sticker. Stickers should be placed on the ceiling grid for ACT and on access panels in gypsum ceilings.

23 21 23 – Hydronic Pumps

- 3.H: Added "Pumps shall be labeled with the pump name/number. Tag shall be a metal tag mounted to the base, not to be insulated over."

23 81 29 – Variable Refrigerant Flow (VRF) HVAC Systems

- 3.B: Added "B. Technicians working on VRF systems shall be certified to perform work on the specific make and model of VRF systems to be installed. and shall maintain current VRF installation certifications on site at all times…"
- 3.E: Added "…VRF systems shall be locked out and protected from dust until final clean with a dust-free environment."

26 00 00 – General Electrical Requirements

- 1.C: Added "All electrical receptacles shall be labeled with the corresponding panel and circuit number. Labels shall be clear or white with black lettering for standard circuits and clear or white with red lettering for emergency power circuits. Refer to section 26 05 53 – Identification for Electrical Devices."
- 1.D: Added "Emergency power circuits shall have red receptacles"
- 1.E: Added "Dedicated circuits for high performance workstations shall have blue receptacles"
- 1.H.i: Added "…If room use requires additional outlets, horizontal spacing of 8 feet may be used."
- 1.I.i: Added "Any work involving connection to, modification of, or extension of the University of Georgia-owned electrical distribution system shall be coordinated with and approved by the University of Georgia FMD/UEM Representatives in accordance with Division 26 requirements…"
- 1.J.ii: Added "Panelboards shall be labeled in accordance with 26 05 53 Identification for Electrical Systems."
- 1.K: Added "Prior to concrete pour," and installation of electrical appurtenances, contractor shall coordinate a meeting at the project site involving the electrical subcontractor,…"

26 05 33.13 – Conduit for Electrical Systems

- 2.G: Revised "Set-screw fittings are not allowed…" to "Cast set-screw fittings are not allowed for conduit connections. Steel set-screw conduit fittings may be used for EMT and IMC conduits in Dry Locations. All galvanized, rigid steel conduit connections shall be threaded."

26 24 16 – Panelboards

- 1.I: Added "Branch circuits should typically be fed from electrical panels located on the immediate floor. Design Professional should coordinate with OUA & FMD representatives for approval to feed significant number of circuits from an electrical panel on adjacent floors."

26 32 00 – Packaged Generator Assemblies

- 1.E: Added "The design professional and engineer of record shall review product data for the selected packaged generator assembly to confirm previous, current, and future design phases are compatible with and meet the requirements of the selected manufacturer and model of generator.
- 2.H: Added "Automatic transfer switch (ATS), shall include current transformers around loas side conductors. ATS shall be able to output peak demand (watts or Amps) with ability to clear/reset stored value."
- 2.I: Added "New buildings shall be equipped with Temporary Generator Connection Cabinet equipment for a Temporary Generator for maintenance or repair of the Permanent Generator in compliance with NEC 700.4(F)."

26 56 13 – Lighting Poles and Standards

- 1.B: Revised "concrete pole bases shall extend a maximum of 3 inches above finished grade in landscaped areas…" to "concrete pole bases shall extend 3 inches above finished grade in landscaped areas, and 1 inch above finished grade in hardscape areas."
- 2.B.E1.a: Updated spec sheets for existing standard Lumec LED Fixture and Pole
- 2.B.E1.b: Added spec sheets for new GE LED Fixture and Pole
- 2.C: Revised "Concrete pole bases shall extend minimum 2 inches above finished grade in hardscaped areas, and minimum 3 inches above finished grade in landscaped areas." To Concrete pole bases shall extend 1 inch above finished grade in hardscaped areas, and 3 inches above finished grade in landscaped areas."

27 15 00 – Communications Horizontal Cabling

- 1.I: Added "When cabling is installed in stubbed out conduit that transverses a fire rated partition, the conduit shall be sealed after cable installation with Hilti CP 618 Firestop Putty."

27 41 00 – General Audio-Video Systems Requirements

- 2.A: Revised entirety of "A. Audio-Visual Cabling Specifications"

27 41 00.01 – Audio-Visual Control System

- 3.A: Revised the link for the Example Extron touch panel file to "This example Extron touch panel files "CR7v8r3.zip" is available for download at https://ctl.uga.edu/wp-content/uploads/20250505ExampleTouchpanels_CR7v8r3.zip

- 3.H.v: Added “Flashing state 2 "no signal" notifications on source buttons when the connected device is off or not connected properly. So, source buttons have an additional state 2 with a grey background. Which should flash periodically only for that source which is currently selected. So, if there is no signal on that selected source then ... it should alternate from state 1 with blue background and then state 2 with grey background.”
- 3.I.v: Added “Flashing state 2 "no signal" notifications on source buttons when the connected device is off or not connected properly. So, source buttons have an additional state 2 with a grey background. Which should flash periodically only for that source which is currently selected. So, if there is no signal on that selected source then ... it should alternate from state 1 with blue background and then state 2 with a grey background.”

28 40 00 – Gas Detection and Alarm [*Entire section was newly added in this version*]

Office of University Architects
for Facilities Planning
UNIVERSITY OF GEORGIA

THE UNIVERSITY OF GEORGIA
DESIGN & CONSTRUCTION
SUPPLEMENTAL GENERAL REQUIREMENTS & STANDARDS
INTRODUCTION

The design and construction or renovation of a facility for the University of Georgia (UGA) is a complex endeavor. Design Professionals and Contractors that work with UGA for the first time often find it challenging to navigate the system and to understand all of the requirements and nuances related to construction on a UGA campus.

The UGA Design & Construction Supplement General Requirement & Standards (Standards) document has been compiled to provide one location and resource for UGA Standards. The Office of University Architects for Facilities Planning (OUA) and the Facilities Management Division are the two main UGA departments that administer construction related projects. Other departments with critical roles in the execution of projects include Enterprise Information Technology Services, Environmental Safety Division, University Housing, and Real Estate and Space Management. The design, construction, and renovation requirements for all of these departments are included in the Standards. Since OUA interfaces with all of these departments and is responsible for the major construction and renovation projects, OUA leads the coordination and maintenance of the Standards.

There are a number of UGA units with facilities located outside of Clarke County that often have needs for performing facility maintenance, renovations, or new construction projects. These include, but are not limited to the College of Agricultural and Environmental Sciences “B” unit facilities, including 4-H and Extension sites, Warnell School of Forestry & Natural Resources “B” unit facilities, Skidaway Institute of Oceanography, the Marine Extension and Georgia Sea Grant, University of Georgia Marine Institute, the Griffin and Tifton campuses, and Wormsloe. The design, construction, and renovation requirements for all of these units are not yet fully reflected in the Standards and Design Professionals and Contractor shall discuss applicability and submit for variances per Section 00 00 05 Variance Requirements & Form on a project by project basis.

The first section, Supplemental General Requirements, focuses on procedural requirements and includes information on Building Information Modeling (BIM). The next section discusses and illustrates planning and design principles. This is followed by design and construction information which is organized around specification section numbers. The content in the Standards are not full specifications but contain pertinent information related to both design and construction that shall be included in the Project.

This is not a stand-alone document and procedure manual. All of the Board of Regents of the University System of Georgia (BOR) requirements remain applicable. The purpose of this Standards is to document specific requirements to UGA campuses and this information supplements the BOR requirements.

All Design Professionals and Contractors that contract on behalf of the Board of Regents of the University System of Georgia with UGA are required to be in conformance with the Standards. As the Standards is updated there will be multiple dated versions of the Standards.

As each project is unique, not every requirement in the Standards is appropriate for every project. For situations when the Design Professional and/or Contractor do not feel adherence to the Standards is appropriate, a request for a variance can be submitted to the Project Manager.

The Standards will continue to develop over time and input is always welcome. Please forward any comments to: designstandards@uga.edu

00 00 02
TERMS

Air-Conditioning, Heating, and Refrigeration Institute (AHRI)

Athens-Clarke County (ACC)

Bid (or Base Bid)

BIM (Building Information Modeling)

Board of Regents of the University System of Georgia (Board of Regents or BOR)

Campus

The term refers to the University of Georgia's main campus and Health Sciences Campus in Athens, Georgia as well as all other Board of Regents UGA Property.

Center for Teaching and Learning (CTL)

Client

For OUA managed projects, OUA is the Design Professional or Contractor's Client. For FMD managed projects, FMD is the Design Professional or Contractor's Client. The End-User is not the Design Professional or the Contractor's Client.

Commissioning Provider (CxP)

Contractor

The term "Contractor" means: General Contractor (GC) or Construction Manager (CM) or Design Builder (DB).

Construction Contingency

This term shall also mean Contractor Contingency.

Design Bid Build (DBB)

Design - Build and/or Design – Builder (DB)

This term shall also mean Contractor.

Design & Construction Standards (Standards)

Design Professional (DP)

The term "Design Professional" includes: Architects, Engineers, Surveyors, Designers, General Consultants, and other Consultants.

Electronically Commutated Motor (ECM)

End-User (Tenant)

The End-User is a person or entity that will occupy the Project at completion of the Work. The End-User is transient in nature and it is not unusual for the End-Users to change throughout the project. The End-User has no contractual relationship with the Contractor or Design Professional. Examples of End-Users include: Academic Units, UGA Departments, and the Dean or other Personnel assigned by the Dean.

Energy Recovery Unit or **Ventilator (ERU** or **ERV)**

Enterprise Information Technology Services (EITS)

Environmental Safety Division (ESD)

Facilities Management Division (FMD)

General Requirements

References to General Requirements "#.#.#.#." indicates an article or section in the Board of Regents of the University System of Georgia contract.

Georgia State Finance and Investment Commission (GSFIC)

Integral Face and Bypass (IFP)

Integrated Project Delivery (IPD)

Leadership in Energy and Environmental Design (LEED)

Manual Volume Damper (MVD)

Net Pressure Suction Head Available or **Required (NPSHa** or **NPSHr)**

Noise Criterion (NC)

Office of the University Architects for Facilities Planning (OUA)

Overhead Costs and Expenses (General Conditions)

Owner's Representative

For OUA managed projects, the Owner's Representative, UGA, has delegated OUA as the Using Agency's Representative. For FMD managed projects, the Owner's Representative, UGA, has delegated FMD as the Using Agency's Representative.

Owner's Testing Agency

Pressure Reducing/Regulating Valve (PRV)

Project Manager (Owner's Representative)

Project Manager means an OUA or an FMD Project Manager; it is not referring to the Contractor's Project Manager.

State Construction Manual (SCM)

UGA Office of Fire and Life Safety (Office of Fire and Life Safety)

University of Georgia (UGA)

Using Agency's Representative

For OUA managed projects, the Using Agency, UGA, has delegated OUA as the Using Agency's Representative. For FMD managed projects, the Using Agency, UGA, has delegated FMD as the Using Agency's Representative.

Utility and Energy Management (UEM)

Office of Utility and Energy Management within UGA FMD

Welder Performance Qualification (WPQ)

00 00 03
MODIFICATIONS TO GENERAL REQUIREMENTS OF BOR CONTRACTS

1. **GENERAL**
   A. Design Professional Services Requirements: The BOR Design Professional contracts section title 'Services Requirements' shall have the same meaning section title as 'General Requirement'.
   B. Copies of Notices: For General Requirements 1.1.5.2, in addition to the Owner and the Owner's Representative, any notice, request, or demand filed by the Contractor shall also be furnished to: Construction Buyer, Senior Procurement Specialist, University of Georgia Procurement Office, 0301A Business Services, 424 E. Broad Street, Athens, GA 30602.
   C. Copies of Contract Documents to Contractor: Replace General Requirements 1.1.7.2 with: "Without charge to the Contractor, the Design Professional shall furnish to the Contractor one set of completed Contract Documents in hardcopy, one set of electronic background and floor and reflected ceiling plan drawings, if requested, one copy in read-only electronic format. Contractor shall pay for any additional requested sets and shall include cost in the Contractor Overhead Cost."
   D. Safety & Security**:** The costs for all references in the University of Georgia Special Conditions for safety & security shall be included in the Contractor Overhead Cost. This includes, but is not limited to, fencing, barricades, traffic control and temporary signage.
   E. State of Georgia Licensed Subcontractors:
      i. For any mechanical work on this Project, at least one person in the company installing mechanical work must have a valid and current certification of registration issued by the Georgia State Construction Industry Licensing Board to engage in prescribed mechanical activities.
      ii. For any electrical work on this Project, at least one person in the company installing electrical work must have a valid and current certification of registration issued by the Georgia State Construction Industry Licensing Board to engage in prescribed electrical activities.
      iii. For any plumbing work on this Project, at least one person in the company installing plumbing work must have a valid and current certification of registration issued by the Georgia State Construction Industry Licensing Board to engage in prescribed plumbing activities.
      iv. Utility Contractors must be State of Georgia Licensed and comply with Georgia Code 43-14, HB 1300 and for projects in Athens Clarke County shall be on the Athens Clarke County approved list of utility Contractors.
      v. Certified Welders: For any welding work on this Project, all welders installing welding work must have a valid and current year certification of registration issued by the Georgia State Construction Industry Licensing Board to engage in prescribed welding activities. Refer to Section 01 35 13.02 Special Project Procedures – Roofing & Hot Work

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   F. Fire Marshal Inspections: For General Requirements replace 3.6.4.3.1 in its entirety with the following: "The State Fire Marshal and the University of Georgia Office of Fire and Life Safety may make inspections at any time. It shall be the responsibility of the Contractor to request an inspection at 80% percent completion and at 100% completion and to give notice when all items on the 100% inspection report have been completed. Written

requests for inspections shall be made to the Owner's Representative and shall not be made directly to the State Fire Marshal and/or the University of Georgia Office of Fire and Life Safety."

G. Office for Contract Compliance Specialist (CCS): Delete General Requirements 1.7.5.

H. 24 Hour Emergency Contact: Prior to commencing work on site the Contractor shall forward to the Owner's Representative the 24-hour contact information for the Project site. If the information changes at any time during the Contract, the Contractor shall immediately provide updated information. This contact information will be shared with the UGA Police Department and other campus units.

I. Cleaning**:** For General Requirements 3.1.13.1, add following "Periodically during the course of the Work, and at least daily, all debris, trash or unsuitable materials resulting from construction removed from Owner's property shall be disposed of legally in accordance with all applicable Federal, State and Local laws and codes." Contractor shall include associated cleaning costs in the Contractor Overhead Cost. Debris shall not be placed in University of Georgia trash containers but instead shall be placed in dumpsters or other facilities provided by the Contractor for this purpose.

J. Read Only Electronic Version: Any references to 'read-only electronic version' in the General Requirements and/or in the University of Georgia Special Conditions shall mean the in the latest version of the software format by Adobe and shall be a '.pdf' file format.

K. BIM Model & Instruments of Service: The BIM model constitutes an Instrument of Service as defined by the General Requirements for the Design Professional Contract (CM) 2.1.2.1 (2.1.4.1 in Design Build (DB) Contract; 2.1.2.1 in Design Bid-Build (DBB) Contract). Therefore, all items pertaining to Instruments of Service as set forth in section 2.1.2 in CM Contract (2.1.4 in DB Contract; 2.1.2 in DBB Contract) shall apply to the model.

L. Electronic Submittals: For General Requirements 2.2.5.2, 2.2.5.2 (CM), and 2.2.3.2 (GC for DBB) electronic read-only submittals are acceptable. The Contractor and the Design Professional shall stamp and sign the submittals, then scan and distribute the documents including electronic copies to the Owner's Representative if requested. At the end of the Project, the Contractor shall furnish electronic and hard copies per UGA Design & Construction Standards Section 01 77 00 Project Closeout.

M. Hard Copy Submittals: For General Requirements 2.2.5.2, 2.2.5.2 (CM), and 2.2.3.2 (GC for DBB) if electronic submittals are not used for this Project, then the Contractor shall submit four (4) hard copies of all required submittals to the Design Professional. The approved hard copies shall be distributed with 1 hard copy to the Design Professional; 1 copy to the Owner's Representative; and 2 copies to Contractor. At the end of the Project the Contractor shall furnish electronic and hard copies per UGA Design & Construction Standards Section 01 77 00 Project Closeout.

N. Operations and Maintenance Data and Instructions and Training: In addition to the General Requirements 6.4.1.2.4, the Contractor shall provide the Owner's Representative with a read-only electronic version and hardcopies of all written materials related to operations and maintenance per UGA Design & Construction Special Conditions Section 01 77 00 Project Closeout. Training shall be completed prior to Material Completion of the Project.

O. Marked-up Construction Documents: For General Requirements 2.2.2.3 (CM), 2.3.2.3 (DB), and 6.4.1.2.3, in addition to the Design Professional, the Contractor shall also provide the Owner's Representative with sets of Marked-up (As-Built) Construction Documents as well

as read-only electronic versions of the Marked-up Construction Documents per UGA Design & Construction Special Conditions Section 01 77 00 Project Closeout.

P. Record Drawings and Final Documents (Record Documents): In General Requirements 2.2.14.1, 2.2.14.1 (DP for CM), 2.2.11 (DP for DBB), 2.1.20.1 (DB), replace in its entirety with "The Design Professional shall, upon final completion of the Project, revise the original drawings and specifications based upon documents incorporated into Change Orders, additional sketches, answered RFI's and marked up documents provided by the Contractor to show the Project 'as-built". The Design Professional shall furnish and deliver to the Owner after the entire work is completed, and not later than sixty (60) calendar days after execution of its Certificate of Final Completion, the Record Drawings. (Record Drawings and Final Documents shall reflect all changes caused by addenda, field changes, change orders or observed changes by the Design Professional, the Contractor or the Subcontractor(s). The Design Professional shall furnish to the Owner, at no additional costs, hard copies and fully conformed and revised electronic copies per UGA Design & Construction Standards Section 01 77 00 Project Closeout. Based upon additional information provided by the Contractor, the Record Drawings and Final Documents (collectively the "Record Documents") shall show the Design Professional's understanding of the locations of all utility lines and shall be altered to conform to all changes made in the building during its construction."

Q. Required Minimum Combined Primary Liability and Excess Umbrella Liability and Limits: For General Requirements 1.5.3.3.5 the umbrella coverage maybe increased in Owner's sole discretion for Projects that involve hot work. Refer to Section 01 35 13. 02 Special Project Procedures – Roofing & Hot Work.

00 00 04
ENVIRONMENTAL

1. **GENERAL**
   A. Clean Water Act, Georgia Water Quality Control Act, and Georgia Soil Erosion and Sedimentation Act:
      i. This Project is located within a watershed that may drain into waters of the United States or the State of Georgia. Storm water inlets and storm drainage associated with the Project may drain directly into waters of the United States or the State of Georgia or lands within the State of Georgia. All such waters and lands shall be protected from the discharge of any pollutant. The Contractor shall ensure that all construction activities conducted on the Project site comply with all applicable provisions of the Clean Water Act, the Georgia Water Quality Control Act, the Georgia Soil Erosion and Sedimentation Act, and any rules, regulations, local ordinances and permits promulgated or issued thereunder. The scope of this Project may require coverage under the NPDES Storm Water Discharges Associated with Construction Activities permit and may require a Land Disturbance Activity permit issued by a local issuing authority.
      ii. The Contractor shall develop, implement, and maintain a site specific spill response plan for the Project that addresses loading and unloading, storage, and usage of containers and materials with the potential for spillage, leakage, or other discharges and a site specific erosion, sedimentation, and pollution control plan. The Contractor shall maintain environmental spill kits on site at all times and shall ensure that site personnel are properly and adequately trained on the use of the spill kits.
      iii. The Contractor shall not conduct any construction activities within a twenty-five (25) foot buffer along the banks of any waters of the State of Georgia, unless a variance for this Project has been issued by the Georgia Environmental Protection Division.
      iv. The Contractor shall not conduct any construction activities within a fifty (50) foot buffer along the banks of any waters of the State of Georgia that are classified as trout waters, unless a variance for this Project has been issued by the Georgia Environmental Protection Division.
      v. The Contractor shall employ Best Management Practices (BMPs) which are consistent with and no less stringent than those practices contained in the most current “Manual for Erosion and Sediment Control in Georgia” published by the State Soil and Water Commission. If BMPs are not functioning as designed, the Contractor shall immediately notify the Owner’s Representative and the Design Professional verbally and in writing. If the BMPs required by the Contract documents are more stringent than those required by the most current “Manual for Erosion and Sediment Control in Georgia”, then the requirements of the Contract shall apply.
      vi. The Contractor site superintendent must have a current Georgia Soil and Water Conservation Commission Level 1A Certification. An individual with a current Georgia Soil and Water Conservation Commission Level 1A Certification must be on site at all times that land disturbing activities are being performed.

vii. If the Project requires a Land Disturbance Activity Permit, prior to starting any land disturbing activities, the Contractor shall obtain the necessary Land Disturbing Activity Permit from the Local Issuing Authority and shall identify itself as the 24 hour contact. The Contractor shall comply with all requirements of the Local Issuing Authority.

viii. If the Project requires coverage under the NPDES Storm Water Discharges Associated with Construction Activities Permit, the Contractor shall:

a. Sign the NPDES permit Notice of Intent promptly upon request of the Owner or Design Professional and prior to beginning any construction activity on site. The Contractor and Owner shall be joint Primary Permittees. As the entity that has the primary day to day operational control of those activities at the construction site necessary to ensure compliance with Erosion, Sedimentation and Pollution Control Plan requirements and permit conditions, the Contractor shall be the Operator;

b. **E**nsure complete implementation of the Erosion Sedimentation & Pollution Control Plan (Plan).

c. Within 24 hours of the installation of the initial sediment storage requirements and perimeter control BMPs, the Contractor shall notify, in writing (e-mail is acceptable), the Owner's Representative and the Design Professional stating that the initial installation is complete and ready for inspection. The Design Professional who prepared the erosion, sedimentation and pollution control plan shall issue a letter of compliance or a letter listing deficiencies. The Contractor shall correct any deficiencies documented within two (2) days of receipt of that letter and shall schedule any follow-up inspections necessary to comply with the requirements of the Permit, and ensure that a letter of compliance is received from the Design Professional and placed in the site records.

d. Ensure daily inspections of vehicle entrances and exits and areas where petroleum products are used, stored, or handled are conducted and documented in a daily inspection report by Level 1A certified personnel. Daily Inspection reports must include:

1) Name of inspector
2) Date of inspection
3) Observations
4) Corrective actions taken
5) Any incidents of noncompliance
6) Signature of certified inspector
7) Where reports do not identify incidents of noncompliance, a certification that the entrances and exits and areas where petroleum products are used, stored, or handled are in compliance with the Plan and the Permit must be included
8) All daily inspection reports must be retained in the site records.

e. Maintain a daily rainfall log indicating the amount of rainfall at the site during each 24-hour period. The rainfall log must have an entry for each

twenty-four hour period from the commencement of construction until the Notice of Termination is properly submitted.

f. Maintain all records required by the Permit on site. The records shall be up to date, in chronological order and readily available for review. The records shall include at a minimum:
    1) A field set of As-Built documents indicating any revisions to the civil and erosion sedimentation and pollution control drawings. Any revision on the field set of As-Built drawings must be marked on the Contract documents and shall be signed and dated by the Engineer of record.
    2) Completed Notice of Intent (NOI) form with certified mail receipt (request from Design Professional or Owner's Representative if Contractor doesn't have a copy).
    3) Documentation of fee payment with certified mail receipt (request from Design Professional or Owner's Representative if Contractor doesn't have a copy).
    4) 7-day inspection letter of compliance from the Design Professional.
    5) Daily, weekly, and post ½-inch rain event inspection reports generated by the Contractor and/or the testing agency retained by Owner ("Owner's Testing Agency").
    6) Rainfall data.
    7) Turbidity sampling results with certified mail receipts issued by the Owner's Testing Agency (request from Design Professional or Owner's Representative if Contractor doesn't have a copy)
    8) Summary reports of inspections and violation records with certified mail receipts (request from Design Professional or Owner's Representative if Contractor doesn't have a copy). Upon signing the Notice of Termination, provide to the Project Manager an electronic scanned copy of all records a. thru h. listed above.

g. Sign NPDES General Permit Notice of Termination promptly after the Design Professional and/or the Owner's Testing Agency issue a written statement that the Project site has undergone final stabilization and that all storm water discharges associated with the construction activity that were authorized by the Permit have ceased.

B. Duty to Notify and Correcting the Work

i. The Contractor shall immediately document in the site records and notify the Owner's Representative with a phone call and in writing, of the receipt of any warnings, citations, notices of permit violations or deficiencies, and/or stop work orders received from the Local Issuing Authority and/or the Georgia Environmental Protection Division and/or the United States Environmental Protection Agency. The Contractor shall immediately provide copies of any written warnings or citations or other noncompliance notices received to the Owner's Representative. Within 12 hours of receiving any warnings or citations,

the Contractor shall inform the Owner's Representative in writing of the corrective actions that the Contractor shall implement.

ii. The Contractor shall complete corrective action within 24 hours or prior to any impending rain events, whichever is sooner, of receiving any warnings, citations, letters, e-mails, or other notices citing violations or deficiencies, from the Local Issuing Authority, the Georgia Environmental Protection Division, the United States Environmental Protection Agency, Design Professional, or the Owner's Testing Agency related to the Clean Water Act, the Georgia Water Quality Control Act, the Georgia Soil Erosion and Sedimentation Act, and/or the Land Disturbance Activities Permit or the NPDES Permit.
    a. If the appropriate corrective action is beyond the expertise of the Contractor or will involve a change in design, construction, operation, or maintenance, which has a significant effect on a BMP with a hydraulic component, the Contractor must immediately notify the Owner's Representative and the Design Professional and follow their direction for implementing the corrective action.
    b. If the appropriate corrective action is within the expertise of the Contractor and does not involve a change in design, construction, operation, or maintenance, which has a significant effect on a BMP with a hydraulic component, the Contractor shall implement the corrective action, note the change or action taken on the site Plan and have the revision on the site plan signed and dated by the Design Professional on their next visit to the site as being an acceptable and appropriate change or corrective action.

iii. The General Requirements 3.6.2 Correcting the Work is modified as follows related to a corrective action not being completed by the Contractor within 24 hours or prior to any impending rain events, whichever is sooner, of receipt of the warning, citation, or other form of documentation with deficiencies:
    a. Any warning or citation issued by the Local Issuing Authority, the Georgia Environmental Protection Division, the United States Environmental Protection Agency, or a deficiency documented in the Owner's Testing Agency's report or the Design Professional, which may be issued as an e-mail, shall serve as the Notice of Non-Compliant Work referenced in the General Requirements 3.6.2.1.
    b. The General Requirements 3.6.2.6 The Owner's Right to Correct Work shall be modified so that the 'after three days written notice' shall be replaced with 'after 24 hours or prior to any impending rain events, whichever is sooner, after written notice'.

iv. After completion of the required corrective actions, the Contractor shall contact the Owner's Representative and the entity that cited the deficiencies and request a re-inspection.

v. Any fines, penalties, or negotiated settlements resulting from the noncompliance with the Clean Water Act, the Georgia Water Quality Control Act, the Georgia Soil Erosion and Sedimentation Act, Land Disturbance Activities Permit, NPDES Permit, or any rules, regulations, local ordinances and permits promulgated or issued thereunder on the part of the Contractor or any

Subcontractor shall be paid in full by the Contractor with no cost to the Owner. The Contractor may not use Contractor Contingency or charge the Cost of the Work to pay for any fines, penalties or negotiated settlements.

C. Default and Stop Work / Terminate for Cause
   i. The issuance of a citation or other noncompliance notice by the Design Professional, United States Environmental Protection Agency, the Georgia Environmental Protection Division, or a Local Issuing Authority related to the Clean Water Act, the Georgia Water Quality Control Act, or the Georgia Soil Erosion and Sedimentation Act, Land Disturbance Activities Permit, NPDES Permit, or any rules, regulations, local ordinances or permits promulgated or issued thereunder, is sufficient cause for the Owner to stop work for the entire Project at the cost of the Contractor until the citation deficiencies are remediated to the satisfaction of the Owner. For this situation, the General Requirements 5.1.2 Owner's and Program Manager's Right to stop work is modified as follows: "The Owner and/or the Owner's Representative reserves the right, upon the issuance of a citation or other noncompliance notice by the Design Professional, United States Environmental Protection Agency, the Georgia Environmental Protection Division, or a Local Issuing Authority, to immediately stop the work of the entire Project by oral direction, at the Owner's or Owner's Representative's sole discretion, in conjunction with written notice provided to the Contractor within 24 hours. The Contractor shall be solely responsible for all costs incurred by the Contractor in connection with the stop work order including any overtime or other expenses required to achieve the Material Completion and occupancy date. The Contractor may not use Contractor Contingency to offset any costs related to the stop work order. The Contractor will not be granted a time extension for work time lost to a stop work order due to any such citation or other noncompliance notice."
   ii. Non-compliance with any applicable portion of the Clean Water Act, the Georgia Water Quality Control Act, the Georgia Soil Erosion and Sedimentation Act, the Land Disturbance Activities Permit, the NPDES Permit, or any rules, regulations, local ordinances or permits promulgated or issued thereunder, is sufficient cause for the Owner to terminate the Contract for cause per General Requirements 5.3.2 Owner's Right to Declare Default and/or Terminate Contract for Cause. The Contractor's failure to correct work for any warnings or citations within the 24 hours is sufficient cause for the Owner to terminate the Contract with cause per General Requirements 5.3.2 Owner's Right to Declare Default and/or Terminate Contract for Cause.
   iii. Contingency or charge the Cost of the Work to pay for any fines, penalties or negotiated settlements.

D. Georgia Environmental Policy Act: In accordance with Georgia state law, a Georgia Environmental Policy Act (GEPA) evaluation was completed and a determination made that the proposed Project will not have any significant adverse environmental impacts. The Contractor, in undertaking this work, becomes a steward of air, land, water, plants, animals and environmental, historical and cultural resources. As such the Contractor shall perform all work in accordance with local, state and federal rules and regulations governing the protection of these resources.

E. GEOS, the Georgia EPD Online System: All plans, improvements, and construction activities shall be compliant with the rules and regulations administered by the Georgia Environmental Protection Division Unless otherwise expressly permitted through official variance, agreement, or interpretation certified by the Owner. Any permit applications, reports, and fee payments required by the Georgia EPD shall be submitted through GEOS, the Georgia EPD Online System, a web-based portal. It is the responsibility of the Design Professional, Contractor, and/or reporting agency to ensure that all required materials are submitted to GEOS as required by law. The Owner's designated Responsible Official (RO) will review and certify receipt of filed materials in GEOS when required, but bears no responsibility for the failure of an engaged Design Professional, Contractor, or other agency to successfully submit such required materials appropriately to GEOS for the Project. Refer to GEOS Training and Technical Assistance site for programs currently included in the online system and a schedule for required GEOS Submittals.

00 00 05
VARIANCE REQUIREMENTS & FORM

1. **GENERAL**
   A. If the Design Professional deviates from the University of Georgia Design & Construction Standards (Standards) without written approval, the deviation will be considered an error and a claim may be processed against the Design Professional's professional liability insurance for reimbursement of the cost to meet the Standards. The amount of the claim may be reimbursed to the Owner through a unilateral change order.
   B. If the Contractor is responsible for design / building certain (or all) aspects of the project, and deviates from the Standards without a written approval, the Contractor's deviation will be considered an error and a claim may be processed against the Contractor's insurance. If the Contractor makes a change or substitution during the shop drawing and submittal process that is a deviation from the Standards, it is the burden of the Contractor, not the Design Professional, to seek a variance approval. The amount of the claim may be reimbursed to the Owner through a unilateral change order.
   C. The Project Variance Request Form must be submitted by the Design Professional and/or Contractor for any deviations from the Standards and approved in writing. Inclusion of a deviation from the Standards, whether in drawings or specifications during any phase of design reviews, including shop drawing and submittal reviews, is not considered a Design Variance approval. It is the Design Professional and/or Contractor's burden to point out deviations to the Project Manager and to specifically request written variance approval prior to incorporating in the Project. The University of Georgia is not responsible for identifying any deviations from the Standards.
   D. For work at UGA's Tifton and Griffin Campuses and all other UGA facilities outside of Clarke County, the Project Manager shall discuss at with the Design Professional and Contractors during the kickoff meetings that potential variances of the UGA Standards should be discussed for these locations.

PROJECT NAME:	DATE SUBMITTED:
DESIGN PROFESSIONAL:	PROJECT NUMBER:
CONTRACTOR:	NAME OF UGA PROJECT MANAGER:
REQUESTED BY:	REQUESTOR'S OFFICE/ORGANIZATION:

SUBMISSION:

☐ SD ☐ DD ☐ CD ☐ SUBMITTAL ☐ CHANGE REQUEST ☐ OTHER: _____

CURRENT DESIGN REQUIREMENT (REFERENCE THE APPLICABLE DESIGN AND CONSTRUCTION STANDARD):

BRIEF DESCRIPTION OF THE REQUESTED VARIANCE (INCLUDE THE PROPOSED ADDITION/DELETION/CHANGE TO DESIGN REQUIREMENT):

JUSTIFICATION:

REQUESTOR'S REPRESENTATIVE SIGNATURE: _____

UNIVERSITY OF GEORGIA - OFFICIAL USE ONLY

UNIVERSITY VARIANCE REQUEST ACTION: ☐ APPROVED ☐ DENIED

PROJECT MANAGER SIGNATURE: _____ AVP SIGNATURE: _____

DATE: _____ DATE: _____

00 00 05.01
STATE FIRE MARSHAL VARIANCES

1. **GENERAL**
   A. If a State Fire Marshal issued variance is needed, the Design Professional shall write a letter on company letterhead to the Associate Vice President for Facilities Planning providing the information required by the current variance request process, available from the Georgia State Fire Marshal's Office (Office of Insurance and Safety Fire Commissioner, 404-656-2056, www.oci.georgia.gov).
   B. The Office of University Architects for Facilities Planning (OUA) will confer with the University Office of Fire and Life Safety regarding the request and, if found acceptable, shall prepare a cover letter and submit it along with the request for variance to the State Fire Marshal's office.
   C. The Design Professional shall not directly submit a variance request to the State Fire Marshal's office.

00 00 06
ACCESS TO EXISTING DOCUMENTS

1. **GENERAL**
    A. To access documents for UGA buildings, visit the Facilities Inventory digital plansroom: https://plansroom.fmd.uga.edu/
        i. Plansroom - As-built and construction drawings
        ii. Plansroom - Review documents current and archived
        iii. PDF Drawings - Basic simplified floor plans (with room number, use, and square footage.)
        iv. AutoCAD Drawings - Basic simplified floor plans (with room number, use, and square footage.)
            a. This secure website requires a UGA MyID username and password. Non-UGA visitor access is available upon request. To request access, enter your email address on the access page and click the “Request Non-UGA Access” link.
            b. Contact Facilities Inventory regarding questions or assistance: facilities-inventory@fmd.uga.edu.

00 00 07
DESIGN PROFESSIONAL DESIGN PROCESS REQUIREMENTS

1. **GENERAL**
   A. Related sections:
      i. 00 00 08 – Design Professional Documentation Requirements & Deliverables
      ii. 01 81 00 – Facility Performance Requirements
      iii. 01 77 00 – Project Closeout
   B. There are other Design Professional process requirements included throughout the Standards. There are Division sections which contain additional and more specific design requirements. For example, "Division 23 00 00 – General Mechanical Requirements" includes additional and more specific design requirements related to mechanical.
   C. At the beginning of most of the Division sections that are listed as 'General Requirements', for example "Division 23 00 00 – General Mechanical Requirements" includes additional and more specific design requirements related to mechanical.
   D. The Engineer shall request preliminary testing and validation of existing conditions and/or existing system performance to include measurement of existing HVAC system water-flows and air-flows, pot-holing of underground utilities, measurement / metering of power usage as required to minimize construction delays and ensure final system performance. The testing should be performed before starting the design. Results of preliminary testing and validation shall be reviewed with UGA PM and Engineering personnel.
   E. Design Intent Documentation: For all drawing sets (SD, DD, etc.), the cover sheet of the mechanical, electrical, and plumbing drawings shall indicate design intent (narrative and metrics). See the following sections for specific requirements:
      i. Mechanical: 23 00 00
         1. Appendix B UGA Standard Control Sequences
         2. Appendix C UGA Standard Commissioning Specifications
      ii. Electrical: 26 00 00
      iii. Plumbing: 22 00 00
   F. As soon as locations of site-related appurtenances are determined (as applicable to the Project), the Design Professional shall coordinate with the Project Manager and the Office of Fire Safety for the proposed fire department and emergency vehicle access roads, fire hydrant locations, PIV locations, and Fire Department Connections, and the Office of Fire and Life Safety will coordinate with the local fire department.
   G. For Schematic Design, the Design Professional shall include mechanical, electrical, and plumbing design narrative with supplemental drawings / outline specifications.
   H. For Design Development (Preliminary Design), the Design Professional shall include mechanical, electrical, and plumbing design drawings / outline specifications, or the first draft of full specifications.
   I. During Schematic Design, the Design Professional shall develop a minimum of three completely different design solutions for review. These shall be completely different design approaches and not be minor variations between schemes.
   J. Design Professional shall notify Project Manager of any and all substitution requests and confirm acceptability prior to Design Professional authorizing change.

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K. Design specifications shall adhere to the latest CSI numbering format. Individual equipment items shall have specific sections as defined by CSI and shall not be combined together into larger generalized sections.
L. Design Professional shall ensure that ADA minimum clearances are slightly exceeded to take into account tolerances for work in the field so as to ensure ultimate compliance with ADA guidelines.
M. The minimum office corridor width shall be 5’-0” to allow for adequate passing space in office corridors.
N. On projects that will incorporate new alarms or emergency sensors for any facilities that may require a public safety response, DP shall work with UGA PM to coordinate with the UGA Associate Vice President for Public Safety.”
O. The building envelope shall be designed so as to prevent the ingress of bats and other vermin.
P. DP shall include housekeeping pads for all major floor-mounted mechanical, electrical, and plumbing equipment (AHUs, water-cooled chillers, pumps, ATS, switchgear, dry-type transformers, water heaters, compressors, etc.).

00 00 08
DESIGN PROFESSIONAL DOCUMENTATION REQUIREMENTS & DELIVERABLES

1. **GENERAL**
   A. Related sections:
      i. 00 00 10 – BIM Requirements
      ii. 01 31 23 – Project Website
      iii. 01 31 26 – Electronic Communication Protocols
      iv. 01 33 00 – Submittal Procedures
      v. 01 41 26.06 – Food Service
      vi. 01 77 00 – Project Closeout
      vii. 01 81 00 – Facility Performance Requirements
      viii. 27 00 00 – General Communications Requirements
   B. These are minimum requirements for consistent documentation for the review, construction, and archiving for all Projects.
   C. Minimum Documentation Requirements:
      i. Project title consistent with Design Professional Contract title, UGA Building Number, and current date on all sheets.
      ii. BOR/FMD/OUA Project number and bid number (if applicable) on all sheets.
      iii. Type of submittal (examples: Schematic Design, Design Documents, Construction Documents, GMP, BID, As-Builts) and current date on all sheets.
      iv. Any changes after construction release shall be shown as Revision 1, 2, 3, etc., and clouded & noted with proper revision reference on all revised sheets and noted on index.
      v. Accurate and complete index of all sheets for the project including clear identification of most up to date sheet version (including set title and date).
      vi. Include UGA location map showing at least one major road or intersection on cover sheet (campus maps are available for download at (https://www.architects.uga.edu/maps/pdf-maps)
      vii. Building key plan showing location of Work with graphic scale and north arrow on each drawing sheet. Should multiple building numbers exist for different zones or phases of a building, these shall be clearly indicated on the key plan as well.
      viii. Sheet size preference is Standard Arch D (24x36). Larger sheet size Arch E1 (30x42) or Arch E (36x48) is acceptable only when necessary and approved by the Project Manager.
      ix. PDF drawings and specifications:
         a. Font type shall be TrueType or OpenType fonts (no vector-based or SHX fonts) and font size shall be a minimum of 12pt when printed to scale.
         b. Designers shall ensure CAD/BIM authoring tools produce vector-based drawings (not rasterized).
         c. DP shall maintain output scale when printing drawings to PDF.
         d. All PDF files shall be searchable.
      x. Microsoft Word files shall be in '.docx' format and be 2016 or later.
      xi. Electronic file names shall be no longer than 15 characters using only Microsoft acceptable file names.

xii. For projects that do not require BIM, AutoCAD files shall be version 2017 or later and be whole and complete with NO Xrefs to symbols or other drawings.

D. Deliverables

i. This section does not replace, but supplements, the standard project deliverables stated in Section 2 of the Design Professional Contracts, Design-Build Contracts, Design-Bid-Build Contracts, Construction Manager Contracts, and as required for permitting by the BOR.

ii. All drawings and specifications shall be submitted in AutoCAD (.dwg), Revit (.rvt) (depending on if BIM is utilized), Microsoft Word (.docx), and Adobe PDF (.pdf) formats. All PDF files shall be searchable.

iii. Drawings and specifications shall each be submitted both as one PDF binder set and as separate AutoCAD, Microsoft Word and PDF files (as applicable) for each drawing sheet/specification section. All drawing PDF files shall be "flattened" so individual layers can no longer be manipulated to ensure data is protected.

iv. All electronic (.pdf) specifications shall be tabbed and bookmarked, with individual sections hyperlinked back to their listing in the table of contents.

v. UGA Milestone Deliverables: The following list documents minimum UGA deliverable drawing sets for OUA and FMD use in reviewing milestone submissions. All deliverables shall be submitted in electronic format to the Project Manager, who will then distribute contents to reviewing entities. For the intermediate milestone submittals, the percentage complete may vary per project and one of these percentages may also be the GMP set.

a. **Site Evaluation & Planning Services** – PDF drawings, specifications, and narratives (as applicable, per direction by Project Manager)

b. **Schematic Design** – PDF drawings, specifications, narratives, Facility Performance Checklist (see 01 81 00), MEP Design Concepts (Narratives and supplemental drawings), Network Drop Spreadsheet*, Dining Services documents (if applicable, see 1.D.vii)

c. **Design Development** – PDF drawings, specifications, narratives, Facility Performance Checklist (see 01 81 00), MEP Design Concepts (Narratives and supplemental drawings), Network Drop Spreadsheet*, Dining Services documents (if applicable, see 1.D.vii)

d. **Additional Intermediate Milestones** (as directed by Project Manager) - PDF drawings, specifications, narratives, Facility Performance Checklist (see 01 81 00), MEP Design Concepts (Narratives and supplemental drawings), Network Drop Spreadsheet*, **Dining Services documents (if applicable, see 1.D.vii)

e. **100% Construction Documents** - PDF and CAD files, specifications, narratives, Facility Performance Checklist (see 01 81 00), Network Drop Spreadsheet*, ***Dining Services documents (if applicable, see 1.D.viii) **plus** two (2) full size sets of drawings and specifications are required for UGA Fire Safety. Submit the two sets of drawings and specifications with two copies of the completed "UGA Fire Safety Form 354" to the Project Manager who will forward to UGA Fire Safety. See section 01 41 26.03 Permit Requirements – Construction Permits. If permitted through State Fire Marshal, then one set is required for UGA Fire Safety.

f. **Closeout** - Refer to 01 77 00 - Project Closeout

vi. Prior to issuance of Design Development-level documents, the FMD Facilities Inventory shall have an opportunity to review and request corrections to the proposed room numbering on the plans.

vii. *Network Drop Spreadsheet: Refer to 27 00 00 – General Communications Requirements for template information and requirements.

viii. ** If the project includes food preparation that will require a health department permit, for schematic design, the Design Professional shall email a pdf of the site plan, floor plan with food service area and nearest restrooms, and any food equipment layout related information to the Project Manager. The Project Manager will send the file to ESD for review.

ix. ***For 100% Construction Documents, the Design Professional shall prepare one full size set that only includes the information as required in 01 41 26.06 Food Service and forward to the Project Manager who will send it to ESD and also provide a pdf set of that corresponding set for review. Pending any comments, once ready to be submitted for permitting, the Design Professional provide 5 sets of hardcopy sets and one searchable pdf including equipment cut sheets to the Project Manager. This shall include one full bound set of specifications.

x. Simplified Floor Plan: Within 10 days at the issuance of 100% or "For Construction" Documents, the Design Professional is required to prepare simplified project floor plans (if any). The simplified floor plans shall be a 2D AutoCAD drawing and shall only contain the layers and associate attributes listed in the chart below. The electronic AutoCAD (.dwg) file shall be submitted via e-mail to the Project Manager.

	DESCRIPTION OF ITEMS	**COLOR**
AR-COLUMN	All columns	Red
AR-COLUMN-LINE	All column centerlines	Yellow
AR-DOOR	All doors	Cyan
AR-ELEVATOR	All elevators and ADA lifts	Green
AR-FEATURE	Any permanent building feature (built in desk units that define an area, auditorium seating, overhang of roof, turn styles, exterior walkways, etc.)	Blue
AR-REST-PART	Any permanently installed counters, stalls, and partitions (include door swing)	Cyan
AR-REST-FIXT	All fixtures	Cyan
AR-STAIR	All stairs, handrails, and ADA ramps	254 (Grey)
AR-WALL	All exterior and interior walls	Red
AR-WINDOW	All windows and store fronts in exterior and interior walls	Yellow
AREA	All polylines that define rooms, hallways, mechanical chase, or floor	White/Black
FI-TEXT	All relevant text for room numbers and room use	Green

Table Comments:

See the "AR-REST-" layers for restroom specific details.

00 00 09
ROOM & SPACE NUMBERING

1. **GENERAL**
   A. Related sections:
      i. 00 00 06 – Access to Existing Documents
   B. These numbering conventions have been developed and must be followed throughout all phases of the Project for UGA controlled facilities for the purpose of standardizing room numbers.
   C. For new buildings, these standards must be followed as closely as possible. In cases of renovations or additions to existing buildings, the building's existing numbering system can be extended, or abandoned in order to use the following standards to renumber the entire building including the renovated and/or added space. If the existing numbering system is used, existing room numbers shall not be duplicated. For a list of existing room numbers, refer to Section 00 00 06 Access to Existing Documents for building floor plans with room numbers. In addition, e-mail facilities-inventory@uga.edu and request an Excel spreadsheet of the existing room numbers related to the Project.
   D. The intention is for each facility's floor and room numbering scheme to be structured so that the numbers flow through the building in a consistent, comprehensible, and user-friendly pattern. The scheme should be clear to the users of the facility, not causing confusion for individuals attempting to locate spaces.
2. **FLOOR NUMBERING**
   A. The first character of a room number indicates the floor level of the building. The level with a "1" as the first character should be the uppermost floor entered at grade or one half flight above grade. Levels below this can use the character "0" (zero), "B" (basement), or "G" (ground), depending upon the arrangement and number of these floors. Buildings located on steeply sloping sites may need to vary from this rule; where necessary, the floor numbered "1" may not in fact be the uppermost floor entered at grade. Where "B" and "0" (zero) are used in the same building, the "B" level will be below the "0" level. *The only cases where the floor indicator should be more than one character are buildings with more than nine floors.*
   B. Large mezzanines shall be numbered as a whole floor. Example: When a mezzanine exists between the first floor and the next whole floor, it will be numbered as the second floor.
   C. Usable attic floors and penthouse levels should be numbered as if they are whole floors. For example, a two-story penthouse atop a three floor building will be numbered as the fourth and fifth floors. Do not use prefixes such as "R" for roof level.
3. **ROOM NUMBERING**
   A. The guidelines in this section should be followed as closely as possible when assigning numbers to individual rooms.
   B. Use 3 or 4 digit numbers (plus optional alpha suffix) consistently throughout the building. Rooms shall be numbered with a three or four digit number, where the first digit may be optionally replaced with the letter "B" or "G" (see floor numbering above); the length depends upon the size of the building and once chosen shall be consistent throughout the entire building. *With an optional letter suffix, the maximum length of a room number is 5 characters.*

C. Three-digit numbers shall be used for buildings with 9 or fewer floors and 99* or fewer rooms per floor. The first floor will be numbered 100's; second floor will be 200's; third floor will be 300's etc.

*The actual number of rooms requiring the use of four-digit room numbering will vary, depending upon how many numbers are skipped and also the number of suites vs. rooms requiring non-suffixed numbers.

D. Ground floor or basement rooms could be numbered 001, 002, etc. or G01, G02, etc. or B01, B02, etc. *Note: the following examples use spaces in the room number to clarify and illustrate the numbering scheme; these spaces should not appear in the actual room number.*

Example: Building with 9 or fewer floors and 99* or fewer rooms per floor

G 41 ← indicates room number
↑ indicates floor (ground floor)

3 02 ← indicates room number
↑ indicates floor (third floor)

E. Four-digit numbers shall be used for buildings exceeding 9 floors or having more than 99* rooms per floor. Buildings with wings or sections can also use four digit numbers if this makes the numbering scheme easier to navigate.

Example: Building with more than 9 floors and 99* or fewer rooms per floor

B0 02 ← indicates room number
↑ indicates floor (basement floor)

01 02 ← indicates room number
↑ indicates floor (first floor)

11 02 ← indicates room number
↑ indicates floor (eleventh floor)

Example: Building with 9 floors or less but more than 99* rooms per floor

B 102 ← indicates room number
↑ indicates floor (basement floor)

1 102 ← indicates room number
↑ indicates floor (first floor)

Example: Building divided into wings or sections

G 1 02 ← indicates room number
↑ ↑ indicates wing or section (numeric only)
∟indicates floor (ground floor)

1 1 02 ← indicates room number
↑ ↑ indicates wing or section (numeric only)
∟indicates floor (first floor)

F. Numbers should flow from one end of the building to the other
   i. 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 a more complex corridor system, numbers should flow in ascending order in a clockwise direction through the corridors from the main entrance, or similar location such as elevator lobby.
G. Use odd numbers on one side of a corridor and even numbers on the other side
   i. Room numbers shall be coordinated so that even numbers are on one side of a corridor and odd numbers are on the other side. (In more complex designs, or where the availability of numbers is limited, the odd-even format can be abandoned if consecutive numbering results in a more logical scheme.)
H. Skip numbers to maintain succession of room numbering
   i. 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 large 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.
I. Skip numbers to allow for future renovations
   i. When a corridor contains large rooms such as classrooms, meeting rooms, etc. on both sides of the corridor, room numbers shall be skipped to allow for future renovation of a large space into smaller spaces. Sufficient numbers shall be reserved to allow for the large spaces to be divided into standard size office spaces.
J. Use similar numbering on each floor
   i. Numbering systems on all floors should be similar as much as possible, even when the floor plans are significantly different. To the greatest extent possible, and without creating other inconsistencies, rooms with the same digits in the last positions should be located in the same position in the building. Thus, B01, G01, 001, 101, 201, etc., occur in a vertical stack.
K. Use alphabetic suffixes for rooms entered from other rooms (rather than a hallway)
   i. Rooms entered from a main corridor or lobby are numbered with no letter suffix. When rooms open off of another room and not from a corridor (such as in a suite of offices), use the number of the first room with a letter suffix (example: Reception 301, Office 301A, Office 301B, Office Storage 301C). Assign suffix letters in the order rooms are encountered and, where possible,

in the same direction as the overall numbering sequence. Only a single suffix is allowed; thus in the case where the first room already has a suffix, the next alphabetic designation shall be used. Avoid the letters "I" and "O" which may be interpreted as numbers. Large suites with many rooms can use non-suffixed numbers if it makes the numbering scheme more understandable.

L. Each room should have only one number
   i. Each room should have only one number regardless of the number of doors opening into it. Exceptions can be made where a particularly large room is subdivided into different areas of use, such as by cubicles. In these cases, one-character letter suffixes are added to create unique numbers. Where the number of areas exceeds the suffixes available, additional sequential numbers should be used.

M. Number all accessible spaces (Non-assignable spaces)
   i. In addition to rooms, all interior spaces that can be directly accessed, such as corridors, vestibules, stairwells, elevator shafts, and accessible pipe spaces shall be numbered. Where doors or walls separate different areas of these spaces, each area shall receive its own unique number. The following room number guidelines shall be used for Non- assignable spaces.

Type	Room Number*	Notes
Porch/Deck/Ramp	XX94S	
Lobby/Foyer	XX95S	Includes lobby, foyer, vestibule, anteroom
Dock	XX96S	Includes receiving areas, loading docks
Elevator	XX97S	
Stair	XX98S	
Hall/Corridor	XX99S	Includes halls, corridors
* XX is the floor number (01, 02, 03, etc.) and S is an alphabetic suffix, i.e., A, B, C, etc.		

General notes for Non-assignable spaces:

All room numbers shall have an alphabetic suffix. Begin the numbering with the suffix rather than beginning with blank, i.e., 0198A, 0198B, etc.; NOT 0198, 0198A.

When a building has stairs, label stairs as separate space labels rather than merging with hall/corridor space labels.

No distinction between public and private corridors other than private corridors should typically have a "real" space label rather than be labeled using the circulation scheme.

N. **DO NOT:**
   i. Do not use two-character floor level indicators for buildings with 9 or fewer floors.
   ii. Do not number mezzanines as "M" floor level.
   iii. Do not number penthouses as "R" for roof level.
   iv. Do not use more than five or less than three characters for a room number.

v. Do not use a letter prefix or suffix to indicate a room type (such as M101 or 101M for a first floor mechanical room).
vi. Do not use letters except as a floor prefix, or suffix for a room accessed through another room (do not number a data room as 1D00).
vii. Do not use periods, hyphens, spaces, or any other non-alphanumeric character in room numbers (do not number a room as 1-16 or 01.14.03).
viii. Do not number internal courtyards and roof areas, unless covered. Exception: The uncovered top level of parking decks used for parking should be assigned numbers.
ix. Do not number rooms on one side of a hallway and then back down the other side.

O. **DO:**
i. Do number all accessible spaces, including stairwells and elevator shafts.
ii. Do number all exterior covered spaces, whether walled or not.
iii. Do number all penthouse spaces.

4. **STANDARDS FOR PARKING DECKS**
   A. Standalone parking decks are considered buildings and will have a building number and room numbers to cover all usable space within the structure. This also includes the top uncovered level.
5. **CONFLICTS AND SPECIAL CASES**
   A. In the case of conflicts or questions, contact the Project Manager who will coordinate with FMD.

00 00 10
BIM REQUIREMENTS
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For the BIM Execution Plan (BEP) refer to Section 00 00 10.01 BIM Execution Plan.

1.0 - PURPOSE, USE AND REQUIREMENTS

The purpose of this BIM Section is to establish baseline requirements for Design Professionals and Contractors in their Building Information Modeling (BIM) efforts related to the design and construction of University of Georgia (UGA) facility projects.

Where BIM is required as a deliverable, the BIM Team (Design Professional and Contractor on a specific project collaborating on BIM requirements) shall refer to and comply with the requirements of the BIM Standards. BIM is required on all projects with total funding of $5 million or greater. On all other projects BIM is encouraged but not required.

The use and application of BIM when required will apply to all phases of the Project's lifecycle, including master planning, program analysis, project definition and schematic design, design and construction phases, and facility management. BIM is an evolving tool and the BIM Team, through the BIM Execution Plan (BEP; refer to Section 00 00 10.01 BIM Execution Plan) development process, is encouraged to bring forth ideas and suggestions to make the process as efficient and beneficial as possible. As each project is unique, the BIM Execution Plan will be specific and customized to each project.

The BIM deliverable does not replace the standard project deliverables as defined in the Design Professional's and Contractor's Contracts; BIM is considered an additional deliverable. UGA requires that all design and construction document deliverables for projects are created and derived from the building information models, and expects that information in the model be coordinated, resolved and updated with the 2D Contract Document deliverables.

It is UGA's intent to reuse the BIM models and associated data for continuing lifecycle management of the buildings, including facilities management and future development/redevelopment of those future existing buildings. It is the goal and intention that UGA shall receive deliverables to meet the needs of two separate departments. One objective being OUA, requiring an accurate As-Built BIM model with final component data to be used for future building renovations, additions and future building planning and management; the other objective being a BIM model and Construction Operations Building Information Exchange (COBie) deliverable for FMD to capture facility and operations data that will be integrated with Computer Aided Facilities Management (CAFM) software. BIM models shall be provided throughout the design, construction and closeout phases along with corresponding data collection from the BIM models, to be submitted in COBie format to capture and record final closeout data.

<u>It is not the intent of UGA to require additional, unnecessary, or duplicative modeling efforts, and UGA recognizes that different models may be generated or not depending on each BIM Team entities' abilities or normal work processes.</u> For example, many fabricators (ductwork, fire sprinkler piping, etc.) use software that can be developed and read in Navisworks. However, the Navisworks information cannot be brought into the Design Professional's Revit model. UGA ideally desires a complete As-Built Revit model, but does not require and does not want to pay for duplicative work to take the systems modeled in Navisworks and to remodel them in Revit.

The Navisworks software will allow the Revit model to be imported into the Navisworks model resulting in a complete As-Built viewable model. UGA can use Navisworks viewing software to look at the entire model to locate information embedded in the model. In this scenario, UGA will receive as final

deliverables both Revit model (missing items that were only modeled in Navisworks) and a Navisworks model (with Revit model imported into it). If the BIM Team is able to originally model all the required items in Revit without duplicating efforts, then for example, one less type of model is required as a deliverable.

UGA cannot use the Navisworks model to model future projects after the completion of the current project and will have specific features remodeled in Revit in the future if deemed appropriate for that future project. It is hoped that the software translation issues will be resolved soon and the issue of multiple types of models due to software incompatibilities will disappear.

Accepted software is listed below, however, other software shall be considered subject to their capabilities and benefits to the Project. Direct any questions regarding the BIM Standards to the Office of University Architects (OUA):

1. Authoring and Design Software for Architecture, Interior Design and Structure: Revit Architecture, Revit Structure, ArchiCAD, Bentley Architecture, Digital Project, Tekla Structures, Vectorworks Designer.
2. Authoring Software for MEP, FP, and Specialty Consultants: Revit MEP, ArchiCAD MEP, AutoCAD MEP, AutoCAD Architecture. MEP shall use BIM Authoring Software, but may use 3D object-oriented software.
3. Civil Design: AutoDesk Civil 3D, Bentley Inroads
4. Coordination and Spatial Conflict Checking: Navisworks, BIMSight, Solibri Model Checker
5. Model Checking Utilities (Spatial validation and Industry Foundation Class) Solibri, BIMSight, Navisworks
6. Energy analysis and modeling: DOE2, EcoDesigner, Ecotect, IES-VEware, EnergyPlus, eQuest, Breen Building Studio, Trane/Trace, Vasari

2.0 – DEFINITIONS AND TERMS

These terms and definitions are specified for BIM Requirements. Other general definitions and abbreviations can be found in Section 00 00 02 Terms. Also refer to Section 00 00 03 Modifications to General Requirements of BOR Contracts.

Accuracy

The level of detail and the level of precision expected at various points in the Project process are dependent on the required level of design (LOD). Accuracy refers to the placement, sizing, and representation of building components. The scale represents a mixture of 3D and 2D content at the one end to a fully 3D model at the other end that will be used in Interference Checking and As-Built/Record drawings.

As-Built Model

A digital representation of a facility produced through BIM during the construction phase of a project that contains data and other relevant information from the design model and tracks changes during construction. These are Construction Models that have been updated throughout the construction process and reflect the final As-Built condition of the Project and includes relevant component data that will be needed for COBie data output. Typically, a model

provided by the Contractor that is a concurrent model to the Design Intent/Record Model provided by the Design Professional.

Building Information Model (BIM)

An acronym for "Building Information Modeling", or "Building Information Model" that is a digital representation of the physical and functional characteristics of a facility and a shared resource that forms a basis for decisions during its life-cycle, from conception to demolition.

BIM Deliverables

Information (in numerous formats) that may be required by Contract or agreement to be submitted or passed to another party and to UGA.

BIM Execution Plan (BEP)

An outline that defines the scope of BIM implementation, identifies the process flow for BIM tasks, defines information exchanges, and the infrastructure needed for support. A plan created from the UGA's BIM Execution Plan template that is to be submitted within thirty (30) days after Contract award. Refer to Section 00 00 10.01 BIM Execution Plan.

BIM Process

A generic name for the practice of performing BIM. This process can be planned or unplanned. The BIM process may also be referred to as the BIM execution process or the BIM project execution process. The BIM project execution planning process suggests diagramming the BIM process using process maps.

BIM Process Maps

A diagram of how BIM will be applied on a project. The BIM project execution plan proposes two levels of process maps: BIM overview map and detailed BIM use process maps.

BIM Team

All Design Professionals, Contractors, and Consultants charged with delivering BIM information as defined in the BIM Standards, and listed in the BEP for a specific project.

BIM Use

A method of applying building information modeling during a facility's life-cycle to achieve one or more specific objectives.

Computer-Aided Facility Management (CAFM)

UGA's FMD utilizes a CAFM software program to assist with maintenance of facilities.

Construction Model

A digital representation of a facility produced through BIM during the construction phase of a project that contains data and other relevant information from the design model and tracks changes during construction. Typically, this BIM Model is provided by the Contractor and may be used for quantity take offs, construction sequencing and phasing, clash detection, modeling of delegated design elements, and data tracking of submittal information.

COBie - Construction Operations Building Information Exchange

COBie is a standard of information exchange that allows information to be captured during design and construction in a format that can be used during the operations of a building once completed. Final COBie format deliverable will be in (.XLSX) spreadsheet form.

Critical Path Modeling

Critical Path Modeling is a method of demonstrating Integrated Project Delivery. It sets a plan within the BIM Team that accounts for the activities of each discipline and how they interact with each other. It builds upon a critical path method for those activities, and allows the Project Team to schedule a complete project.

Design Intent Model

A digital representation of a facility produced through BIM to provide design intent for use in construction that is coordinated with other engineering disciplines. This type of BIM model is typical provided by the Design Professional Team and will be used to produce a combination of 3D and 2D information that is then utilized to produce the Contract drawings for construction.

.DWG

.DWG is a native AutoCAD file format. It is a widely used file format for exchanging drawing information and 3D information to different programs. While not a database file type, it still has lots of uses for exchanging information.

.GBxml

A .GBxml file is a Green Building file type. It is used to run simulations through energy modeling software. It is a widely accepted file format for those types of software.

Interior Design

Interior Design is defined as the selection of interior materials, finishes, and furnishings.

Integrated Project Delivery (IPD)

Integrated Project Delivery is a collaborative effort by Design Professionals to maximize performance and efficiency in all phases of a project.

Level of Development (LOD)

Describes the completeness to which model elements representing components, systems, or assemblies are developed at progressive project phases. This development includes geometric and non-geometric data.

Navisworks

Navisworks is software that allows for the viewing of multiple model formats. This ability to "view" these files also allows for Navisworks to simulate the interaction between model files. That includes collision reporting, time lining, and coordination.

.NWC

An .NWC file is a Navisworks Cache File that is used by Navisworks to quickly read many other file types. All linked files in Navisworks have an .NWC file created automatically. In addition, Revit will export directly to the very small file type of .NWC for quick access by Navisworks.

.NWD

A much larger file than the .NWC, the .NWD file shows a snapshot in time of Navisworks file. No linked files exist but all geometry is included.

Phases

The phases of a project can be described in two different ways as the adoption of IPD terminology starts to penetrate the BIM Execution Plan and the IPD Methodology Plan. Below is a list of the traditional names followed by the IPD name:

Pre-Design/Conceptualization Phase
Schematic Design/ Criteria Design Phase
Design Development/ Preliminary Design/ Detailed Design Phase
Construction Documents/Implementation Phase
Agency Permit & Bidding/Agency Coordination & Final Buyout
Construction
Occupancy

Record Model

Design Intent Models that have been updated throughout the construction process. These changes and updates have been communicated from the Contractor to the Design Professional

through the comments, annotations, and mark-ups from the As-Built Documents. These typically, but not always, are discipline specific models.

.RVT

An .RVT file is a native REVIT file type. It is also the deliverable file format for all projects. This includes all of the Design Professional Team's models.

Simple Building Information Modeling (SBIM)

SBIM is a concept of producing a "light" model that can be used for simulating the building's performance very early within the design process. SBIM is the process of modeling only the exterior envelope, and the interior volumes to produce a lean model that energy modeling software can use easily.

3.0 – PROCESS

In addition to previously stated requirements, Design Professionals and their consultants may use their own in-house standards, components and details that embed the best practices of the firm. BIM shall be created by the BIM Team that includes all geometry, physical characteristics, and component data needed to describe the design intent and Construction Documentation. All drawings and schedules required for assessment, review, bidding, and construction shall be derived from the BIM models either directly (as in schedules, floor plans, elevations, sections, project specific details, etc.) or indirectly (as may be the case with standard details). The process is to include requirements for accuracy and proficiency, Level of Development, BIM Execution Planning, Integrated Project Delivery, interference checking, COBie data management, and other requirements as defined in this section.

3.1 - ACCURACY AND PROFICIENCY

BIM models shall provide accurate and correct final information about the building project and its components. Use industry standard and accepted nomenclature or UGA nomenclature (when provided or required) for objects and spaces. Use model checking tools before submission. Objects in BIM should be created and categorized appropriately within the BIM model. System families such as walls, floors, roofs, sweeps, etc. shall be properly created and categorized as what they are. Component families such as furniture, casework, specialty equipment, plumbing equipment, mechanical equipment, etc., shall also be properly created and categorized as to what they are so that component elements can be properly scheduled, quantified, and controlled within the model and have appropriate data associated with those components for latter data capture in the COBie deliverable. Use of generic component models, in-place families and/or groups should be minimized or avoided as much as possible. Modeling of the building and its components should be modeled precisely and accurately as much as possible, yet no less accurate than industry standard construction tolerances for the components being modeled. For objects that are not easily accommodated within the program due to special circumstances, such as complexity or uniqueness, then modeling an approximation of it that conforms closely to its size and look is acceptable along with categorizing it accordingly. All such occurrences should be documented and communicated to the Project Manager in writing. Accuracy and proficiency shall be expected with both 3D and 2D content.

3.2 - LEVEL OF DEVELOPMENT (LOD)

Level of Development (LOD) management should be utilized to assign the expected level of development for the Project at the various project phases, along with what team parties are responsible for the specific LOD for each of the components defined in the BEP, at the various project phases.

The following are general LOD descriptions:

1. LOD 100: Conceptual Design - Overall building massing
2. LOD 200: Schematic Design and Preliminary Design - Generalized systems and assemblies with approximate quantities, sizes, shapes, location and orientation for analysis of required systems, including daylight, views and energy.
3. LOD 300: Construction Documents - Detailed systems and elements. Modeling and detailing sufficient enough to meet requirements of the Contract documents for permitting and construction.
4. LOD 400: Shop Drawings for Fabrication and Assembly
5. LOD 500: As-Built & Record Models & Drawings for Maintenance and Operations - Includes UGA required elements for final model.

3.3 – BIM EXECUTION PLANNING

UGA requires a BIM Execution Plan (BEP) that is customized for the specific needs and requirements of each project. Utilize the UGA BEP Template as a starting point for developing each projects BEP. The BEP shall define the uses and responsibilities of BIM on the Project and its detailed process throughout the lifecycle of the Project. Once the plan is approved, the Team is required to follow it, monitor their progress against the plan, and make adjustments to the plan as appropriate. The BIM Execution Plan shall be considered a living document that will continue to change and evolve over the course of the Project.

The steps include the following:

1. Within 30 days of Design Professional contract award:
    A. BIM Execution Plan Overview
    B. Project Information
    C. Key Project Contacts
    D. Project Goals/BIM Uses
        i. Data Commissioning
        ii. Performance Monitoring
    E. Organizational Roles/Staffing per phase
    F. BIM Process Design
    G. BIM Information Exchanges
    H. BIM and Facility Data Requirements
    I. Collaboration Procedures
    J. Quality Control Reviews
    K. Technological Infrastructure Needs
    L. Model Structure
    M. Project Deliverables Per Phase
    N. Delivery Strategy/Contract

2. Template: Utilize the UGA BIM Template as the starting point for project specific BEP.

When developing the BEP project goals for the BIM model and BIM data, the desired end results should be identified. How will the model be used during the Project and after the Project is completed? What data will need to be captured and delivered in COBie spreadsheet format? How will that data be used by the Owner? How will these objectives start to define how the model and its data are created and defined?

3.4 – INTEGRATED PROJECT DELIVERY (IPD) METHODOLOGY PLAN

The BIM Team's IPD Methodology Plan should be integrated into the BEP and be subject to the same submittal and review time table as the BEP. The IPD Plan must include a high level of integrated design, identification of Project Team members and how they will interact with each other during the Project, and a critical path method using modeling and model information validation.

While it is understood that most projects will not be a full IPD project in the strictest sense of the word due to current contract structure, there are however many aspects of IPD methodology that can and should be integrated with BIM. Most notably, the IPD aspects of the planning for and sharing of model information with and between the Design Professional and constituents but also with the Contractors and Subcontractors should be incorporated. A plan for collaboration between the Design Professional and Contractor (and Subcontractor) should be outlined in such a way as to provide for this collaboration to start occurring as soon as feasibly possible within the design and construction phase process.

An important aspect of this IPD Methodology Plan is the outlining of how data will be developed and progressed throughout the Project. Outlining and assigning who is responsible for the data and model development at each phase and at what point the data will be handed off to a different party. This will be especially important with regards to how COBie data will be developed and coordinated, this is because multiple parties will be responsible for different data entry at different phases, and all data will have to be integrated at the end into a unified single deliverable for submittal to UGA.

A detailed description and mapping of what data will be needed as part of the final delivery is an important part of the BEP & IPD methodology. For example; data fields will be need to be defined for uploading into the Owner's CAFM program. Required data fields that are available in the BIM model will have to be identified and data that will have to come from other sources will have to be identified. These required data fields will then need to be mapped to their corresponding COBie data fields. It will be necessary to show how required data that can be captured from the BIM model will get from the BIM model(s) to the COBie spreadsheets and finally uploaded into the Owner's FM database program. In addition, data that was entered into the COBie spreadsheets separately from the model and that need to be re integrated back into the BIM model(s) will need to be identified. If there are multiple models then the data from each model will have to be identified and managed so that data from multiple models can be consolidated together into the required COBie worksheets. This will require a great deal of integrated delivery coordination and planning from the Project Team.

The BEP and IPD methodology cannot be delivered in isolation. No one party within the BIM Team can adequately outline the execution plan, while also obtaining the necessary team member commitments

for successful BIM implementation. Full coordination and collaboration by all parties is an absolute necessity. The following aspects of an integrated work plan shall be addressed:

1. Setup of initial BIM Schedules and project parameters within the BIM model to establish and organize the capture of spatial and component data information for future distribution and export.
2. Use Omniclass Table 13 for spatial naming conventions and Omniclass numbers for all spatial data. Where multiple naming options are available determine which Omniclass names will be utilized.
3. Use Omniclass Table 23 for component and product naming conventions and Omniclass numbers for all building components requiring COBie information. Determine which components and products will be tracked and data collected.
4. Determine the specific data required for each space or component and the assignment of spatial, system, component and other data responsibilities and authorship.
    A. Spatial data
    B. FF&E components
    C. Structural components
    D. Special Equipment components
    E. Mechanical Equipment components
    F. Electrical Equipment components
    G. Plumbing Equipment & Accessories
    H. Design phase versus Construction phase data
    I. Commissioning Data
    J. Closeout Data
    K. As-Built / Record model and associated data
5. Coordinate the authorship and responsibility at each phase and establish procedures and schedules for when component data responsibility will transfer to another BIM Team entity. (i.e Mechanical components – initial BIM schedules and project parameters for future data entry established by Architect, then actual modeled components to be originally authored by Mechanical Engineer, transferred to Contractor for submittal phase development by Subcontractor, utilized in clash detection, and final data entry of submitted component data such as make, model, and serial numbers. Then any required data by the Commissioning Provider, and final delivery of all final As-Built modeling and component data into final deliverable formats to the Owner, including BIM Model and COBie spreadsheets.)
6. Recognize and identify separate deliverable requirements for both OUA and for FMD, and provide plan for meeting separate needs of each owner entity requirements.
    A. OUA will require an As-Built Model sufficiently developed and modeled for use in planning and design of future project additions and alterations to the current project. Due to incompatibilities of software and the desire not to duplicate modeling efforts, OUA will accept multiple As-Built Models if necessary to document all of the required information. For example, a Revit model (that is missing As-Built ductwork) and a Navisworks model (that has the Revit model imported and includes the ductwork) may be accepted in lieu of one Revit model.
    B. In addition to OUA requirements, FMD will also require As-Built Data in COBie format suitable for integration into their CAFM software.
7. Identify data that may need to be reintegrated into a combined final As-Built Model, if data was not generated from that model.

The workflow and progress of this information gathering, collecting and submitting may vary depending on size and type of project, data desired, abilities of the various parties involved, and contractual relationship of the various parties. It is estimated that a minimum of three to four meetings will be needed to develop the overall strategy, and all key decision makers will need to be involved, including (but not limited to) the Design Professional, Owner's Representatives, Structural & MEP Engineers, Contractor, major Subcontractors, and Commissioning Provider as early in the process as feasibly possible. It may become necessary to revise and update the BEP as additional parties and stake holders come on board. The BEP shall be revised, updated and resubmitted at each major project phase.

4.0 – OBJECTIVES, APPLICATION & DELIVERABLES

The following items are specific BIM deliverables and/or coordination items required at the completion of each phase. These are in addition to the traditional deliverables required by Contract or other deliverables required in the UGA Design and Construction Standards.

4.1 – PRE-DESIGN/CONCEPTUALIZATION

1. **Project Objectives and BEP**: Provide a written summary description of project objectives as part of the initial BIM Execution Plan (BEP) for review and approval.
2. **Programming and Planning Tools**: The Design Professional is encouraged to use electronic programming and planning tools that integrate into their BIM software to capture early cost, schedule and program information. Deliverables at the end of Pre-Design shall verify and confirm the program, budget, schedule, and targeted building efficiency. The Design Professional shall use BIM & Planning software for use in supporting comparative costs analysis of various design options.
3. **Existing Building Conditions**: The Design Professional shall model existing conditions needed to coordinate the extent of the new construction work where work includes additions or alterations. Contact Project Manager for drawing inventory of existing buildings for use as a base reference only. Refer to Section 01 31 00.01 Access to Existing Documents. Unless otherwise specified, the Design Professional is responsible for verification of existing conditions and ensuring that all electronic deliverables are accurate and comply with requirements.
4. **Simplified BIM (SBIM) Model**: The Design Professional shall develop a simplified BIM model formatted for use in conceptual energy modeling for comparative analysis and other early Pre-Design Conceptualization efforts, this may be in the form of a simplified mass model or other LOD: Level One type of model as appropriate for the early analysis requirements listed in this phase. At least three design options shall be developed and presented; including site information.
5. **Site & Topographical Surveys**: Topographical surveys shall be received from Project Manager in electronic format in a format that allows for importing into the BIM Team's BIM software. Exact requirements vary by project and shall be coordinated with the Project Manager. Site information shall be included as part of the Pre-Design Conceptualization phase and coordinated with the required three design options. Any site, environmental or historic building aspects or constraints should be addressed in the Pre-Design Conceptualization models as required.
6. **Energy Modeling Requirements**: The purpose at this early phase, is to narrow down design strategies to meet project's energy goals and targets, including the reduction of energy demand

by optimizing building form and orientation and daylight. Comparative energy analysis shall be based on local climate data and actual site conditions for summer and winter. The BIM Team shall utilize the simplified BIM model for use in conceptual energy modeling for comparative analysis, as appropriate for the early analysis software chosen by the BIM Team. At least three design options that meet the Project program and budget shall be compared and results given in "Percent Better" or "Percent Worse".

7. **Visualization**: The SBIM model shall be utilized to produce 3D & 2D views of each scheme required as appropriate to demonstrate integration of proposed schemes with the surrounding roads, drives, pedestrian paths, access, and program requirements. Deliverables shall include rendered views as required to communicate early concept design intent.

4.2 – SCHEMATIC DESIGN

1. **Project Objectives, BEP & Budget**: Provide a written description of project objectives as part of the initial BIM Execution Plan (BEP) for review and approval. Schematic Design defines the optimum design solution to meet UGA's aesthetic, program, budget and schedule while still being on track for energy, sustainability (if required) and building code requirements. Updated Budget/Cost estimates and updated Schedule shall also be provided at this phase.
2. **Program and Space Validation**: Provide a program and space validation report that utilizes spatial data, which includes room areas derived from the BIM model. Program verification software (for example: Trelligence Affinity) that integrates with the BIM model is encouraged. Areas shall include assignable areas (ASF) and non-assignable areas. Mechanical, electrical, telecommunications, housekeeping, toilet facilities, corridors and other circulation areas shall be labeled and their areas tabulated. Figures for net floor area and gross area shall be tabulated for compliance with Building Efficiency Target. Gross areas include wall thicknesses and open voids, per floor. In addition provide initial spatial data in COBie format (see COBie Data item below).
3. **Existing Building Conditions & Existing Utilities Report**: The Design Professional shall continue to model existing conditions needed to coordinate the extent of the new construction work where work includes additions or alterations. Unless otherwise specified, the Design Professional is responsible for verification of existing conditions and ensuring that all electronic deliverables are accurate and comply with requirements. At this phase an existing utilities report should also be provided for impact on schematic design solution.
4. **BIM Model**: All information required for Schematic Design level of development shall be graphically and alphanumerically correct, included in, and derived from the BIM model. Including, room and building areas and names. Model shall meet UGA's functional and aesthetic requirements while still meeting budgetary and sustainability demands. BIM model to be sole source of all 2D drawings, being derived from the model. Generic and "place holder" system and component families may be utilized for this model deliverable. The model shall contain a high level of accuracy and proficiency as the design develops. Provide work set organization and coordinate work set management as part of BEP.
5. **Site & Topographical Surveys**: The site BIM model shall be geo-referenced to the correct coordinate system. Establish protocols and procedures for sharing and coordinating BIM Model origin points so that all consultant models may be correctly loaded into one another's models for reference, coordination and documentation purposes. Document the procedures for coordination in the BEP. Surveys shall be projected in State plane coordinates Georgia West using the horizontal North American Datum 1983 and the vertical North American Vertical

Geodetic Datum 1988 both in units of feet. Design Professional shall coordinate with Project Manager on contour interval and requirements for surveys. See 02 21 00 Surveys for specific requirements. It is understood that not all BIM programs are compatible with State map coordinate references, if so establish a common origin point between BIM models and Survey / Site information and document in the BEP.

6. **Energy Modeling Requirements**: BIM Team shall continue development of energy model on the selected scheme for Schematic Design to optimize focus on the most promising energy saving strategies. Document how the model will progress at each phase and which BIM Team member is responsible for the energy model at each phase. (For example, the early phase energy analysis might be performed by the architect utilizing a basic level program such as Revit in conjunction with Green Building Studio, then progress to an energy consultant who might utilize a more advanced program such as Ecotect or IES-VEware, and then finally progress to the Mechanical Engineer who will do final energy modeling using a program like eQuest.) Document a plan for how the energy model will develop in each phase of the Project, identifying responsible parties, software, and integration with the BIM model in the BEP. Information shall include life-cycle cost (LCC) and return on investment (ROI).
7. **Visualization**: The BIM model shall be utilized to produce 3D & 2D views of each scheme required as appropriate to demonstrate development of the selected scheme for Schematic Design. Deliverables shall include any rendered views as required to communicate Schematic Design intent.
8. **Collision Report**: At this phase additional models and information may not yet be developed enough for true interference or clash detection. Provide plan for future phase interference and/or clash detection in the BEP.
9. **COBie Data**: At Schematic Design Phase initial COBie data shall be limited to Facility, Floor and Space information only. COBie Data shall be submitted in spreadsheet format, using the most current version of COBie. The following COBie worksheets shall be provided in the Schematic Design deliverable:
    A. **COBie Table 6-20 Worksheet 01**: Contact (People/Offices/Companies)
    This worksheet may be generated in the spreadsheet outside of the BIM program
    B. **COBie Table 6-21 Worksheet 02**: Facility (Identification of facility (ies))
    This worksheet may be generated in the spreadsheet outside of the BIM program
    C. **COBie Table 6-22 Worksheet 03**: Floor (description of vertical levels)
    This worksheet may be generated in the spreadsheet outside of or derived from the BIM model
    D. **COBie Table 6-23 Worksheet 04**: Space (Spaces within a floor)
    This worksheet shall be derived from the BIM model utilizing scheduled rooms from the BIM model, including assignable and non-assignable areas; mechanical, electrical, telecommunications, housekeeping, toilet facilities, corridors and other circulation areas.

Coordinate actual data needed in each worksheet with OUA and FMD requirements. Document required data necessary in COBie worksheets and document the components which need to have data generated and captured in the BEP. It is not necessary to provide data on all model components only those required. Schedule planning meetings to determine the scope and extents of elements and components that will need to be captured in COBie worksheets, and provide a mapping scheme for migrating data fields in the BIM model to the data fields in the COBie spreadsheets as part of the BEP.

4.3 – PRELIMINARY DESIGN (DESIGN DEVELOPMENT)

1. **Project Objectives, BEP & Budget**: The BIM Team shall provide a written description of project objectives as part of the initial BIM Execution Plan (BEP) for review and approval. Preliminary Design will show the refinement of the scope of work identified during the Schematic Design Phase. It will also have reconciled the impact of the engineering disciplines on the Schematic Design, and have major structural and MEP systems modeled at this time to demonstrate the integration of the original schematic design concepts with the engineering requirements. Updated Budget/Cost estimates and updated Schedule shall also be provided at this phase. BEP should document the various design models from the BIM Team entities. Use BIM software to extract more accurate figures for cost estimating. Outputs shall be on spreadsheets and submitted at the end of this phase.
2. **Program and Space Validation**: Provide an updated program and space validation report that utilizes spatial data which includes room areas derived from the BIM model. Verify building efficiency targets. In addition provide spatial data in COBie format (see COBie Data item below)
3. **Existing Building Conditions & Existing Utilities Report**: The Design Professional shall continue to model existing conditions needed to coordinate the extent of the new construction work where work includes additions or alterations. Unless otherwise specified, the Design Professional is responsible for verification of existing conditions and ensuring that all electronic deliverables are accurate and comply with requirements. At this phase existing utilities should be identified, documented and coordinated with base MEP systems and show how new MEP systems will tie into the existing utilities.
4. **BIM Model**: All information required for Preliminary Design level of development shall be graphically and alphanumerically correct, included in, and derived from the BIM model. Including, room and building areas and names. Model shall meet UGA's functional and aesthetic requirements while still meeting budgetary and sustainable, if this is required, demands. BIM model to be sole source of all 2D drawings, being derived from the model. Generic and "place holder" system and component families should be replaced with proposed system and component families. A model to contain a high level of accuracy and proficiency as the design develops. Provide additional scope of work coordination regarding how final building elements are going to be modeled between BIM Team entities and documented in the BEP. For example certain structural elements such as floor slabs can be the responsibility of the Architect or Structural Engineer. In some cases the elements may be duplicated, copy/monitor may be utilized, if so, how and for which elements, document in BEP. Additional modeling Requirements:
    A. **Architectural Systems Requirement**: Architectural Site Plan, existing building elements or conditions, demolished items, new interior and exterior walls (not generic types), ceilings, soffits, sun control elements, floors and roof systems, penthouses and roof structures, fenestration and doors, vertical circulation, built in millwork and architecturally significant equipment, furnishings and fixtures, plumbing fixtures.
    B. **Structural Engineering Requirements**: Foundations, framing, shear and load bearing walls, brick ledges, steel bracing, edge of slab conditions, lintels.
    C. **HVAC Systems Requirements**: Equipment such as fans, VAV's, compressors, chillers, cooling towers, air handlers, etc.; Distribution ductwork modeled to outside ductwork or duct insulation; Diffusers, louvers, hoods, radiant panels, perimeter units, wall units; Show clearances required for equipment access, removal or repair as invisible solids.

D. **Electrical Systems Requirements**: Transformers, generators, main distribution panels, switchgear, main IDF's, conduit and feeders larger than ¾" diameter, outlets, switches, junction boxes, lighting fixtures and controls, fire alarm permanently mounted fixtures, building controls and clearance zones for access.
E. **Plumbing, Process Piping & Fire Protection Requirements**: Waste/Vent, Supply or Process Piping at or over ¾" (includes any insulation); plumbing fixtures; sprinkler lines larger than ¾" diameter, sprinkler heads, pumps, stand pipes, wall hydrants, connections and risers.
F. **Specialty Consultants Requirements**: Equipment provided or specified by consultant with rough – in connection points for all utilities and clearances required. Extent of modeling shall be per the BIM Execution Plan.

5. **Site & Topographical Surveys**: The model shall include topography with level of detail per the BIM Execution Plan. Model should include surrounding areas that affect drainage system or have other impacts. Landscaping elements shall include planted areas, beds and berms, hardscape, site paving and storm water management structures or systems.
6. **Energy Modeling Requirements**: Continued development of energy model on the selected scheme from Schematic Design to optimize focus on the most promising energy saving strategies is required. Parametric studies to better understand the energy use of each building component are required. Model shall meet any target requirements for sustainability and/or LEED or other third party verification. Model shall include all the design and operating parameters that affect energy consumption after occupancy. Expected occupant numbers and hours, lighting use, equipment use, and other user data shall be included to attain a closer approximation of actual use. Requirements shall include options for Energy Conservation Measures (ECM) to achieve further reductions in water, electricity or energy in the facility. Information shall include life cycle cost (LCC) and return on investment (ROI). Update the plan for how the energy model will be utilized at this and future phases of the Project, identifying responsible parties, software, and integration with the BIM model in the BEP.
7. **Collision Report**: At this phase additional models and information shall be developed enough for true interference and/or clash detection. Discipline Collision Reports: Collision report shall include; structure against electrical and specialty equipment; ductwork / piping against electrical equipment; ductwork / piping against floors and the building envelope; ductwork / piping against structural framing elements.
8. **COBie Data**: At Preliminary Design Phase COBie data shall be submitted in spreadsheet format, using the most current version of COBie. The following COBie worksheets shall be provided in the Preliminary Design deliverable:
   A. **COBie Table 6-20 Worksheet 01**: Contact (People/Offices/Companies)
   B. **COBie Table 6-21 Worksheet 02**: Facility (Identification of facility (ies))
   C. **COBie Table 6-22 Worksheet 03**: Floor (description of vertical levels)

   The following worksheets shall be derived from the BIM model utilizing scheduled rooms/elements from the BIM model.

   D. **COBie Table 6-23 Worksheet 04**: Space (Spaces within a floor)
   E. **COBie Table 6-26 Worksheet 07**: Component (named components & equipment)

Coordinate actual data needed in each worksheet with OUA and FMD requirements. Document required data necessary in COBie worksheets and document the components which need to have data generated and captured in the BEP. It is not necessary to provide data on all model components only those

required. Schedule planning meetings to determine the scope and extents of elements and components that will need to be captured in COBie worksheets, and provide a mapping scheme for migrating data fields in the BIM model to the data fields in the COBie spreadsheets as part of the BEP.

4.4 – CONSTRUCTION DOCUMENTS (CONTRACT DOCUMENTS)

1. **Project Objectives, BEP & Budget**: The BIM Team shall provide a written description of project objectives as part of the initial BIM Execution Plan (BEP) for review and approval. Continued development of the model so that the design intent and scope of work is detailed and annotated, graphically clear for accurate bidding, scheduling and construction purposes. Updated Budget/Cost estimates and updated Schedule shall also be provided at this phase. BEP should document the various design models from the BIM Team entities. Use BIM software to extract more accurate figures for cost estimating. Outputs shall be on spreadsheets and submitted at the end of this phase.
2. **Program and Space Validation**: Provide an updated program and space validation report that utilizes spatial data which includes room areas derived from the BIM model, and verifies that final design matches original program intent. Verify building efficiency targets. In addition provide spatial data in COBie format (see COBie Data item below).
3. **Existing Building Conditions & Existing Utilities Report**: The Design Professional shall continue to model existing conditions needed to coordinate the extent of the new construction work where work includes additions or alterations. Unless otherwise specified, the Design Professional is responsible for verification of existing conditions and ensuring that all electronic deliverables are accurate and comply with requirements. At this phase existing utilities shall be identified, documented and coordinated with base MEP systems and show how new MEP systems will tie into the existing utilities.
4. **BIM Model**: All information required for Construction Documents level of development shall be graphically and alphanumerically correct, included in, and derived from the BIM model, including Room and Building Areas and names. Model shall meet UGA's functional and aesthetic requirements while still meeting budgetary and sustainable, if this is required, demands. The BIM model to be the sole source of all 2D drawings, being derived from the model. Generic and "place holder" system and component families should be replaced with actual representational system and component families that accurately reflect the desired design intent. The model is to contain a high level of accuracy and proficiency as the model is developed. Maintain parametric links within the model so that plans, sections elevations, custom details, schedules and 3D views are automatically generated and referenced. 2D details and section information should be consistent with and accurately match with corresponding 3D information within the scale being referenced. Do not hide 3D geometry that does not match 2D details and then draw a differing condition in 2D, 3D geometry shall accurately reflect design intent of 2D detailing. Provide additional scope of work coordination regarding how final building elements are going to be modeled between BIM Team entities and document in the BEP. Refine load calculations, wind pressure, daylighting, acoustics, natural ventilation, code issues. Extent of modeling shall be per the BIM Execution Plan. Additional modeling requirements:
    A. **Architectural Systems Requirement**: Architectural Site Plan, existing building elements or conditions, demolished items, new interior and exterior walls (not generic types), ceilings, soffits, sun control elements, floors and roof systems, penthouses and roof

structures, fenestration and doors, vertical circulation, built in millwork and architecturally significant equipment, furnishings and fixtures, plumbing fixtures.

B. **Structural Engineering Requirements**: Foundations, framing, shear and load bearing walls, brick ledges, steel bracing, edge of slab conditions, lintels.
C. **HVAC Systems Requirements**: Equipment such as fans, VAV's, compressors, chillers, cooling towers, air handlers, etc.; Distribution ductwork modeled to outside ductwork or duct insulation; Diffusers, louvers, hoods, radiant panels, perimeter units, wall units; Show clearances required for equipment access, removal or repair as invisible solids.
D. **Electrical Systems Requirements**: Transformers, generators, main distribution panels, switchgear, main IDF's, conduit and feeders larger than ¾" diameter, outlets, switches, junction boxes, lighting fixtures and controls, fire alarm permanently mounted fixtures, building controls and clearance zones for access.
E. **Plumbing, Process Piping & Fire Protection Requirements**: Waste/Vent, Supply or Process Piping at or over ¾" (includes any insulation); plumbing fixtures; sprinkler lines larger than ¾" diameter, sprinkler heads, pumps, stand pipes, wall hydrants, connections and risers.
F. **Specialty Consultants Requirements**: Equipment provided or specified by consultant with rough – in connection points for all utilities and clearances required. Extent of modeling shall be per the BIM Execution Plan.

5. **Site & Topographical Surveys**: The model shall include topography with level of detail per the BIM Execution Plan. Model should include surrounding areas that affect drainage system or have other impacts. Landscaping elements shall include planted areas, beds and berms, hardscape, site paving and storm water management structures or systems.
6. **Energy Modeling Requirements**: Provide comparison of proposed final design to the minimally code-compliant base-case building. Model shall meet any target requirements for sustainability and/or LEED or other third-party verification as well as energy performance requirements listed in Section 01 81 00 Facility Performance Requirements. Model shall include all the design and operating parameters that affect energy consumption after occupancy. Expected occupant numbers and hours, lighting use, equipment use, and other user data shall be included to attain a closer approximation of actual use. Requirements shall include options for Energy Conservation Measures (ECM) to achieve further reductions in water, electricity or energy in the facility. Information shall include life cycle cost (LCC), return on investment (ROI), and Energy Use Intensity (EUI). Design Professional shall coordinate with UGA PM to incorporate the latest utility and energy rates from the UGA Office of Utility and Energy Management.
7. **Collision Report**: Pre-Bid Collision Reports. Collision reports to verify that no major unresolved collisions are occurring in the Design Professional Design Intent Models. Discipline Collision Reports: Collision report shall include; structure against electrical and specialty equipment; ductwork / piping against electrical equipment; ductwork / piping against floors and the building envelope; ductwork / piping against structural framing elements.
8. **COBie Data**: At Construction Document Phase COBie data shall be submitted in spreadsheet format, using the most current version of COBie. The following COBie worksheets shall be provided as part of the Construction Document deliverable:
   A. **COBie Table 6-20 Worksheet 01**: Contact (People/Offices/Companies)
   B. **COBie Table 6-21 Worksheet 02**: Facility (Identification of facility (ies))
   C. **COBie Table 6-22 Worksheet 03**: Floor (description of vertical levels)

The following worksheets shall be derived from the BIM model utilizing scheduled rooms/elements from the BIM model.

D. **COBie Table 6-23 Worksheet 04**: Space (Spaces within a floor)
E. **COBie Table 6-26 Worksheet 07**: Component (named components & equipment)

Coordinate actual data needed in each worksheet with OUA and FMD requirements. Document required data necessary in COBie worksheets and document the components which need to have data generated and captured in the BEP. It is not necessary to provide data on all model components only those required. Schedule planning meetings to determine the scope and extents of elements and components that will need to be captured in COBie worksheets, and provide a mapping scheme for migrating data fields in the BIM model to the data fields in the COBie spreadsheets as part of the BEP.

4.5 – BIDDING/PROCUREMENT PHASE

1. **General:** Depending on how project is to be delivered, additional BIM requirements for model sharing may or may not be required on a project-by-project basis. Document any specific BIM deliverables for this phase in the BEP.

4.6 – CONSTRUCTION PHASE

1. **BIM Execution Plan (BEP) Review**: The BIM Team and UGA shall review the BEP and make necessary changes and updates to ensure the smooth continual coordination of BIM modeling information and data collection and integration. The BEP shall be updated to include commissioning into the BIM and COBie process.
2. **Design Intent Model**: The BIM Team shall continuously maintain and update the Design Intent Model(s) with changes from Construction Change Orders and As-Built mark-ups provided by the Contractor(s) during construction. Updated models shall be provided in .RVT format per the BEP for frequency and location.
3. **Construction Models**: A BIM construction model(s) shall be developed and maintained by the Contractor in .RVT format. The Contractor shall be provided a copy of the Design Professional's BIM Models(s), the Contractor shall then utilize that model to develop a concurrent construction model that he will develop for Construction Phase needs. The Construction phase model may be developed and modified as required to inform: materials, quantities, sequencing, phasing, clash detection, etc. as required by the Contractor and the Subcontractors. Additional Construction Models shall also be developed for fabrication, coordination and shop drawings. These additional Construction Models may be in other formats other than BIM, if they are in other formats other than .RVT then the Contractor shall review and consolidate those models utilizing Navisworks, and providing a coordinated Navisworks model as a deliverable in .NWD format, during the construction phase at a frequency to be documented in the BEP. As-Built modeling and documentation in the Construction .RVT and .NWD models by the Contractor shall be concurrent with updates to the Design Intent Model(s) by the Design Professional Team. It is not the intent of UGA to require additional, un-necessary, or duplicative modeling efforts, and UGA recognizes that different models may be generated or not depending on each BIM Team entities abilities or normal work processes. UGA in any event would like a consolidated As-Built Model in Navisworks (.NWD) that will consolidate all differing modeling methods into one reference. Discussion among all BIM Team parties is expected in determining final BIM deliverables, and all final deliverables shall be documented in the BEP and agreed to by all parties.

4. **COBie Data**: At the beginning of the Construction Phase the Contractor shall take over responsibility for the COBie Data for elements and component data. The Design Professional will maintain responsibility for the COBie Data for spatial data (Rooms and Areas) and other general information. The purpose and intent is for the Contractor to provide the additional data that will come from the shop drawing and product submittal process, delegated design elements, and redesigned systems that are the responsibility of the Contractor and Subcontractors. The following COBie worksheets (1-4) shall be the responsibility of the Design Professional Team and provided as part of the Construction Phase deliverables per the BEP:
    A. **COBie Table 6-20 Worksheet 01**: Contact (People/Offices/Companies)
    B. **COBie Table 6-21 Worksheet 02**: Facility (Identification of facility(ies))
    C. **COBie Table 6-22 Worksheet 03**: Floor (description of vertical levels)
    D. **COBie Table 6-23 Worksheet 04**: Space (Spaces within a floor)

    The following COBie worksheets (5-7) shall be derived from the BIM model utilizing scheduled information from the BIM construction model and shall be provided by the Contractor per the BEP.

    E. **COBie Table 6-26 Worksheet 07**: Component (named components & equipment)

Coordinate actual data needed in each worksheet with OUA and FMD requirements. Document required data necessary in COBie worksheets and document the components which need to have data generated and captured in the BEP. It is not necessary to provide data on all model components only those required. Schedule planning meetings to determine the scope and extents of elements and components that will need to be captured in COBie worksheets, and provide a mapping scheme for migrating data fields in the BIM model to the data fields in the COBie spreadsheets as part of the BEP.

4.7 – PROJECT CLOSEOUT

1. **Record Model & Drawings:** The BIM Team shall provide the final update to the Design Intent BIM Model(s) thus producing the Record BIM Model. Record model to contain all changes from Construction Change Orders and As-Built markups provided by the Contractor throughout the Construction Phase process. Final Record Model shall be provided in .RVT format and .IFC formats. Record drawings will be provided as updated 2D documentation of Contract Drawings in .PDF and .DWG format or as otherwise defined in the Contract and Section 01 77 00 Project Closeout.
2. **As-Built Model & Drawings**: The Contractor shall provide the final update to the Construction BIM Model(s) thus producing the As-Built BIM Model. As-Built BIM Model(s) to contain all changes from Construction Change Orders and As-Built markups and documentation as recorded by the Contractor throughout the Construction Phase process. Final As-Built Model shall be provided in .RVT format, .IFC format, and .NWD format.
3. **COBie Data**: The following COBie worksheets (numbered 1-4) shall be the responsibility of the Design Professional Team and shall be provided as part of the Project Closeout Phase deliverables per the BEP:
    A. **COBie Table 6-20 Worksheet 01**: Contact (People/Offices/Companies)
    B. **COBie Table 6-21 Worksheet 02**: Facility (Identification of facility(ies))
    C. **COBie Table 6-22 Worksheet 03**: Floor (description of vertical levels)
    D. **COBie Table 6-23 Worksheet 04**: Space (Spaces within a floor)

The following COBie worksheets (numbered 5-11) shall be derived from the BIM model utilizing scheduled information from the BIM Construction Model(s) and shall be provided by the Contractor as part of the Project Closeout Phase deliverables per the BEP.

E. **COBie Table 6-24 Worksheet 07**: Component (named equipment)

Coordinate actual data needed in each worksheet with OUA and FMD requirements. Document required data necessary in COBie worksheets and document the components which need to have data generated and captured in the BEP. It is not necessary to provide data on all model components only those required. Schedule planning meetings to determine the scope and extents of elements and components that will need to be captured in COBie worksheets, and provide a mapping scheme for migrating data fields in the BIM model to the data fields in the COBie spreadsheets as part of the BEP

5.0 – COMPONENT WORKSHEET

Use the following Component Worksheet for determining which components will be tracked and assigned COBie data. This is a general list that may need to be expanded depending on the Project and its components, adjust as needed and include as part of the BEP documentation and as the starting point for determining the extent of COBie data modeling required for each project.

Components to have COBie Data		
SITE		
	Area Wells / Grating	N
	Equipment Curbs	N
	Building Pads	N
	Planting	N
	Sidewalks	N
	Parking Stripes	N
	Roads	N
	Property lines	N
	Topography	N
General		
Exterior		
	Walls	N
	Wall system	N
	Windows	N
	Glazing	N
	Mullions	N
	Header / Sill Height	N
	Doors	N
	Jambs	N
	Door Type	N
	Hardware	N

	Steps	N
	Ramps	N
Interior		
	Walls	N
	Walls to Deck	N
	Walls above ceiling	N
	Walls – Partial height	N
	Wall Types	N
	Doors	N
	Door types	N
	Door jambs	N
	Door header height	N
	Door Schedule	N
Windows		
	Window Types	N
	Glazing	N
	Mullions	N
	Header / Sill Height	N
Circulation		
	Floor Type	N
	Floor Finish	N
	Handrails	N

	Raised Floor System	N
	Stairs	N
	Ramps	N
	Elevator	Y
	Escalators	N
Restrooms		
	Toilet partitions	N
	Toilets	N
	Grab bars	N
	Sinks	N
	Fixtures & Accessories	N
Misc.		
	Wall Protection / Corner Guards	N
	Fixed millwork	N
	Fire Extinguishers	N
	Mechanical Chases	N
	Vertical penetrations	N
	Floor penetrations	N
	Columns - Architectural	N
	Room Numbers	Y
	Personnel assignment / occupant	N
Kitchen Equipment		
	Stove	N
	Grill	N
	Vent hood	N
	Prep table	N
	Mixer	N
	Walk-in cooler/freezer	N
	Reach-in cooler/freezer	N
	Fryer	N
	Fire suppression equipment	N
	Steam table	N
	Cold food table	N
	Ice machine	N
	Soda fountain	N
Rooftop		
	Roof type	N
	Roof construction	N
	Vent pipes	N

	Exhaust fans	N
	Roof drains	N
	Gutters	N
	RTU curbing	N
	Roof railings	N
	Parapet walls	N
	Roof top mechanical equipment	Y
	Skylights	N
Reflected Ceiling Plans		
	Ceiling Type	N
	Skylights	N
	Signage	N
	Electrical fixtures	N
	Electrical devices	N
Specialty Equipment		
	Cold rooms	N
	Emergency drench hose	N
	Emergency eye wash	Y
	Emergency shower	Y
	Emergency shower/eyewash	Y
	Eyewash shower	N
	Exhaust fumehood	Y
Furniture		
	Desk	N
	Chair	N
	Table	N
	Side chair	N
	Bookshelf	N
	File cabinet	N
	Credenza	N
	Desktop computer	N
	Laptop computer	N
	Monitor	N
	Printer	N
	Copier	N
	Plotter	N
	UPS	N
	Phone - handset	N
	Phone - mobile	N
	Fax machine	N

	Artwork	N
	Casework - fixed	N
Structural		
	Beams	N
	Columns	N
	Connections	N
	Gusset plates	N
	Bolts	N
	Flange widths	N
	Joists	N
	Anchor bolts	N
	Base plates	N
	Misc. steel	N
Mechanical		
	HVAC equipment	Y
	HVAC registers/returns	N
	Sprinklers	N
	Air terminals – supply/returns	Y
	HVAC flex ducts	N
	HVAC trunks	N
	HVAC ducts	N
	Sprinkler trunk	N
	Mechanical equipment	Y
	Sprinkler heads	N
	Sprinkler lines	N
	Fire hoses	N
	AHU 100 + tons	Y
	AHU 25/99 ton	Y
	AHU 3/24 ton	Y
	Air compressor	Y
	Air drier	Y
	Computer AC unit	Y
	Condensing unit	Y
	Constant velocity	N
	Cooling tower	N
	Custodial chemical dispenser	N
	CW pump	N
	DDTU	N
	Dehumidifier	N
	Domestic water filters	N
	Dryer	N
	Energy recovery unit	Y
	Exhaust fan	Y

	Exhaust fan/fumehood	Y
	Fan coil unit	Y
	Fresh air supply fan	N
	Fumehood	Y
	HVAC vents	N
	Pack AC	N
	Residential furnace	N
	Return air fans	N
	Roof top AC unit	N
	SAC	N
	Steam humidifier	Y
	Steam boiler	Y
	Terminal reheat unit	Y
	Terminal unit	Y
	UHBE	N
	UHBG	N
	UHBS	N
	UHBW	N
	Unit heater electric	N
	Unit heater water	Y
	VAV	Y
	Window AC	N
	Hot water pumps	Y
	Domestic booster pumps	Y
	Process chilled water pumps	Y
	Solar panel (water)	Y
Electrical		
	Switches	N
	Receptacles	N
	Data/CATV outlets	N
	Alarm devices	N
	Thermostats	N
	Sconces	N
	Fire cabinets	N
	Electrical panels	Y
	Wiring troughs in slabs	N
	Floor receptacles	N
	Light fixtures	Y
	Speakers	N
	Exit lights	Y
	Emergency exit lights	Y
	Cameras	N
	Exhaust fans	Y
	Emergency strobes	N

	Electrical conduits >/= ¾”	Y
	Electrical conduits < ¾”	N
	Data lines	N
	Fire dampers	N
	Hangers	N
	Cable trays	N
	Data port ID	N
	Circuit ID	N
	Transformers	Y
	Transformer switches	Y
	Emergency generator	Y
	Switchboard	Y
	Switchgear	Y
	High voltage switches	Y
Plumbing		
	Plumbing fixtures	N
	Major plumbing trunk lines	N
	Minor plumbing supply lines	N
	Plumbing drain lines	N
	Disconnects and shut off valves	N
	Hose bibbs	N
	Fire connections	N
	Acid dilution tanks	Y
	CD pump	N
	Chiller	N
	Chiller process	Y
	Coalescing filters	N
	Faucets	N
	Floor drains	N
	Roof drains	N
	Grease traps	N
	Heat pump	N
	Heater	N
	Hot water strainer	N
	HW pump	N
	Inlet vane	N
	Liebert unit	Y
	Outdoor fountain	N
	PIU	N
	Processed chilled water	N
	Processed chilled water filter	N
	Water fountains	Y
	Domestic hot water	Y
	Hot water boiler	Y

	VAC pump	Y
	Main chilled water valves	Y
	Main domestic water valves	Y
	Back flow prevention	Y
	FM 200	Y
	Main line sewer system	Y
	Cisterns	Y

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BIM EXECUTION PLAN (BEP)
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1.0 – BIM EXECUTION PLAN (BEP) AGREEMENT

By signature below, this BIM Execution Plan, dated _____ is herewith approved and will be incorporated as an amendment to the Design Professional Agreement, as a change order to the Contractor Agreement, and as an amendment to other separate consulting and commissioning provider agreements as they may apply to the list of parties co-signing this document.

The BEP shall be updated and amended at each major project phase deliverable, as new key parties or entities are brought on board the project and incorporated into the BIM Execution Plan.

Owner's Representatives:

UGA OUA _____ _____
Name Date

UGA FMD _____ _____
Name Date

Design Team:

Design Professional _____ _____
Name Date

Structural Engineer _____ _____
Name Date

Mechanical/Electrical/Plumbing/FP Engineer _____ _____
Name Date

Civil Engineer _____ _____
Name Date

Other _____ _____
Name Date

Construction Team:

General Contractor _____ _____
Name Date

Mechanical Contractor _____ _____
Name Date

Electrical Contractor _____ _____
Name Date

Plumbing Contractor _____ _____
Name Date

Structural Contractor _____ _____
Name Date

Other _____ _____
Name Date

Other Consultants:

Commissioning Provider: _____ _____
Name Date

2.0 – OVERVIEW

The intent of this BIM Execution plan is to provide a framework that will let the Owner, Design Professional, Engineers, and Contractor deploy building information modeling (BIM) technology and best practices on this project. This plan delineates roles and responsibilities of each party at each phase, the scope and level of detail of information to be developed, data to be managed and shared, processes defined, and software to be utilized.

3.0 – PROJECT INITIATION

This section defines the Core Collaboration Team, the project objectives, project phases, and overall communication plan throughout the project's phases.

3.1 – PROJECT INFORMATION

Project Name:	Project Name
Project Number:	Project Number
Project Address:	Project Address
Project Description:	Project Description

3.2 – PROJECT GOALS AND OBJECTIVES

Project Goal(s)	Achieved if	Project Timeframe
Provide UGA OUA with a useful BIM model that can assist in future renovations, additions and space management.	Model is accurate and contains all major components and systems in Revit format, updated to reflect As-Built conditions of construction.	Completion of Project
Provide UGA FMD with useful COBie data for the facilities management of the building.	All required data is determined early in the project and accurately setup, managed, accumulated and exported into complete COBie worksheets that can be imported into UGA's FM program.	Completion of Project

3.3 – TEAM INFORMATION

Contact	Role/Title	Company	E-mail	Phone
Name	title	company	e-mail	p. 555-555-555 c. 555-555-5555
Name	title	company	e-mail	p. 555-555-555 c. 555-555-5555
Name	title	company	e-mail	p. 555-555-555 c. 555-555-5555
Name	title	company	e-mail	p. 555-555-555 c. 555-555-5555
Name	title	company	e-mail	p. 555-555-555 c. 555-555-5555
Name	title	company	e-mail	p. 555-555-555 c. 555-555-5555
Name	title	company	e-mail	p. 555-555-555 c. 555-555-5555
Name	title	company	e-mail	p. 555-555-555 c. 555-555-5555
Name	title	company	e-mail	p. 555-555-555 c. 555-555-5555
Name	title	company	e-mail	p. 555-555-555 c. 555-555-5555
Name	title	company	e-mail	p. 555-555-555 c. 555-555-5555

3.4 – PROJECT PHASES / MILESTONES

Project Phase / Milestone	Estimated Start Date	Estimated Completion Date	Project Stakeholders Involved
Programming / Pre-Design Phase	MM/DD/YEAR	MM/DD/YEAR	Owner, Design Professional, Consulting Engineers
Schematic Design Phase	MM/DD/YEAR	MM/DD/YEAR	Owner, Design Professional, Consulting Engineers, Contractor
Preliminary Design Phase	MM/DD/YEAR	MM/DD/YEAR	Owner, Design Professional, Consulting Engineers, Contractor, Commissioning Provider
Construction Documents Phase (Refer to schedule for early bid packages)	MM/DD/YEAR	MM/DD/YEAR	Owner, Design Professional, Consulting Engineers, Contractor, Commissioning Provider
Agency Review & Bidding Phase (Contractor)	MM/DD/YEAR	MM/DD/YEAR	Owner, Design Professional, Consulting Engineers, Contractor, Commissioning Provider
Closeout (Design Team)	MM/DD/YEAR	MM/DD/YEAR	Owner, Design Professional, Consulting Engineers
Closeout (Contractor)	MM/DD/YEAR	MM/DD/YEAR	Owner, Contractor, Commissioning Provider

4.0 – MODEL PLANNING

Identify BIM Models that will be created (ie. Design Professional, Structural, MEP, etc.), who the model managers will be from each party responsible, naming convention of BIM files that will be used for final model deliverables, and level of detail utilized at each phase.

4.1 – MODEL MANAGERS

Each party—such as the Owner, Design Professional, Contractor, or Subconsultants—that is responsible for contributing modeling content should assign a model manager to the project. The model manager from each party has a number of responsibilities. They include, but are not limited to:

1. Transferring modeling content from one party to another
2. Validating the level of detail and controls as defined for each project phase
3. Validating modeling content during each phase
4. Combining or linking multiple models
5. Participating in design review and model coordination sessions
6. Communicating issues back to the internal and cross-company teams
7. Keeping file naming accurate
8. Managing version control
9. Properly storing the models in the collaborative project management system

Stakeholder	Model Manager	E-mail	Phone
company name	name	name@name.com	p. 555-555-5555
company name	name	name@name.com	p. 555-555-5555
company name	name	name@name.com	p. 555-555-5555
company name	name	name@name.com	p. 555-555-5555
company name	name	name@name.com	p. 555-555-5555
company name	name	name@name.com	p. 555-555-5555
company name	name	name@name.com	p. 555-555-5555

4.2 – PLANNED MODELS

In the table below, outline the models that will be created for the project. List the model name, model content, project phase when the model will be delivered, the model's authoring company, and the model-authoring tool that will be used. For models that will not be used or created in your project, just leave the row blank, and add rows for model types you anticipate needing that are not already listed.

Model Name	Model Content	Project Phase	Authoring Company	Authoring Tool
Design Professional Model	Design Professional building and component objects, code information, Room area information	SD,DD, CD, Construction, Closeout	Design Professional company name	Autodesk Revit Design Professional
Lab Furnishings Model	Design Professional Casework and Fixed Furnishings	DD, CD, Construction, Closeout	Consultant company name	Autodesk Revit Design Professional
Survey / Civil Model	Topography, site utilities to within 5 feet of perimeter, hard and soft surfaces, other site objects	SD, DD, CD Construction, Closeout	Survey Engineer company name	Autodesk Civil 3D
Structural Model	Structural column and beam members, bearing and shear walls, foundations, analytical structural model, lintels	DD, CD, Construction, Closeout	Structural Engineer company name	Autodesk Revit Structure
Mechanical Model	Mechanical systems, equipment, load information, utilities within 5 feet of building perimeter, Space/ Zone objects	DD, CD, Construction, Closeout	Mechanical Engineer company name	Autodesk Revit MEP
Electrical Model	Electrical systems, equipment, load information, utilities within 5 feet of building perimeter	DD, CD, Construction, Closeout	Electrical Engineer company name	Autodesk Revit MEP

Model Name	Model Content	Project Phase	Authoring Company	Authoring Tool
Plumbing Model	Plumbing systems, equipment, load information, utilities within 5 feet of building perimeter	DD, CD, Construction, Closeout	Plumbing Engineer company name	Autodesk Revit MEP
Energy Model	Energy data, run iterations, life cycle costing, peak loads	DD, CD	Company name	Software compatible with Commercial Building Tax Deductions per energy.gov
Construction Model	Scheduling information, sequencing information Fabrication models	Construction, Closeout	Construction company name	Autodesk Revit, NavisWorks
Estimate Model	Costing data, quantity takeoffs to be derived from Design Professional's design intent model utilized and further developed by Contractor	SD, DD, CD	Construction company name	Quantity Takeoff and Onscreen Take off.
Coordination Model	Design Intent Models, Construction Models, and Fabrication information	Construction	Design intent models by Design Taam. Construction and Fabrication models by Construction Team.	Autodesk NavisWorks / (Revit TBD)

4.3 – BIM FILE NAMES

File Names for Models Should Be Formatted as:	
DISCIPLINE-Project Number-Building Number.rvt (example: ARCH-20090001-BL001.rvt).	
Design Professional	ARCH-****-*****.rvt (final model name)
Lab Furnishings	LABF-****-*****.rvt
Survey/Civil Model	CIVL-****-*****.dwg (2010)
Structural Model	STRC-****-*****.rvt
Mechanical Model	MEP-****-*****.rvt (note all MEP models will be contained in a single
Electrical Model	MEP-****-*****.rvt (note all MEP models will be contained in a single
Plumbing Model	MEP-****-*****.rvt (note all MEP models will be contained in a single
Energy Model	ENRG-****-*****.pd2
Construction Model	CNST-****-*****.nwf / .dwg
Estimate Model	COST-****-*****.rvt
Coordination Model	COORD-***.*****.nwf/.nwd

4.4 – PRECISION AND DIMENSIONING

Models should include all appropriate dimensioning as needed for design intent, analysis, and construction. With the exception of the exclusions listed below, the model will be considered accurate and complete. In the table below, enter which items' placement will not be considered entirely accurate and should not be relied on for placement or assembly.

Items that Will Not Be Considered Accurate for Dimensioning or Placement
Design Professional –
Structural –
Civil –
MEP –

Lab Furnishings –
Construction –

4.5 – MODEL ATTRIBUTE DATA / COBIE DATA PLANNING

Specify model component COBie data. The Design and Construction Team will be required to add information to the BIMs that will add value to UGA's facility management systems. In support of COBie, the Project Team is required to utilize and develop COBie schedules within the BIM model that captures data information from the model for export to COBie worksheets.

The Design and Construction Team is expected to understand data requirement for all phases of the work, and should show how data capability requirements influence the planning and collaboration for this project. Diagramming and listing expected data requirements and processes, solving workflow dynamics for the collaborative team will address the intent of the BIM Project.

Develop detailed component lists along with required data fields for each component to be captured and exported to COBie. Coordinate which parties on the Design and Construction Teams are responsible for delivering data at each phase of the project and how data will be consolidated and delivered so that it meets the requirements for transfer into UGA's facilities management program.

4.6 – MODELING LEVEL OF DETAIL

Specify the level of detail in your models below. The level of detail can be defined by exclusions and/or by object size. The level of detail described here should reflect descriptions listed within the AIA E202.

Size: Any object smaller than 1" will not be included in the model. Unless otherwise required to meet requirements of describing design intent and construction documentation requirements.

4.7 – MODELING PLAN

AIA form E202 will be utilized as a basis for developing a detailed modeling plan. The following outlines model plan objectives at each phase. *Edit and further develop the following outline as required to communicate and coordinate model development to meet the requirements and objectives of the UGA BIM Requirements and Guidelines.*

4.7.1 – PRE-DESIGN / CONCEPTUALIZATION

Objectives & Responsibilities: Provide initial design based on conceptual parameters established by the Owner; ensure that code and zoning requirements meet project objectives. Provide Program of Requirements and all space considerations for reference in the model. If a BIM model is established at this phase then establish a 3D reference point for future model coordination.

Model Roles: Describe what kind of model will be developed and by what program. The role of this model will be to depict the visual concept and general layout of the project along with space requirements, along with other requirements as described in the UGA BIM Standards.

4.7.2 – SCHEMATIC DESIGN PHASE

Objectives: Provide spatial design based on input from the Conceptualization / Program of Requirement phase; provide initial design for building system and attributes including Design Professional, Structural, and MEP; identify initial coordination issues between building systems and 3D reference point for model coordination; if Contractor has been selected, then Contractor to receive input from suppliers and fabricators regarding system cost, placement, fabrication and scheduling.

Model Role & Responsibilities: The Design Professional model will show the general design and layout of the building structure and act as the baseline for all other subsystem designs, such as MEP and Structural models. The subsystem designs are only required to be narratives at this phase. Additional information may be provided by subsystem consultants during this phase as they see fit. The Design Professional model will be used to inform the Energy Models at this phase. Address how model development will meet the requirements of the UGA BIM Requirements and Guidelines.

COBie Data: Establish schedules and project parameters in the BIM model that will become the basis for exporting model data to COBie worksheets. Submit initial COBie data worksheets as describing in the UGA BIM Requirements and Guidelines.

4.7.3 – PRELIMINARY DESIGN (DESIGN DEVELOPMENT)

Objectives: Provide developed design of building and building systems; resolve coordination issues between building systems; if a Contractor is on board at this phase of the project then a combined (Design Professional/Structural/MEP) Design Intent Model(s) will be provided to the Contractor for use in his development of a Construction Model capable of analyzing schedule, cost, and constructability.

Model Roles & Responsibilities: The Design Professional model will continue to act as the baseline for all other subsystem designs. The subsystem designs will be modified accordingly to represent the enhanced design. Once the baseline conceptual structure has been created, the Design Professional's model manager will send the model to the Subconsultants so they can develop their designs. The Consulting Engineers' designated model managers will audit and deliver the completed models to the Design Professional's model manager. The Design Professional's model manager will review the models to ensure compliance with the phase requirements. Once the models meet the requirements, the Design Professional's model manager will link or combine cross-disciplinary models. The Design Professional's model manager should coordinate with the Consulting Engineers' model managers to eliminate duplicate or redundant objects. The Consulting Engineers' model managers will use the Design Professional model to revise and complete their designs. Once the models are complete, the Consulting Engineers' model managers will deliver their models to the Design Professional's model manager. The Design Professional's model manager will review the models to ensure compliance with the phase requirements. The Design Professional's model manager will provide the Contractor's model manager with the Design

Professional model and the Consulting Engineers' models. Elements or Components that will need to be duplicated between models will be documented and coordinated and a system developed for controlling the display of duplicate elements will be established through the use of work sets or other mutually agreed upon process.

COBie Data: Submit updated and additional COBie data worksheets as describing in the UGA BIM Requirements and Guidelines.

4.7.4 – CONSTRUCTION DOCUMENTS (CONTRACT DOCUMENTS)

Objectives: Finalize design of the building and all building systems, prepare documentation for agency review, and provide Design Intent Models that are the basis for all Contract Document Drawings, including all plans, elevations, sections, schedules and details needed for use in the construction of the project. Provide the Contractor a combined (Design Professional/Structural/MEP) Design Intent Model(s) that will be utilized in his development of a Construction Model capable of analyzing schedule, cost, phasing and constructability.

Model Roles & Responsibilities: All Design Intent Models will be used to reflect the design intent of the project and be the basis for all Contract Document Drawings, these models will become the basis for creating and updating the Record Models and Record Drawings. These models will then be used as the basis for generating the Construction Model(s). The Construction Model will be used for estimating, scheduling, phasing, and constructability analysis. The Construction Model(s) will also become the basis for future development of element and component data needed for the development and gathering of COBie data for periodic export into COBie worksheets.

COBie Data: Submit updated and additional COBie data worksheets as describing in the UGA BIM Requirements and Guidelines. Establish a schedule for future periodic COBie data worksheet updates to occur during the construction phase, along with final worksheet delivery at closeout.

4.7.5 – BIDDING PHASE

Objective: Revise Design Intent models based on agency feedback on all models. Incorporate feedback into Addenda. Design Team to update all Design Intent Models with Addenda as issued.

Model Roles & Responsibilities: The Design Intent Models will be adjusted to reflect agency feedback. The Construction Model will be enhanced and further used for estimating, scheduling, construction sequencing, trade coordination, and constructability analysis. The Design Professional's model manager will communicate agency comments back to the Design Team. The Consulting Engineers' model managers will revise their design models accordingly and submit them back to the Design Professional. The Design Professional's model manager will provide the Contractor's model manager with the Design Professional model and the Consulting Engineers' models.

COBie Data: No COBie data requirements at this phase.

4.7.6 – CONSTRUCTION PHASE

Objective: Update Design Professional and Consulting Engineers' models based on submittals, RFIs, or owner-directed changes; maintain the Construction Model based on construction activities. The Construction Team will submit RFIs and submittals through the collaborative project management system.

Model Roles & Responsibilities: The Design Professional and Consulting Engineers' Design Intent Models will be revised throughout construction, based on owner directives and As-Built comments. The models will always reflect the revised contract documents with the exception of those items listed as excluded in this BEP. The Construction Model will be used for scheduling analysis, construction sequencing, delegated design component development and trade coordination. Establish and document any departures from concurrent modeling between Design Intent and Construction Models, for example, it may be desirable to maintain the original Design Intent Model as a record of the originally designed mechanical system as designed by the Mechanical Engineers as a reference point for evaluating and comparing any re-designed mechanical systems made by the Mechanical Subcontractor as a result of delegated design responsibilities. The Design Professional's model manager will work with their Consulting Engineers to answer the RFIs and submittals and adjust the models accordingly. The Contractor's model manager will update the Construction Model and will work with the Design Professional to develop the Design Professional and Consulting Engineers' models.

COBie Data: Submit updated and additional COBie data worksheets as describing in the UGA BIM Requirements and Guidelines. Establish a schedule for periodic COBie data worksheet updates to occur during the construction phase, along with final worksheet delivery at closeout. Establish a plan for consolidating COBie data that will be exported and generated by multiple models potentially, with multiple party responsibilities that will be acceptable and useable by the Owner's end-user parties.

4.7.7 – CLOSEOUT (DESIGN TEAM)

Objective: Use the Design Professional and Consulting Engineers' Design Intent Models for facility management, with the possibility of use in ongoing operations for future additions, renovations, etc.

Model Roles & Responsibilities: The Design Professional and Consulting Engineers' models will be used to represent the actual assembly of the building from construction with the exception of those items listed as excluded in this BEP. If Construction Models are more representative than Design Intent models of actual As-Built components such as mechanical System, then formulate a plan for combining differing models. The Design Professional will deliver the Record Design Intent Model(s) and Record Drawings at the end of the project to the Owner.

COBie Data: The Design Team will coordinate with the Construction Team to deliver a coordinated and consolidated COBie worksheet deliverable at closeout.

4.7.8 – CLOSE-OUT (CONSTRUCTION TEAM)

Objective: Use the Contractors Construction Model(s) as the basis for all final component data derived from shop drawing submittal process needed for UGA Physical Plant operations and facilities management.

Model Roles & Responsibilities: The Contractor's models will be used to represent the actual assembly of the building from construction, and will be utilized in generating the final As-Built Model and Documents. It will also be used as the basis of COBie data associated with actual product selection as the result of the shop drawing and submittal processes. The Contractor will deliver the As-Built Construction Model(s) and As-Built Documents at the end of the project to the Owner.

COBie Data: The Design Team will coordinate with the Construction Team to deliver a coordinated and consolidated COBie worksheet deliverable at closeout.

00 00 11
AESTHETIC AUTHORITY

1. **GENERAL**
    A. Aesthetic opinions and evaluations by a Design Professional are advisory only – and not binding on UGA. OUA reserves the right for final aesthetic judgment.

00 00 12
CLIENT & END USER INTERFACE
For Projects Administered by OUA or FMD

1. **GENERAL**
   A. The Design Professional and Contractor shall take directions that modify the scope of work or project timeline only from the UGA Project Manager. The person or entity that will occupy the Project is not authorized to modify the scope of work or project timeline. For projects administered by OUA, FMD is not authorized to modify the scope of work. For projects administered by FMD, OUA is not authorized to modify the scope of work or project timeline.

Office of University Architects
for Facilities Planning
UNIVERSITY OF GEORGIA

00 00 13
DESIGNING LEARNING ENVIRONMENTS

1. **GENERAL**
   A. Related sections:
      i. 09 00 00 – General Finishes Requirements
      ii. 09 80 00 – Acoustical Treatment
      iii. 11 52 00 – Audio Visual Equipment
      iv. 11 52 13 – Projector Screens
      v. 12 00 00 – General Furnishings Requirements
      vi. 12 46 33 – Interior Waste Receptacles
      vii. 12 56 52 – Audio-Visual Furniture
      viii. 22 00 00 – General Plumbing Requirements
      ix. 23 00 00 – General Mechanical Requirements (HVAC)
      x. 26 00 00 – General Electrical Requirements
      xi. 26 51 00 – Interior Lighting
      xii. 27 00 00 – General Communications Requirements
      xiii. 27 41 00 – General Audio-Visual Systems Requirements
      xiv. 27 41 00.01 – Audio-Visual Control System

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1.0 - FOREWORD

Building and adapting learning spaces to support the continuing change of pedagogy and technology at the University of Georgia (UGA) provides many challenges; however, there are a number of evidence-based reasons to pursue excellence in learning space design. Research has shown that active learning techniques provide clear improvements in learning[1], but a majority of the current teaching spaces at UGA don't easily lend themselves to support these pedagogies. The Georgia Board of Regents has long supported the creation of classrooms with a standard level of quality that includes a "flexibility to respond to future requirements."[2] One of the operative goals is "to develop and implement a well-conceived and consistent concept for how technology requirements can best be accommodated in designing new and renovated facilities."[2] A lack of compliance to these minimum standards creates a clear challenge to effective learning according to research.[3] It is vital that all classrooms have appropriate furniture, correctly maintained classroom technology, and proper physical design and maintenance. All of these have been shown to have a direct effect on learning outcomes [3] and student success.

This document has been a joint effort between the UGA Office of University Architects and the Center for Teaching and Learning to provide relevant standards and guidelines for the design and construction of new classroom space and the renovation and maintenance of existing spaces. Outside consultants have been included in this process to ensure that current best practices in the fields of architecture, design, construction, and technology have been brought together with the current research regarding teaching and learning. The result provides clear direction for the effective design and development of learning environments at UGA.

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[1] Summary of Key Papers on Efficacy of Active Learning (2012).
http://cst.yale.edu/sites/default/files/active learning bibliography.pdf

[2] Facilities Guidelines For Instructional Technology (2001).
http://www.usg.edu/facilities/documents/facilities_it_guidelines.pdf

[3] Making the Case for Space: Three Years of Empirical Research on Learning Environments (2010)
http://www.educause.edu/ero/article/making-case-space-three-years-empirical-research-learning-environments

Space Matters: The Impact of Formal Learning Environments on Student Learning (2010)
https://www.bgsu.edu/content/dam/BGSU/master-plan/documents/space-matters.pdf

Minimum Classroom Size and Number of Students Per Classroom (2000/2009)
http://sdpl.coe.uga.edu/research/territoriality.html

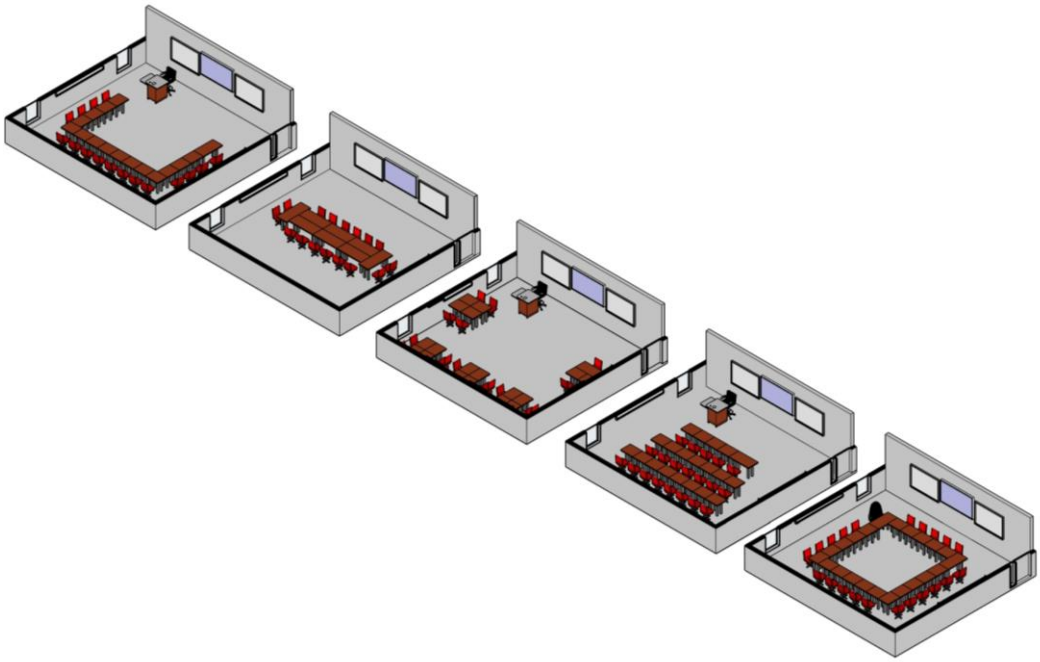
2.0 – BACKGROUND & SCOPE

With the University of Georgia's continuing development of educational pedagogy, it is clear that new design requirements and best practices are needed. This section is to be referenced during the design of learning environments at the UGA to ensure that all classrooms are consistent with current teaching practices. The considerations highlighted should be part of the design conversation at the earliest stages of both new construction and renovation projects.

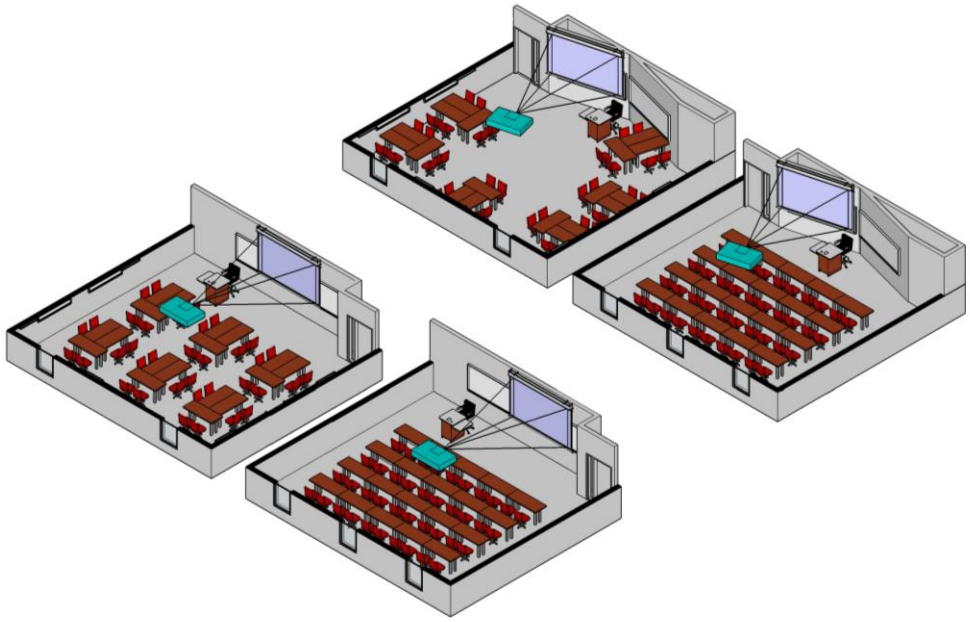
The UGA understands the design of each individual project is a unique and dynamic process, in which the project has specific goals and needs. These specifics may not be covered in the guidelines; however, the intent of the learning environment should be honored. The Design Professional is to communicate with UGA regularly about the quality of project specific learning environments, and any questions should be directed to the Project Manager. If there is a valid reason to deviate from the Standards, the Design Professional shall submit a Variance form per Section 00 00 05 Variance Requirement & Form. To fully capitalize on the benefits of the University's educational pedagogy and availability new technologies, learning environments should strive to not be static physical spaces which support only one-way transmission of information. This idea should not be limited to new learning environments, but should also be upheld during renovation of existing spaces.

This section outlines requirements and best practices for the following classroom types:

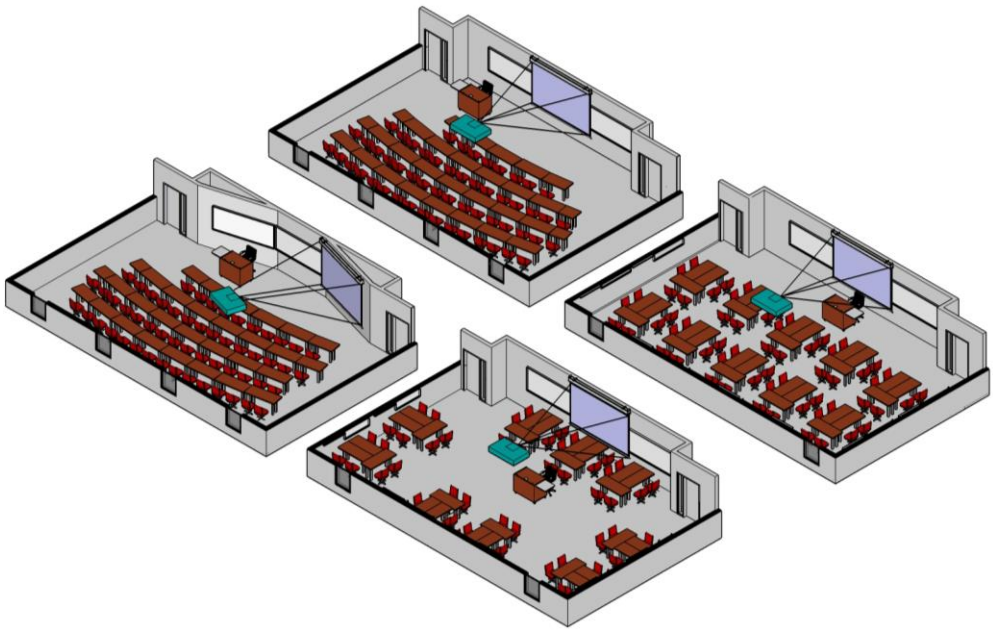
1. 10 to 20 seat flat lecture, seminar, conference, and active learning classrooms.



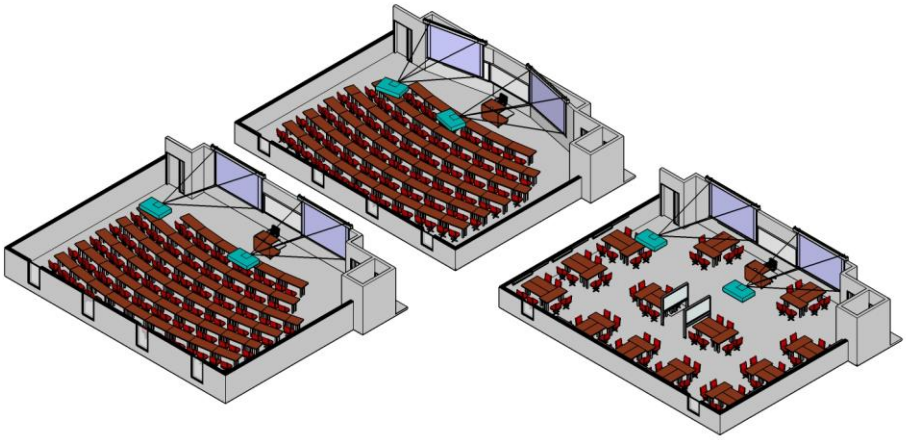
2. 20 to 49 seat flat lecture and active learning classrooms.



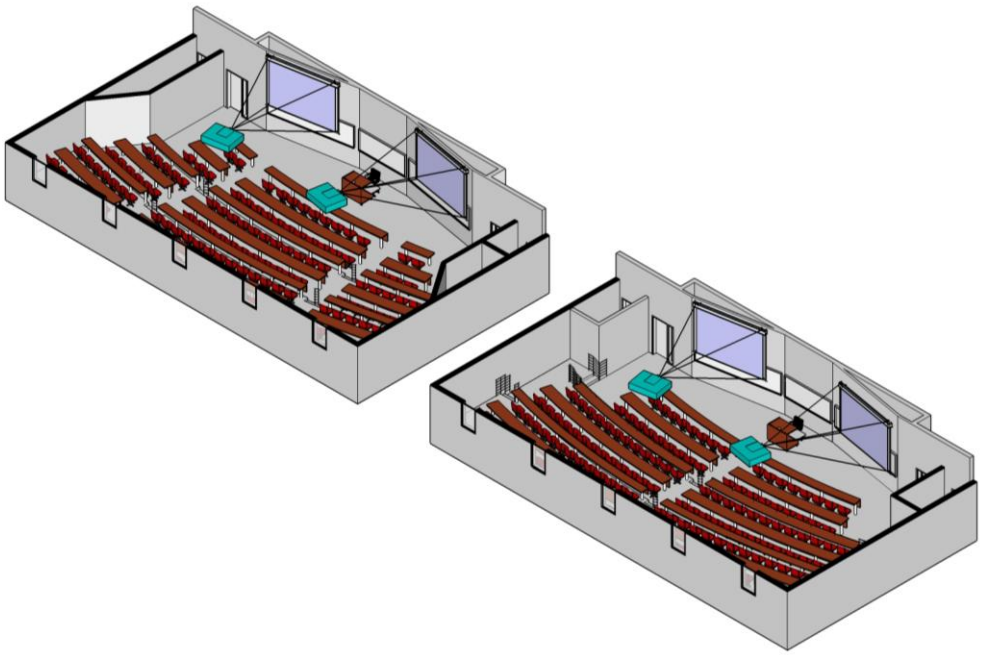
3. 50 to 60 seat flat lecture and active learning classrooms.



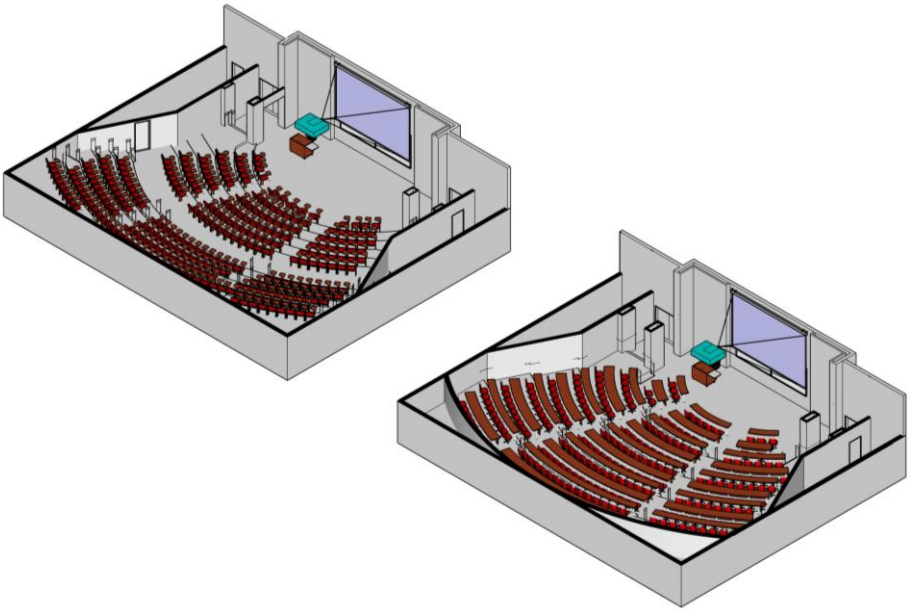
4. 60 to 100 seat flat lecture and active learning classrooms.
   (Note: projectors should be located above aisleways to facilitate maintenance access)



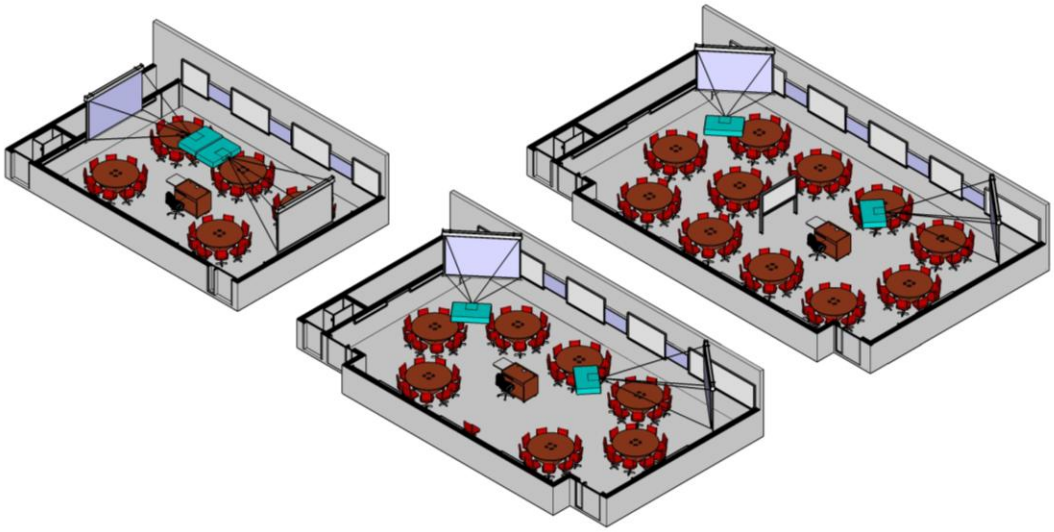
5. 100 to 120 seat tiered collaborative lecture classrooms.
   (Note: projectors should be located above aisleways to facilitate maintenance access)



6. 200 to 280 seat tiered collaborative lecture, and traditional lecture halls.



7. 45, 72, and 99 seat SCALE-UP classrooms.



3.0 – GENERAL CONSIDERATIONS

3.1 – New Construction vs. Renovation

There are a variety of ways that instructors teach and students learn, and there is a wide range of ways that those interactions manifest in the physical environment. Spaces that were once considered appropriate for a certain classroom sizes and teaching styles may no longer be appropriate. In these situations, special considerations must be taken during the renovation of existing classrooms. The Design Professional must be in communication with UGA to determine the best use for existing spaces to support the current instruction methodology. Renovations to existing learning environments should hold true to the intent of the classroom design guidelines.

3.2 – Goals

The goal of the Design Professional is to provide learning environments in which the values inherent in traditional instruction are upheld, but easily adapt to allow collaborative learning scenarios. The classroom should be easily adaptable to enable new opportunities and universal access.

The following goals[4] should be addressed during the design of learning environments:

1) Flexibility
2) Accessibility
3) Life Cycle
4) Cost Benefit

[4] The goals outlined are adapted from the Board of Regents of the University System of Georgia's *Facilities Guidelines for Instructional Technology, 2001.*

The **flexibility** of classrooms is encouraged so that a variety of learning scenarios may take place in each classroom, as required by the end user. When necessary, multiple furniture layout scenarios may be considered in the overall design of the classroom. Additionally, the flexibility of the systems provided in the classroom may be necessary for students to access instructional courses via alternative modes of delivery. The required flexibility of the classroom will inform the adaptability and scalability of the furniture and systems provided in the instructional space.

Learning environments should not only be physically **accessible** (so that they conform to ADA requirements), but should also be technologically accessible to all students and instructors. Equipment, furniture, and other technology must be easily accessed and manipulated by end users.

The typical **life cycle** of finishes, furniture, and equipment should be considered during the design of learning environments, as they relate to the overall operational life cycle of the building in which it resides. The selection and location of classroom elements should meet requirements outlined in the UGA Design and Construction Standards, as well as allow for easy maintenance and replacement within each classroom.

Cost benefit analysis must always be taken into consideration during the design of learning environments. The guideline outlines considerations to be taken during the design of classrooms; however, the extent to which best practices are followed should be determined on a case-by-case basis. The Design Professional should determine if certain recommendations are the most cost-efficient solution for each instructional space, or if other options are available that meet the intent of the guideline.

4.0 – CLASSROOM GENERAL DESIGN CRITERIA

This portion outlines necessary design characteristics that must be considered during the design of learning environments. The scale of considerations varies from the location of specific classroom within an overall building to providing finish protection in high traffic areas. All considerations intend to help each classroom perform at a high level for UGA.

4.1 – LOCATION

Classroom spaces shall be located as close as possible to building entrances and level accesses to improve circulation and reduce noise levels in other parts of the building. Large classrooms shall be located close to primary building entrances. Circulation spaces which support large classrooms should be sized so that they accommodate students waiting in the hallway for the next class session.

It may be desirable for smaller classrooms to be located closer to offices and/or related lab spaces. The location of small classrooms should be discussed with end users to determine special requirements for circulation spaces and programmatic adjacencies.

When possible, classrooms should be separated from noise generating areas such as mechanical rooms, elevators, vending areas, and restrooms. When separation from these functional areas is not possible,

ensure that adequate noise separation is provided. Please refer to the Acoustics Section 4.8 of this guideline.

The location of certain classrooms in relation to their solar orientation impacts their access to natural daylight considerably. The Design Professional should discuss with the end user whether natural daylighting is beneficial or should be avoided (i.e. easily controlled). Classrooms with northern exposure may be more easily designed to provide comfortable natural daylighting capabilities while not adversely impacting AV systems, as well as be more energy-efficiency than rooms with windows facing other cardinal directions. Passive solar design features should be considered for rooms where windows face south, east, and west.

4.2 – SIZE & PROPORTION

Classrooms must be designed so that they comfortably accommodate the number of students planned for each classroom type, as well as the types and sizes of furnishings anticipated to be used in the space. The UGA Center for Teaching and Learning shall be involved in any discussions that concern classroom functions and/or seating capacities. The Design Professional shall coordinate with the Project Manager to assist with including the UGA Center for Teaching and Learning in design meetings.

The following space standards and furnishing types shall be used to estimate the total usable floor area of classrooms during the programming phase of a project:

SF Per Student	Room Type	Capacity	Anticipated Furnishings
30-52	Small Classrooms: Lecture, Seminar, Conference, and Active Learning	10-20	Moveable tables and chairs
27-31 25-29	Medium Classrooms: Lecture, and Active Learning	20-49 50-60	Moveable tables and chairs
20-25	Large Classrooms: Lecture, and Active Learning	60-100	Moveable tables and chairs
20-22 15-18	Tiered Classrooms: Collaborative, and Traditional Lecture Hall	100-120 200-280	Fixed tables and movable Chairs Traditional Lecture Hall – Tablet arms acceptable
21 21 19	SCALE-UP Classrooms	45 72 99	Fixed tables and movable chairs.

The Design Professional shall develop applicable classroom furnishing layouts during the schematic design phase to verify that the proposed classroom sizes and shapes successfully accommodate the number of students programmed for each space.

Classroom proportions have a considerable impact on seating capacity, sight lines, and instructor / student interaction. There are no set required proportioned for classrooms; however, the Design Professional should keep these common issues in mind during the design process:

Classrooms that are too wide make it difficult for instructors to maintain eye contact and typically have poor sightlines. This issue is especially significant for students located in the front corners of the space. Instructor areas are often deeper than necessary in order to avoid this issue. This is not typically an issue for non-traditional style classrooms, i.e. SCALE-UP classrooms.

Classrooms that are too deep make it difficult for students in rear rows hear what is said, see projected images, and see notes on markerboards. Special consideration must be taken into account for the acoustics of large classrooms to ensure that students are able to hear all necessary instruction. Additionally, projected images must be adequately sized so that all students are able to see classroom instructional information.

Highly adaptable small classroom, which accommodate seminar classes, should avoid long rectangular proportions. Elongated proportions for this instruction type inhibit eye contact between students and instructors, and diminish the view angles of classroom participants to projected information. To encourage interactive discussion while providing good sight lines, rooms that are nearly **square or have a shape based on viewing angles** from projection screens / flat-panel monitors are the most successful and adaptable for all small classrooms' instruction type.

When walls are the first items laid out in classrooms, and subsequently furniture layouts are tested; it is difficult to verify that students have quality sight lines and instructor areas are adequately sized. The following are recommendations for developing classrooms with good sight lines and efficient seating layouts:

1) Determine number of screens based on seating capacity and classroom type.
2) Determine the general location, size, and orientation of each screen based on the seating area.
3) Determine the location and size of the instructor area based upon the required markerboards, projection screens, and other equipment necessary for the classroom type.
4) Make certain the instructor area is large enough to accommodate the instructor workstation, required equipment, and ample circulation around workstation, markerboard, and seating. Ensure that the instructor station is not directly in the light path of a front-screen projector.
5) Determine optimum width and depth of the seating area based on seat spacing guidelines, provided in each of the typical classroom layout sections.
6) Determine the location and size of access aisles.
7) Draw viewing angles from each screen and make certain all seats provided fall within them.
8) Finally, determine where the walls of the classroom should be located.

4.3 – Sight Lines & Viewing Angles

The Design Professional should provide recommendations for existing ceiling height. If the existing ceiling height does not work, the Design Professional should notify the Project Manager to resolve concerns.

The Design Professional is responsible for coordinating with the Audio-Visual Consultant to ensure all seats have good sight lines. If any seats have marginal sight lines, the Design Professional must bring this to the attention of the Project Manager.

The size of the projected image should follow current industry standards.

The farthest viewer should be placed no further than five times the height of the screen. Example: if the screen is six feet tall, the farthest viewer should be no further than 30 feet from the screen.

The closest viewer should be no closer than one and a half times the width of the screen. Example: if the screen is six feet wide, the first viewer should be no closer than nine feet from the screen.

In flat floor classrooms, the bottom of the projected image is recommended to be a minimum of 48” above the finished floor (AFF); however, 54” AFF is preferred. The Design Professional should keep in mind that combining the 5H screen sizing factor with the 48” AFF image requirement will have a significant impact on the ceiling height of larger learning spaces. Strategies such as favoring wider rooms over deeper rooms (thus reducing the distance to the farthest viewer) and/or routing ductwork around the front-center area of the room such that the ceiling elevation can be raised in the projection screen area should be considered.

SCALE-UP classrooms shall have smaller sized projection screens which are located on multiple walls of the classrooms between groups of tables to allow students to see content without having to rotate their seats away from their work surface.

4.4 – Seat Spacing

Student Seating Scenario	Minimum Chair Spacing (Inches) On Center (O.C.)
Moveable Chairs at Movable Desk	30” O.C.
Movable Chairs at Fixed Desk	28” O.C.
Fixed Chairs w/ Tablet Arms*	24” O.C.

*Center for Teaching and Learning shall be notified of intent to have fixed seats and approve application as early as possible in the design phase and prior to completion of schematic design.

Fixed tables with movable chairs are provided in larger collaborative tiered classrooms. Seating should be spaced a minimum of 28” on center. Continuous work surfaces should be a minimum of 18” deep, and should be equipped with modesty panels. Provide 36” clear between work surfaces in rows up to 20 seats. Consider providing 38” clear in rows with more than 21 seats. To ensure that students have adequate knee clearance in the collaborative fixed table scenario, the work surface in the rear of the grouping should have a 4” to 6” overhang.

Fixed chairs with tablet arms are only acceptable in large tiered lecture halls with 200-280 seats. The minimum seat spacing in this scenario is 24” on center. A minimum of 12” clear is to be provided between edge of the tablet arm (when in use) and back of seat in front.

When classrooms have tiered seating, and their occupancy is large enough that they are considered assembly areas, additional consideration must be given to aisle clear dimensions. Aisles and handrails provided in assembly areas should be sized and located to conform to building and fire codes.

4.5 – Doors & Windows

Classroom entry doors with visual connection to corridors should be used whenever possible. Visual connection may be achieved by providing glass sidelights or vision panel within the door itself.

In small classrooms, where only one entry is provided, doors should be located away from the instructor to avoid bottlenecking at door.

In large classrooms, locate doors so that students entering class late minimally distract from instruction. In classrooms where lights are dimmed, light may seep in from corridors, which could diminish the contrast ratio of projected information. Doors should be located to reduce the impact of light entering from corridors. In larger tiered classrooms, it may be helpful to locate entry doors at the rear of the classroom or within entry vestibules to help minimize light spillover from the hallway.

Transoms are encouraged above doors to increase natural daylight into corridors. Care should be taken to ensure that direct sunlight is kept off of projection screens and/or that transoms are provided with proper shading controls.

Special consideration must be taken in locating windows in classrooms spaces. Instructor areas should not be located along window walls. Certain instructional classroom types necessitate locating markerboards and projection surfaces on a majority, if not all, of the classroom walls. When this is a possibility, windows are most conveniently located above and/or below markerboard space. When it is not possible to locate windows in this fashion, the Design Professional should strategize how to provide adequate collaborative equipment without conflicting with window locations.

Certain classroom types require blackout capabilities, especially distance learning classrooms. Locate these classrooms accordingly within the building. If windows are provided in these spaces, ensure that adequate window shading is provided.

4.6 – FINISHES

Refer to Section 09 00 00 General Finishes Requirements.

4.7 – FURNITURE & EQUIPMENT

Refer to Section 12 00 00 General Furnishings Requirements.

Instructor Area

A minimum of 8’ clear space parallel to the instructor wall (10’ preferred) shall be provided in small and large lecture style classroom layouts. Instructor areas are to accommodate computer-based audio-visual systems. Provide floor and/or wall junction boxes for power / data / audiovisual systems wiring to serve

the workstation. The floor junction box should be a minimum of 5 feet from the front wall in small classrooms and a minimum of 6 feet from the front wall in large classrooms. Instructor areas are to accommodate instructors who are standing, seated, or using wheelchairs.

Workstation features and location considerations:

1) Workstations should be oriented to maximize eye contact between instructor and students, while allowing students to see projected media.
2) In rooms with one screen, an instructor workstation on the left side of the instructor area, markerboards in the center, and a screen in the right corner is preferred.
3) In large rooms with multiple screens, a workstation located on the left side of the instructor area, near the markerboard, usually works well, but a more central location may be preferable.
4) Provide adequate circulation space around lectern and surrounding equipment / furniture. The minimum clear dimension is 36”; however, 48” is preferred. For larger spaces, 48” is a minimum distance from the front wall.
5) The type / size of the lectern is to be determined by the classroom type. Refer to Section 12 56 52 Audio-Visual Furniture for listing of recommended lectern types and sizes.

Additional Considerations:
Consider providing an additional small table within instructor area in large lecture classrooms for disbursement and collection of classroom handouts. Should additional tables and/or equipment (i.e. demonstration table) be required and located within instructor area, include these items in preliminary classroom layout. Carefully locate the required equipment and j-boxes in the instructor area so that tripping hazards are avoided.

Student Seating

Refer to Section 12 00 00 General Furnishings Requirements. This section also includes minimum chair spacing information which is critical when initialing laying out classrooms.

Interior Waste Receptacles

The designer should plan for efficiently sized waste receptacles near exit doors in locations that do not obstruct other room functions. Refer to Section 12 46 33 Interior Waste Receptacles.

Provide a large clock that is easy to read and can be seen by instructors and students.

Audio-Visual Furniture

Using similar lecterns from classroom to classroom simplifies instructor equipment training, and makes classrooms more technologically accessible. Refer to Section 12 56 52 Audio-Visual Furniture.

4.8 – ACOUSTICS

Numerous studies over the past several decades have concluded that transmission of the spoken word from talker to listener is of primary importance in any learning environment to enhance learning, minimize listener fatigue, promote the retention of information, and reduce distractions from unwanted

noises. As learning pedagogies evolve from traditional models (i.e. a one-to-many delivery paradigm) to more active model (e.g. group discussion / interaction), the transmission of intelligible speech within the room and the overall behavior of a space acoustically becomes even more critical. Additionally, the current trend in architecture towards less "soft goods" in a space (i.e. concrete floors, exposed concrete or metal deck ceilings, etc.), whether to meet sustainability goals or to meet a design aesthetic, can often run counter to a classroom's acoustical needs and primary functional intent.

To address the successful transmission of intelligible speech – whether from instructor to student, student to instructor, or student to student – three separate but related acoustical areas of concern must be addressed:

1) Room acoustics pertaining to surface finishes and room geometry
2) Background noise levels, primarily HVAC systems and
3) Sound isolation from exterior noise intrusion (i.e. from adjacent rooms and lobbies / corridors, as well as outside noise from traffic, cooling towers, transformers, etc.)

If all three of these areas are properly addressed, the dependence on speech reinforcement systems (i.e. lavaliere microphones, digital mixers, etc.) can be eliminated for all but the largest lecture halls. Eliminating speech reinforcement would result in lower initial project costs, as well as simpler operations and maintenance for the entire lifecycle of the classroom. Thus, the Design Professional should consider acoustics a primary design consideration for all learning spaces.

Below is an overview of each of the three areas of concern and design criteria and strategies for each:

Room Acoustics

Room finishes have the most dramatic impact on the intelligible transmission of speech within most classrooms, as well as the management of the overall noise level in a classroom for active learning spaces where multiple group discussions may be occurring simultaneously.

In general, classrooms and lecture halls should be designed to distribute sound absorbing materials among the major surfaces in the space (floor, ceiling and walls) while balancing other major design considerations such as durability, aesthetics, daylighting and cost. Reverberation times for classrooms should be targeted to meet an RT-60 criteria (i.e. the time it takes for sound to dissipate by 60 decibels) of less than 1 second for most classrooms and closer to 0.6 seconds for distance learning classroom.

A general strategy to achieve this reverberation time for these major surfaces is as follows:

Floors

For durability, hard-finish floors may be preferred. Where possible, low-pile carpeting is recommended classroom floor surface area to mainly reduce foot-fall traffic noise and introduce sound absorption to this major surface area, especially for distance learning spaces.

Ceiling

Acoustical ceiling tile with a noise reduction coefficient (NRC) of at least 0.70 should be at least 50% of the ceiling area for small rooms (10-20 occupants) and as much as 80% to 100% for large rooms (20 – 60 occupants). Rooms with a capacity of 100 or more occupants should use acoustical ceiling tile with a NRC rating of 0.90 over at least 80% of the ceiling area. As a strategy to promote the reflection of speech energy between instructors and students, the Design Professional can consider introducing some reflective ceiling elements (lay-in reflective panels or gypsum-board areas) in strategic locations in the ceiling area in balance with the absorptive areas around the perimeter.

Walls

Lastly, durable / tackable acoustical wall panels (with 1" thick fiberglass backing behind an acoustical transparent covering) should be considered for at least 25 percent of the room's wall area. Larger volume spaces are naturally more inclined to result in higher reverberation times. Thus, as rooms get larger, it is increasingly important to control reverberation and echoes (from large area, hard, parallel surfaces) through the use of absorptive room finishes such as acoustical wall panels.

Since many rooms contain parallel walls, it is often advisable to apply acoustical wall finishes to adjacent surfaces to address the flutter echoes from these parallel surfaces. Alternately, walls can be designed to be non-parallel to reduce the need for absorptive wall materials.

Background Noise Levels

To achieve a proper signal-to-noise ratio in a classroom (where the signal is the spoken word and the noise is the background noise level) the Design Professional must consider the design of the HVAC system (which is the primary contributor to background noise) as part of the acoustical environment of the classroom. Per ASHRAE guidelines classrooms should be designed to meet a background noise criterion of NC-30. Special purpose classrooms (e.g. distance learning, music classrooms, screening rooms, etc.) may require even lower background noise levels.

To achieve appropriate background noise levels, classrooms should be designed to be acoustically separated by physical distance and/or enhanced partition design (see the section to follow on sound isolation) from noisy mechanical rooms and primary duct runs. Noise-inducing HVAC equipment such as fan-coil units and VAV boxes should be positioned outside of the classroom envelope (usually outside the room over the hallways) and duct runs should be calculated to be long enough to reduce noise levels at any diffuser to be at least five points below the overall room criteria. Use of duct silencers is to be avoided and used as a last resort. The Design Professional shall discuss the specification of duct silencers with UGA prior to including them in the design. The need for duct silencers shall be supported by calculations to be submitted for review by UGA and Commissioning Provider. Duct cross-sections shall be increased to minimize system pressure drop where duct silencers are the only alternative to achieve desired noise levels. Equipment with the lowest noise signature should be selected, and duct work shall be laid out in such a way that attenuation is maximized.

Sound Isolation

Another contributor to acoustical distractions which can hamper a student's ability to maintain focus / attention in a classroom setting is the intrusion of unwanted, outside noise into the classroom. This intrusion can come from adjacent spaces (both vertically and horizontally adjacent), as well as from outside the building (cars, trains, mechanical equipment, etc.).

The first, and often easiest and cheapest, sound isolation strategy is to architecturally isolate noisy spaces, such as main mechanical rooms, from noise-sensitive spaces, like classrooms, early in the design process. When physical separation is not possible, enhanced acoustical wall, floor and ceiling constructions must be considered as the next line of defense. Walls between adjacent classrooms should go to structure and have a sound transmission class (STC) rating of at least STC-45. Walls with STC ratings of 50 to 55 should be used between classrooms equipped with sound systems. Typical classroom doors should be STC-30 or more, while noisier classroom types (i.e. music rooms) should have doors with STC-40 or more. With studies showing that some amount of daylight helps to enhance student attention, special consideration should be taken to weigh the benefits of day lit classrooms with the potential distraction from the noise intrusion through the glass. There are many high-STC glazing solutions available, but these solutions can often increase material costs significantly.

Recommendations[5] for classroom walls' sound transmission class (STC):

Adjacent Space	Sound Transmission Class Rating
Corridor, classroom (non-audio equipped), stair case, office, or conference room	STC-45
Classroom (audio equipped), learning clinic, break out space, or outdoors	STC-50-55
Restroom	STC-53
Music room, mechanical room, dining area, gymnasium, or natatorium	STC-60

Acoustics Summary

The acoustics guidelines and strategies noted above are very general in nature and are intended as a basic starting point for design. Each project has its own unique acoustics conditions that require analysis. It is recommended that the Design Professional include acoustical expertise on their team to address the overall implementation of the design best practices noted herein, as well as and address the unique acoustical issues of the project.

4.9 – ACCESSBILITY

[5] Recommendations based on the American National Standards Institute (ANSI) Section 12.6-2002

Accessible Workstations

Classrooms are to meet accessibility standards outlined by the Georgia Board of Regents, as well as the Department of Justice's Americans with Disability Act. Horizontal and vertical dispersion of accessible workstations is required in assembly areas which provide 300 seats and over. Adequate accessible vertical circulation must be provided when accessible workstations are vertically distributed within the classroom. Handicap students are to be provided with a choice of viewing angles equivalent to (or better than) viewing angles available to all other spectators.

Required Number of Accessible Workstations Per Classroom[6]:

Number of Seats Provided in Classroom	Number of Accessible Seats Required
4-25	1
26-50	2
21-150	4
151-300	5

Assistive Listening Systems

Refer to Section 27 41 00 General Audio-Visual System Requirements.

4.10 – AUDIOVISUAL SYSTEMS

Refer to Section 27 41 00 General Audio-Visual System Requirements.

Flat-Panel Monitors

Refer to Section 11 52 00 Audio Visual Equipment.

Projectors

Refer to Section 11 52 00 Audio Visual Equipment.

Projector Screens

Refer to Section 11 52 13 Projection Screens.

Audio Systems

Refer to Section 27 41 00 General Audio-Visual System Requirements.

[6] Information provided from ADA Standards for Accessible Design, 2010. Section 221.2.1.1. See for further information.

4.11 – LIGHTING / ELECTRICAL SYSTEMS

Lighting

Refer to Section 26 51 00 Interior Lighting.

Electrical Outlets

Refer to Section 26 00 00 General Electrical Requirements.

4.12 – BUILDING SYSTEMS

Building systems shall conform to the Standards. The purpose of this guideline is not to provide technical requirements for building systems, but rather to bring common issues and concerns specific to classrooms, as they relate to building systems, to the attention of the Design Professional.

Heating, Ventilation, and Air Conditioning (HVAC)

Refer to Section 23 00 00 General Mechanical Requirements (HVAC).

Plumbing

Refer to Section 22 00 00 General Plumbing Requirements.

5.0 – GENERAL PURPOSE FLAT CLASSROOM

General purpose flat classrooms are intended to be highly flexible classrooms. The classroom should easily transition from the classic lecture layout to collaborative layout scenarios. Whenever possible, electrical outlets are to be wall mounted. A multiple compartment (power, IT, AV) floor junction box which services the instructor lectern is to be located in the most flexible area, allowing the instructor to connect in all seating layouts to be used in the classroom while minimizing trip hazards. Conversely power, IT and AV connections for the instructor station can be provided from a series of adjacent wall boxes if the teaching station is located within a few feet from a wall in a non-traffic area.
It may be desirable to provide canted walls at the instructor wall in classrooms sized to accommodate over 20 students. Canted walls improve the overall acoustics of the room, while also improving sight lines.

The layouts included in the guideline are not to scale, and are to be used for diagrammatic purposes only.

Typical Abbreviations	
FPM	Flat Panel Monitor
MB	Markerboard
J-BOX	Junction Box

PS	Projector Screen
AFF	Above Finished Floor
BO	Bottom Of

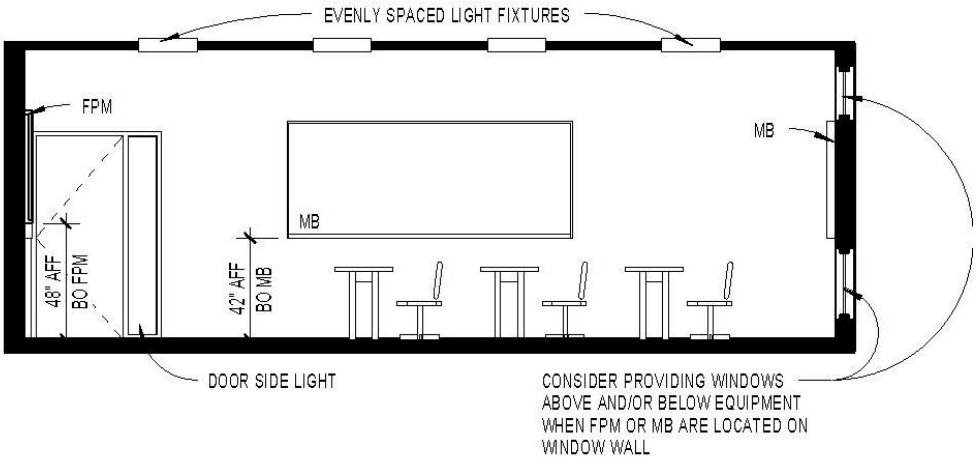
5.1 – 10 TO 20 SEAT LECTURE, SEMINAR, CONFERENCE, & ACTIVE LEARNING CLASSROOMS

Individual tables may be preferred in small classrooms to allow for the most flexibility for seating arrangement. The minimum individual desk size is 30” wide x 24” deep. If double occupant desks are preferred, 60” wide x 24” deep desks are acceptable.

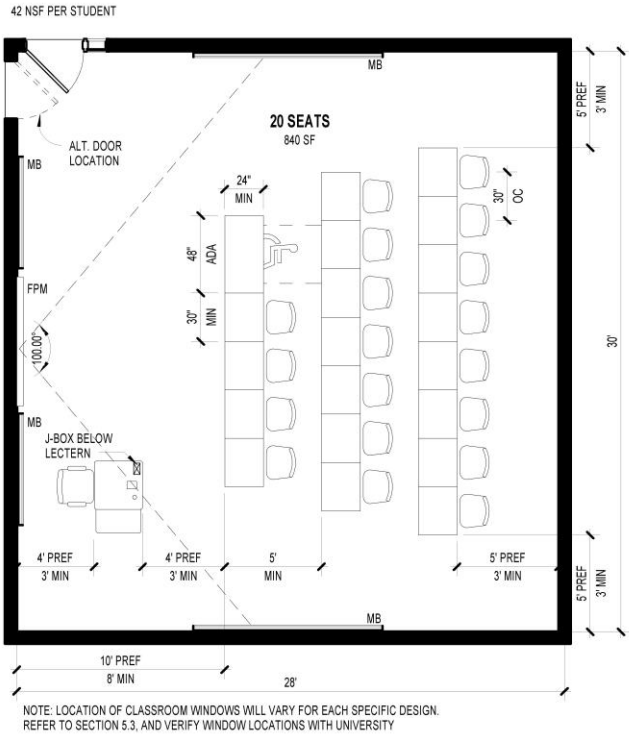
In smaller classrooms, consider providing large aisle space to increase the adaptability and accessibility of the room. 3 ft. aisles are the minimum, while 5 ft. aisle are preferred.

The following layouts are typical furniture scenarios for a small 10-20 seat flat classroom. The Design Professional is to use the following classroom layouts during the design process as starting point to determine the layout scenarios intended for each similarly sized classroom.

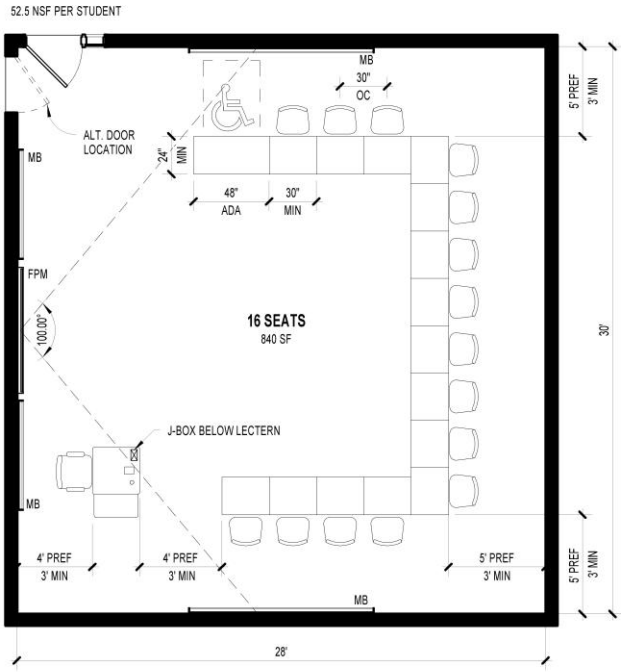
Typical Section



Typical Lecture Layout

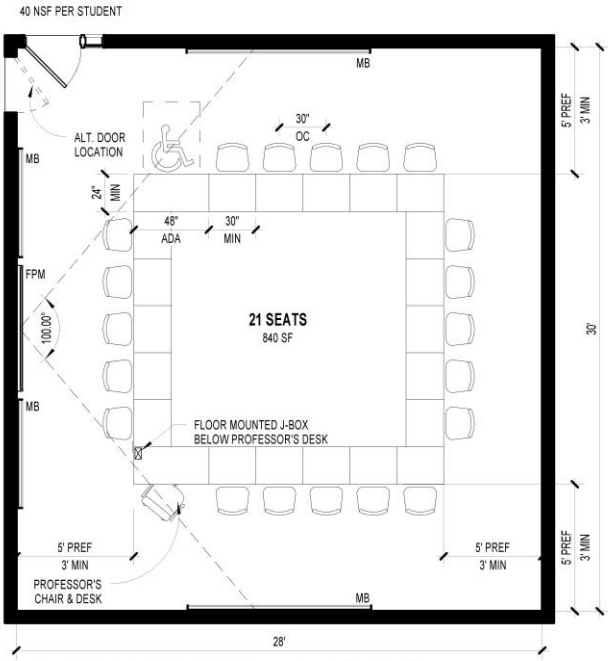


U-Shaped Seminar Layout



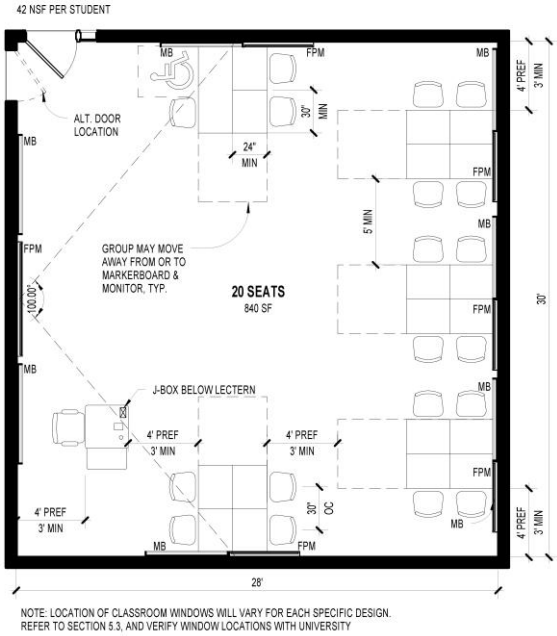
NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

Circular Seminar Layout

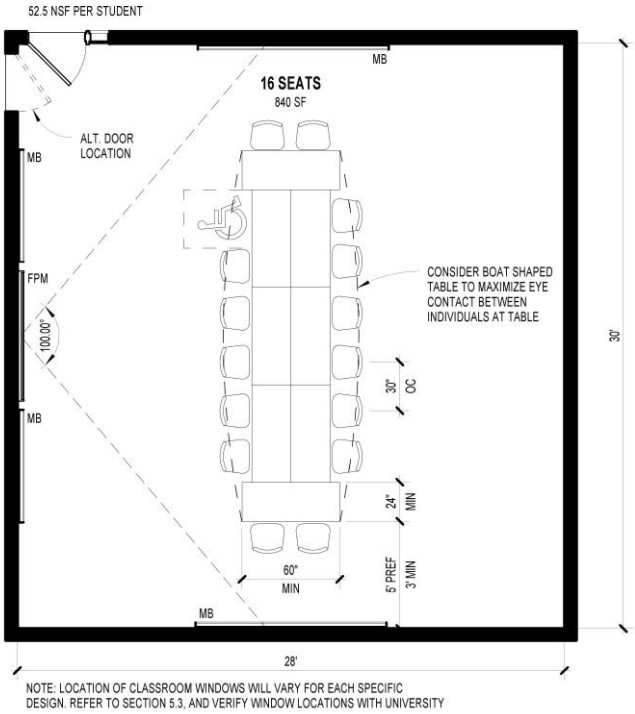


NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN. REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

Active Learning Layout



Conference Layout



5.2 – 20 TO 49 SEAT LECTURE & ACTIVE LEARNING CLASSROOMS

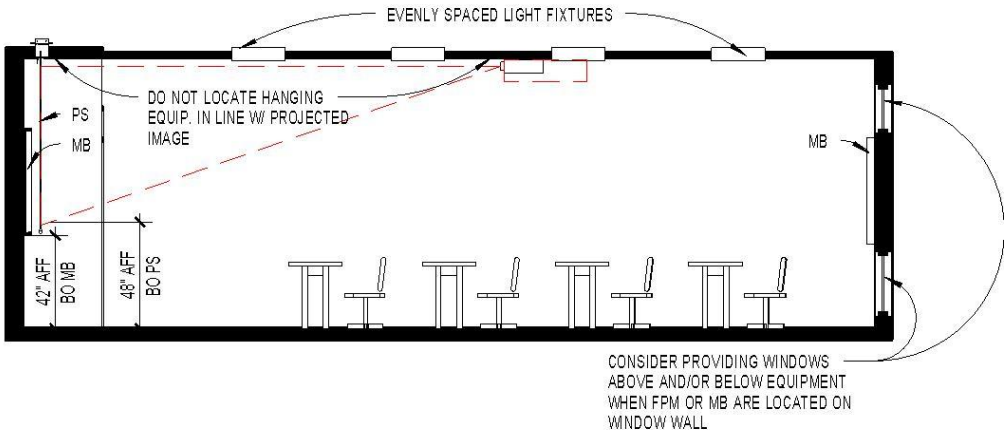
As the classroom occupancy increases, the Design Professional should consider providing one larger table per every two students, rather than individual tables. The minimum double occupant desk size is 60” wide x 24” deep. The shared tables maximize the classroom efficiency, while also providing flexibility to transition between typical furniture layout scenarios.

AV equipment may be grouped together for multiple rooms into one closet. A closet is not necessary for each individual room; however, the Design Professional should verify that adequate circulation clearance is provided around the AV closet, should one be provided.

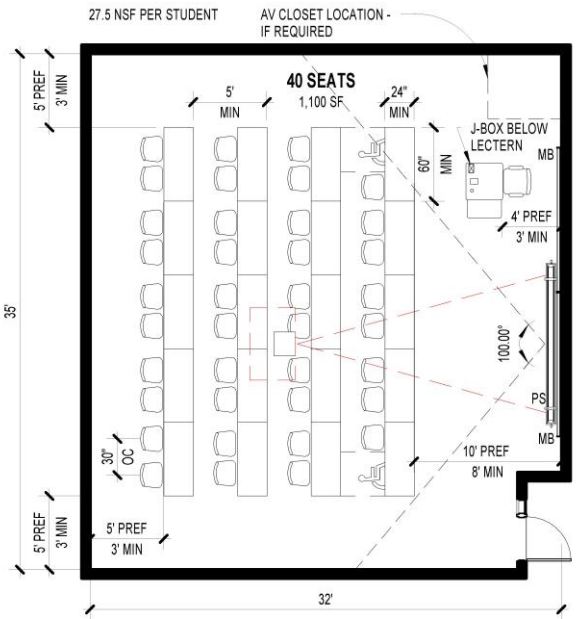
Collaborative layouts may orient groups toward the instructor wall, or toward group collaboration wall. The Design Professional should verify if both or only one collaborative orientation is preferred.

The following layouts are typical furniture scenarios for a medium 20-49 seat flat classroom. Classroom layouts which show canted walls at the instructor wall are noted as “best practice.” The University prefers canted walls rather than perpendicular walls at the instructor wall in classrooms with more than 20 seats. The Design Professional is to use the following classroom layouts during the design process as starting point to determine the layout scenarios intended for each similarly sized classroom.

Typical Section

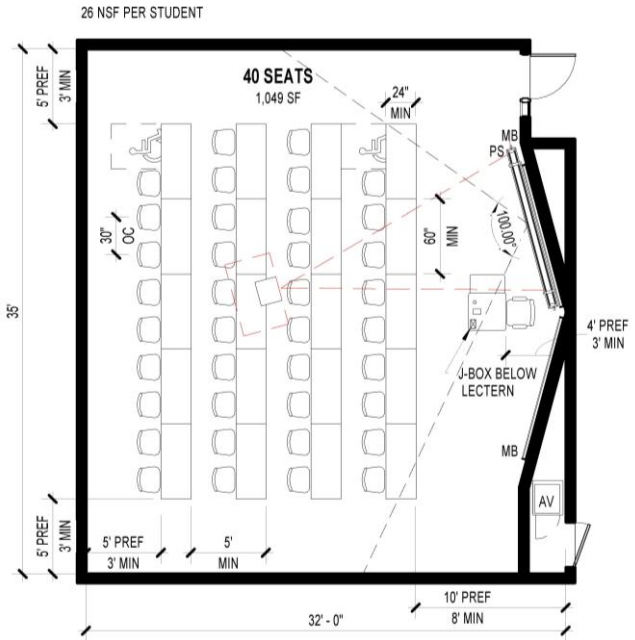


Typical Lecture Layout



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN. REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

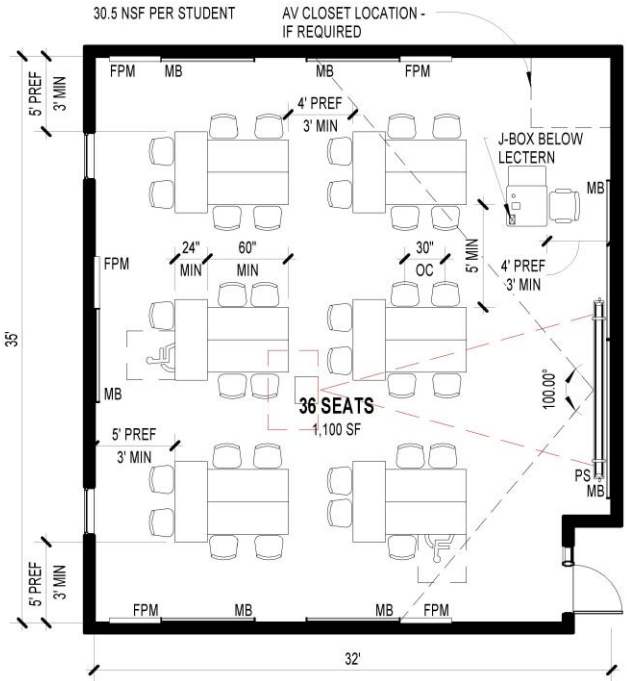
Best Practice Lecture Layout



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN. REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

Typical Active Learning Layout

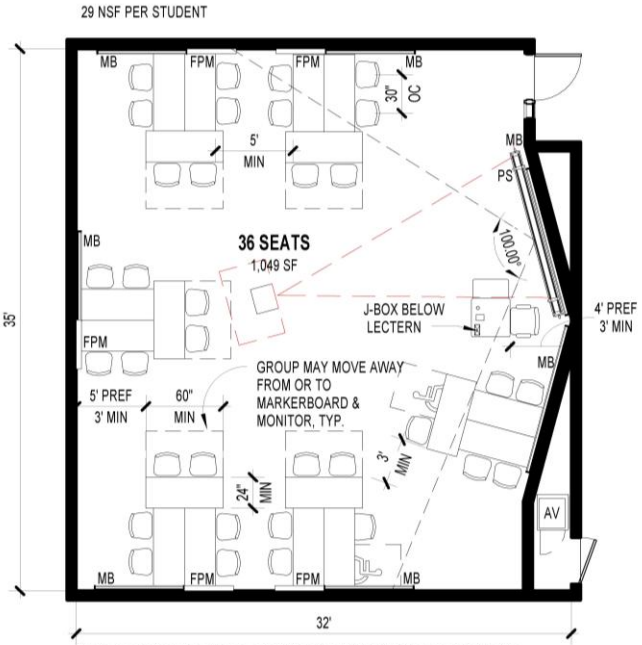
Groups oriented toward instructor wall



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN. REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

Best Practice Active Learning Layout

Groups oriented toward collaboration wall



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN. REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

5.3 – 50 TO 60 SEAT LECTURE & ACTIVE LEARNING CLASSROOMS

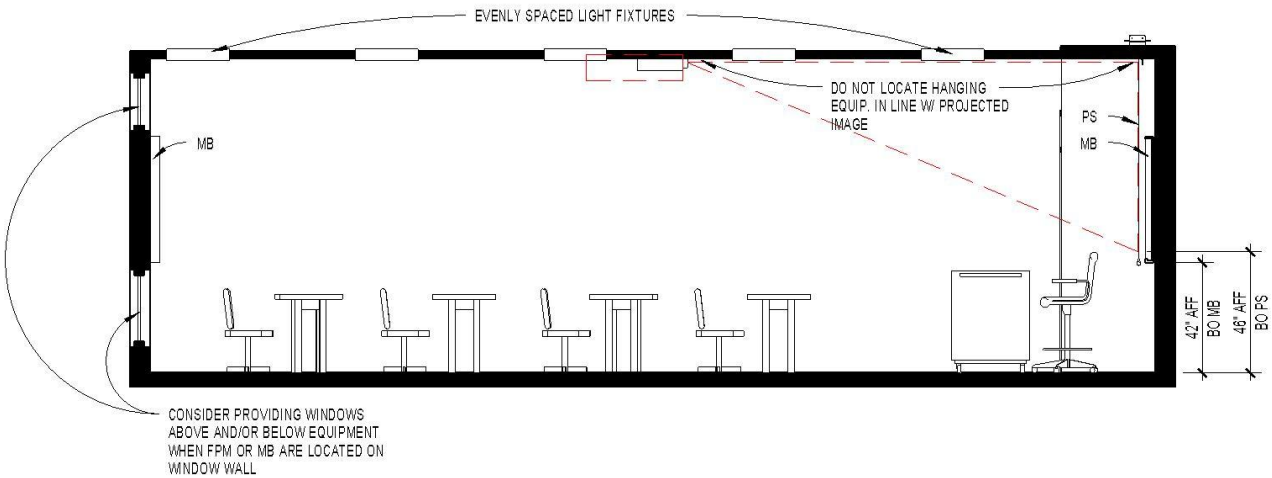
The following layouts are typical furniture scenarios for a large 50-60 seat flat classroom. Classroom layouts which show canted walls at the instructor wall are noted as "best practice." The University prefers canted walls rather than perpendicular walls at the instructor wall in classrooms with more than 20 seats. Additionally, student desks are oriented toward the instructor wall at a slight radius in the following lecture layouts. The slight radius improves the viewing angle of students at the far sides of the classroom. Alternatively, student desks may be oriented parallel to the instructor wall; however the best practice is illustrated.

AV equipment may be grouped together for multiple rooms into one closet. A closet is not necessary for each individual room; however, the Design Professional should verify that adequate circulation clearance is provided around the AV closet, should one be provided.

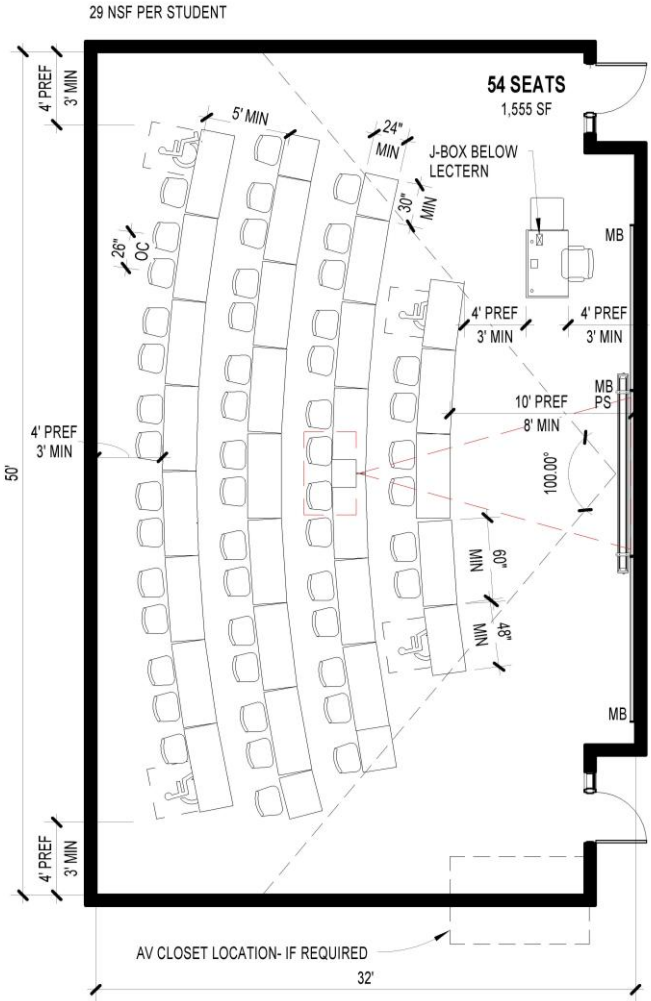
Collaborative layouts may orient groups toward the instructor wall, or toward group collaboration wall. The Design Professional should verify if both or only one collaborative orientation is preferred.

The Design Professional is to use the following classroom layouts during the design process as starting point to determine the layout scenarios intended for each similarly sized classroom.

Typical Section

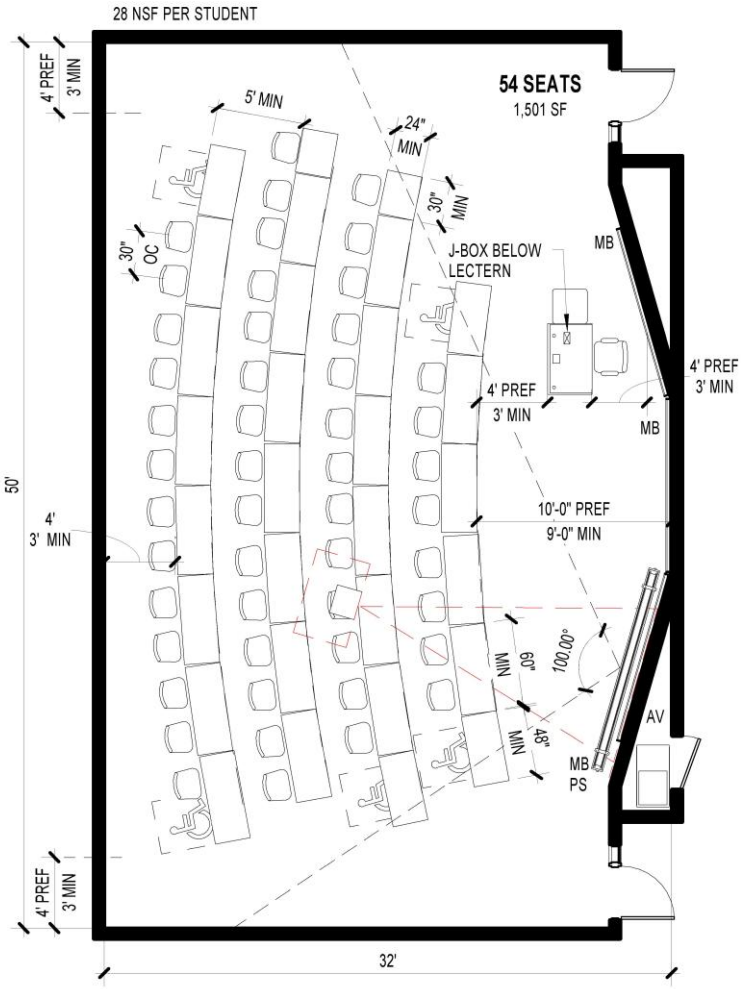


Typical Lecture Layout – 54 Seats



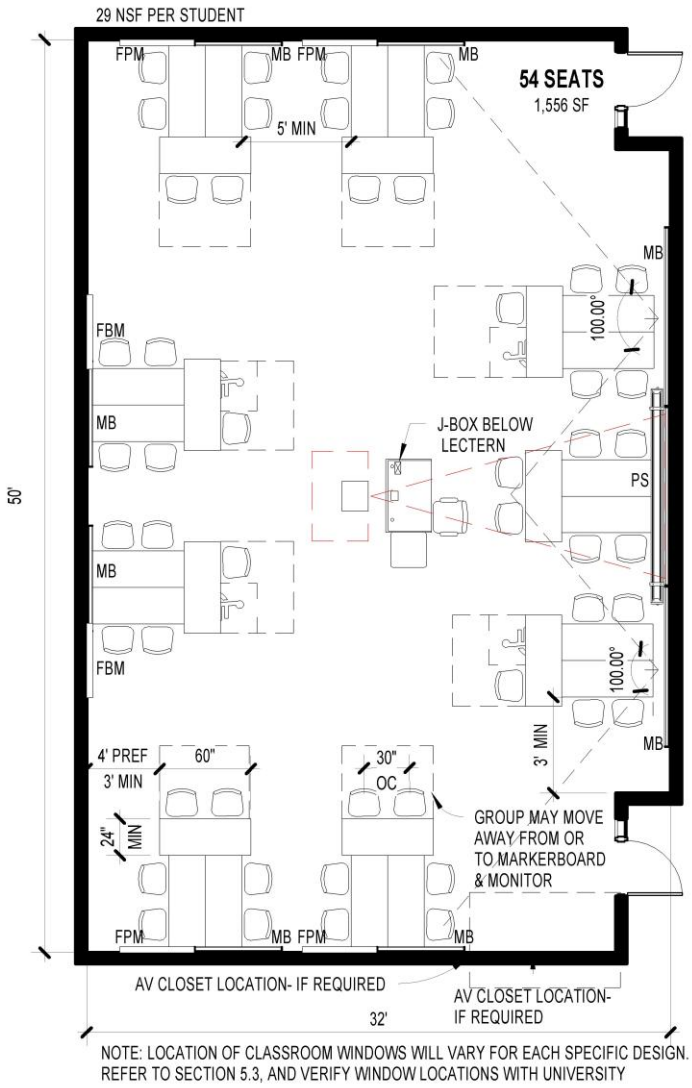
NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

Best Practice Lecture Layout – 54 Seats
Typical lecture layout with canted instructor walls

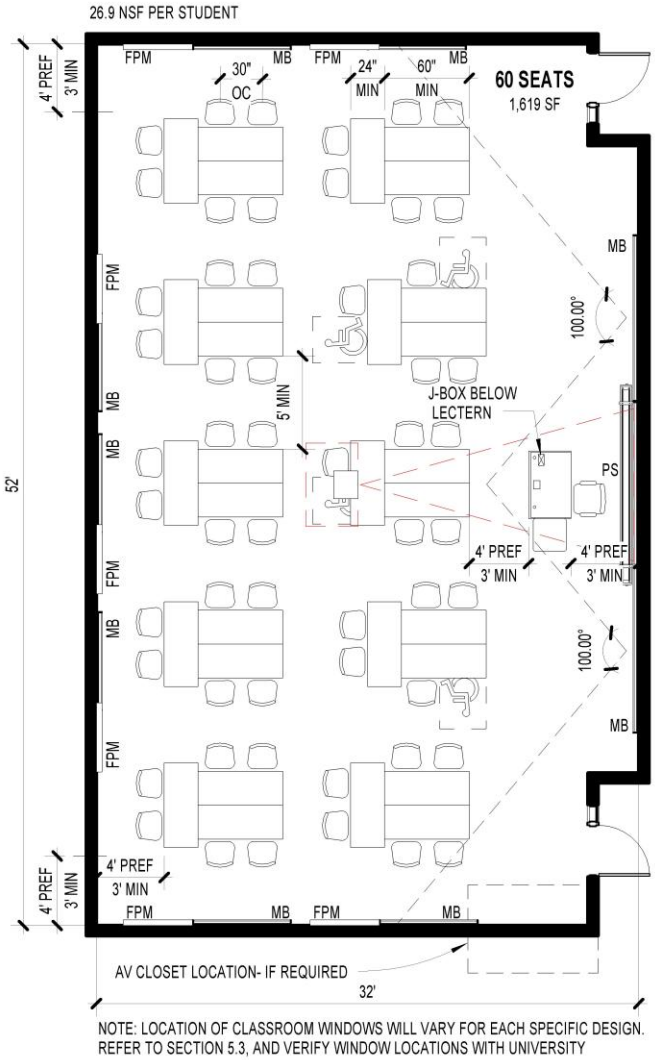


NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

Typical Active Learning Layout – 54 Seats
Groups oriented toward collaboration wall



Active Learning Layout Alternate– 60 Seats
Groups oriented toward the instructor wall



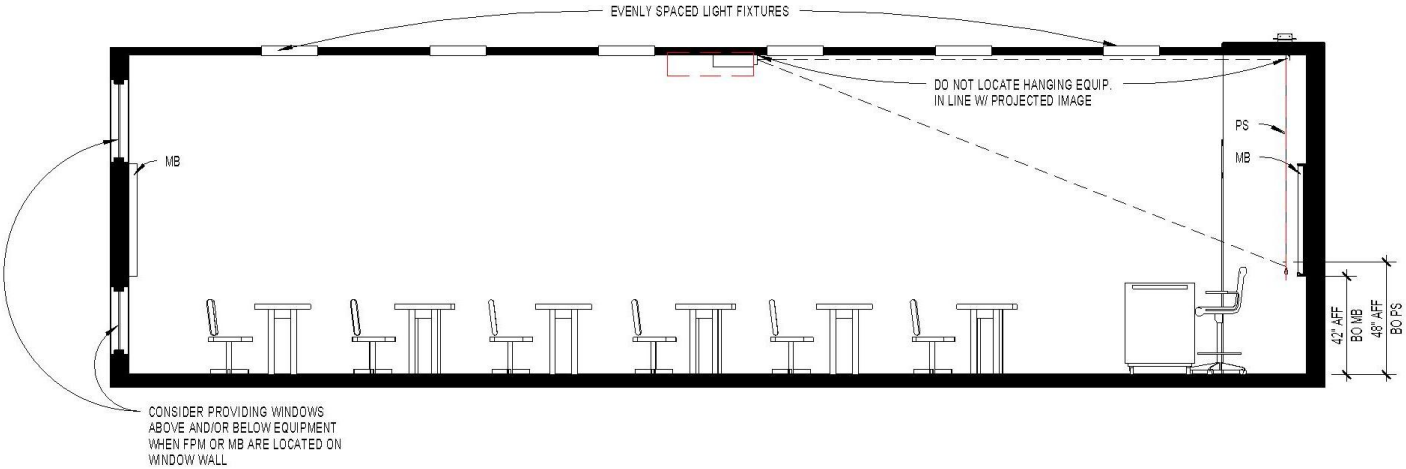
5.4 – 60 TO 100 SEAT LECTURE & ACTIVE LEARNING CLASSROOMS

The following layouts are typical furniture scenarios for a large 60-100 seat flat classroom. Classroom layouts which show canted walls at the instructor wall are noted as “best practice.” The University prefers canted walls rather than perpendicular walls at the instructor wall in classrooms with more than 20 seats. Additionally, student desks are oriented toward the instructor wall at a slight radius in the following lecture layouts. The slight radius improves the viewing angle of students at the far sides of the classroom. Student desks may be oriented parallel to the instructor wall as well; however the best practice is illustrated.

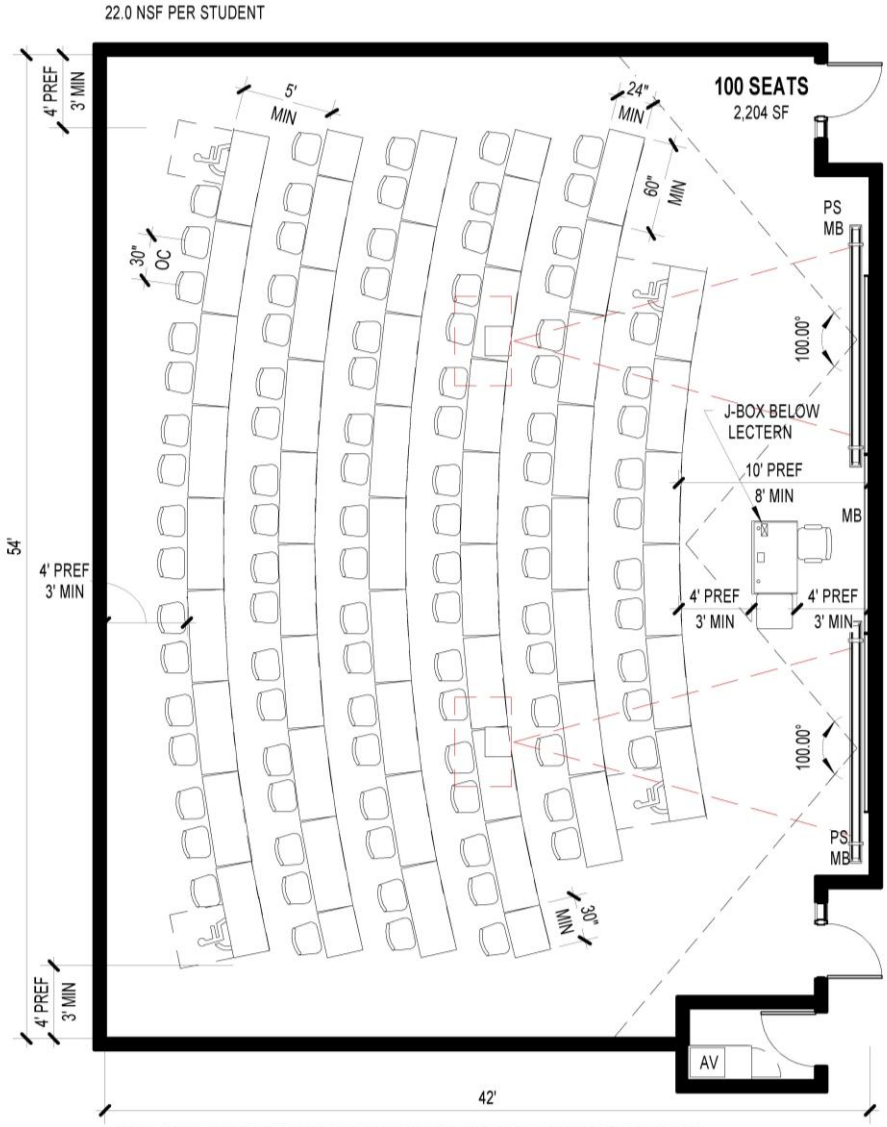
Collaborative layouts may orient groups toward the instructor wall, or toward group collaboration wall. The Design Professional should verify if both or only one collaborative orientation is preferred. Additionally, in larger active learning scenarios, rolling collaborative equipment may be necessary is adequate wall space is not available.

The Design Professional is to use the following classroom layouts during the design process as starting point to determine the layout scenarios intended for each similarly sized classroom.

Typical Section

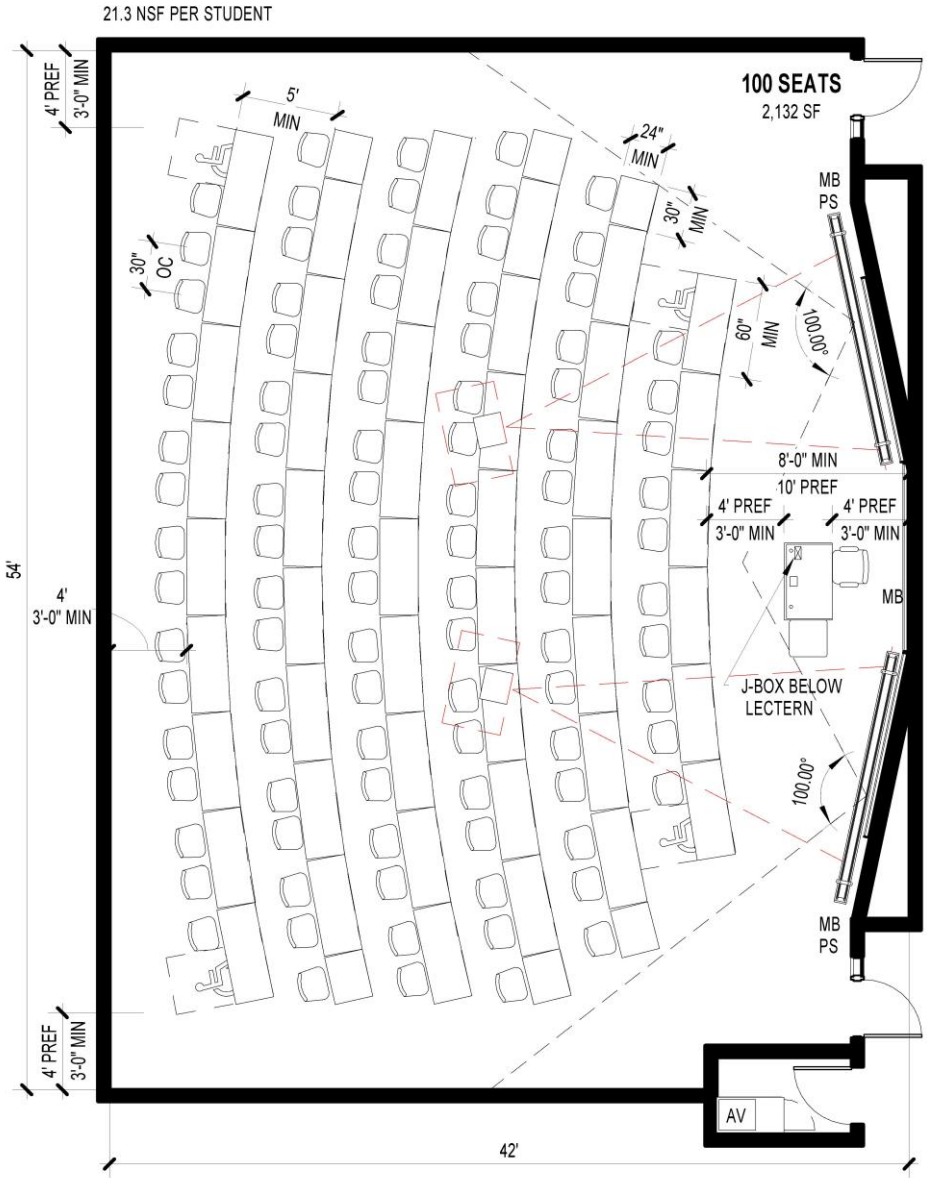


Typical Lecture Layout – 100 Seats



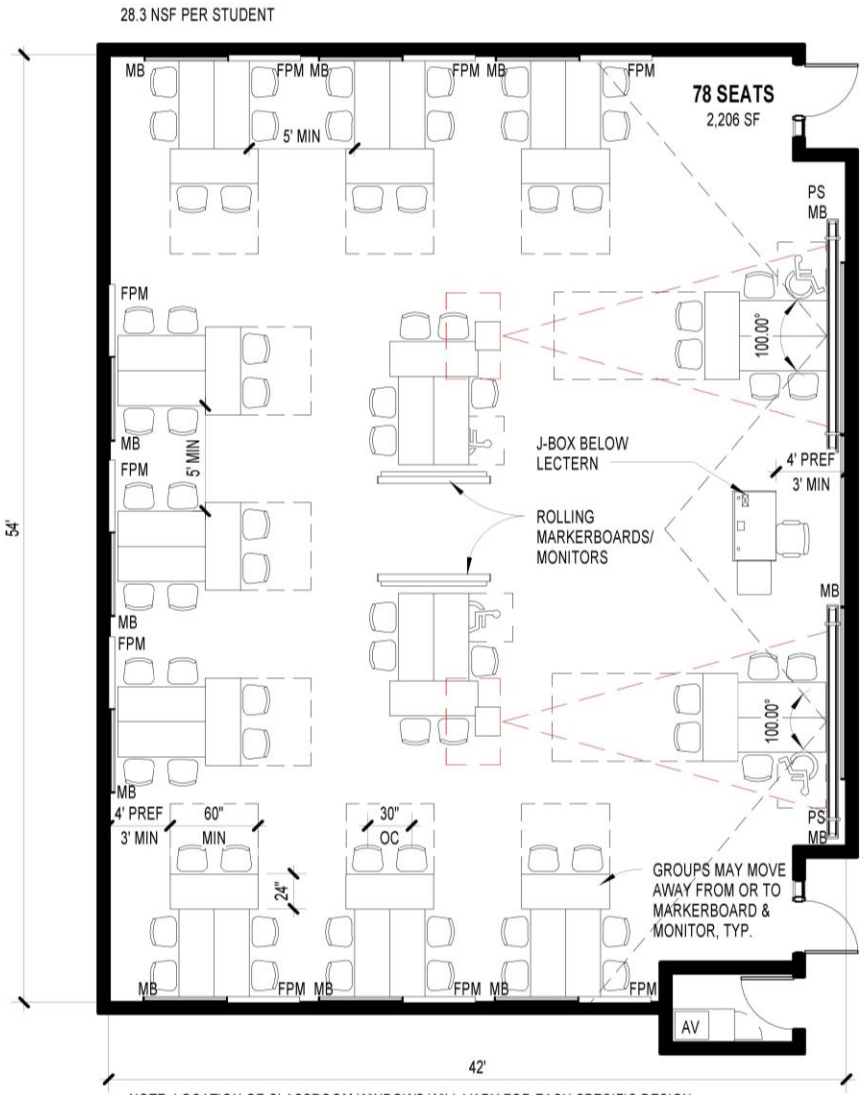
NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 4.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

Best Practice Lecture Layout – 100 Seats
Typical lecture layout with canted instructor walls



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 4.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

Active Learning Layout – 78 Seats
Groups oriented toward collaboration wall



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 4.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

6.0 – GENERAL PURPOSE TIERED CLASSROOMS

A multiple compartment (power, IT, AV) floor junction box which services the instructor lectern is to be located adjacent to the instructor lectern. If the room layout permits, power, IT and AV connections for the instructor station can be provided from a series of adjacent wall boxes if the teaching station is located within a few feet from a wall in a non-traffic area.

In the following tiered classroom layouts, the classroom seating is oriented toward the instructor wall at a slight radius. The slight radius improves the viewing angle of students at the far sides of the classroom. Alternately, student seating may be oriented parallel to the instructor wall; however the best practice is illustrated.

Rear entry to classroom (on wall opposite the instructor wall) may be desirable in larger classroom types. Rear entry minimizes instruction disruption when students enter the classroom late, and may be helpful in minimizing light spillover into projected images. Providing vestibules at the classroom entry may also assist in minimizing light spillover; this scenario is illustrated in the 200-280 seat lecture hall layout. The overall design of the classroom building may help determine if the entry doors should be located at the instructor wall, or on at the rear wall, and/or if vestibules should be provided. The location and design considerations of entry doors should be studied on a case-by-case basis.

It is strongly preferred that accessible seating in tiered classrooms be arranged in a distributed manner, i.e. not exclusively located at the front or back of the room.

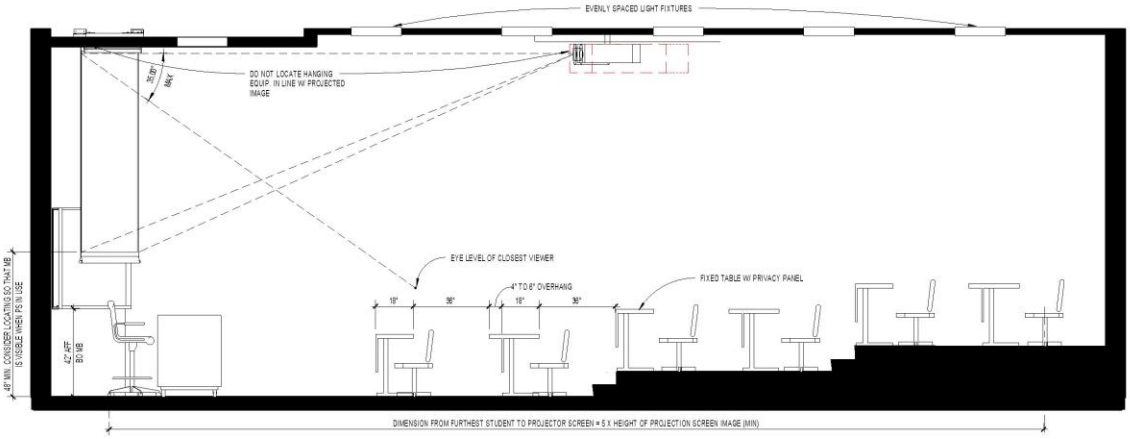
6.1 – 100 TO 120 SEAT LECTURE / COLLABORATIVE CLASSROOMS

It may be desirable to provide one center aisle or two center aisles in tiered classrooms. Two center aisles provides more student seating in the areas with maximized view angles, while one center aisle maximizes the number of students that can fit into an area.

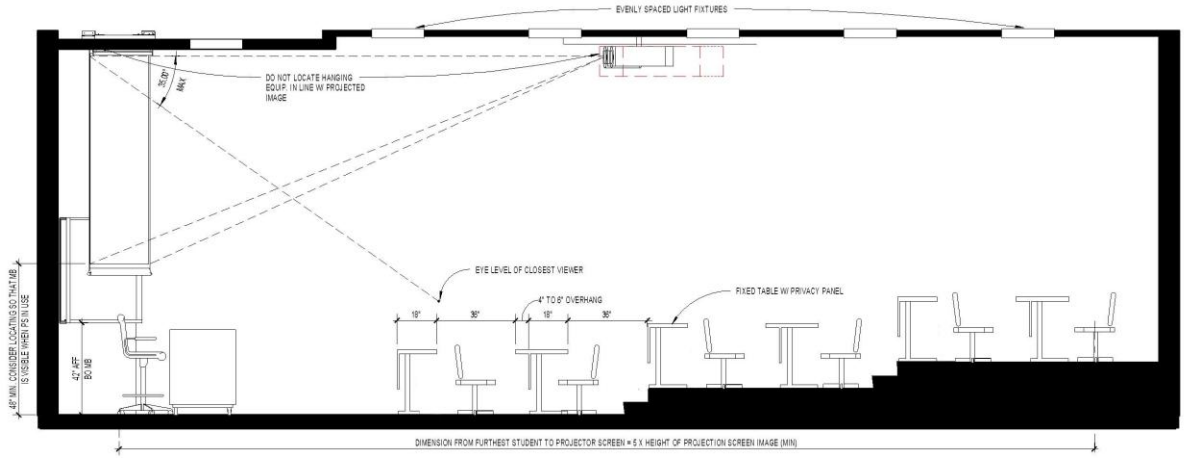
In collaborative fixed table scenarios, the Design Professional should ensure that there is an overhang provided on the collaborative workspace (rear table in collaborative grouping).

The Design Professional is to use the following classroom layouts during the design process as starting point to determine the layout scenarios intended for each similarly sized classroom.

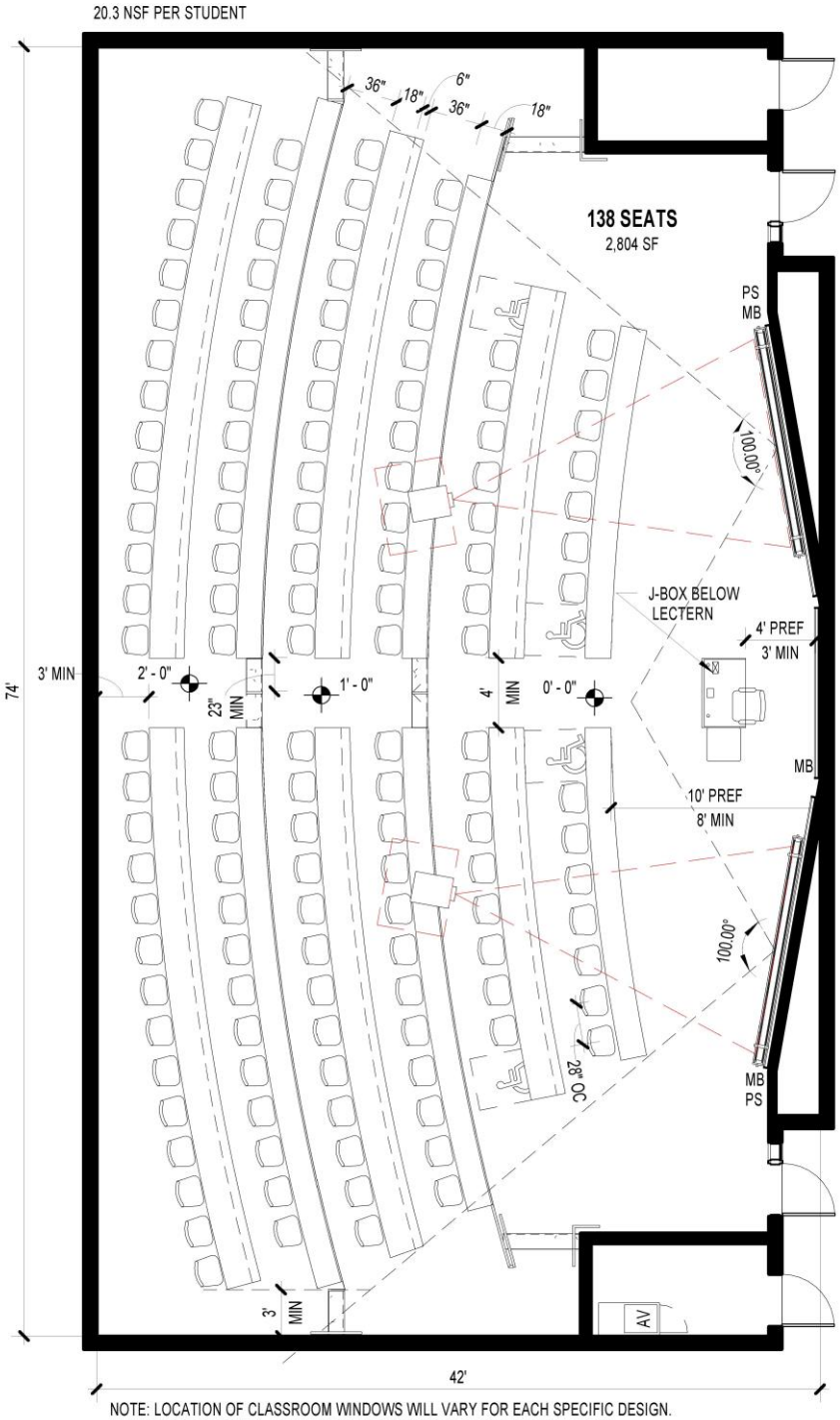
Typical Section



Typical Collaborative Section

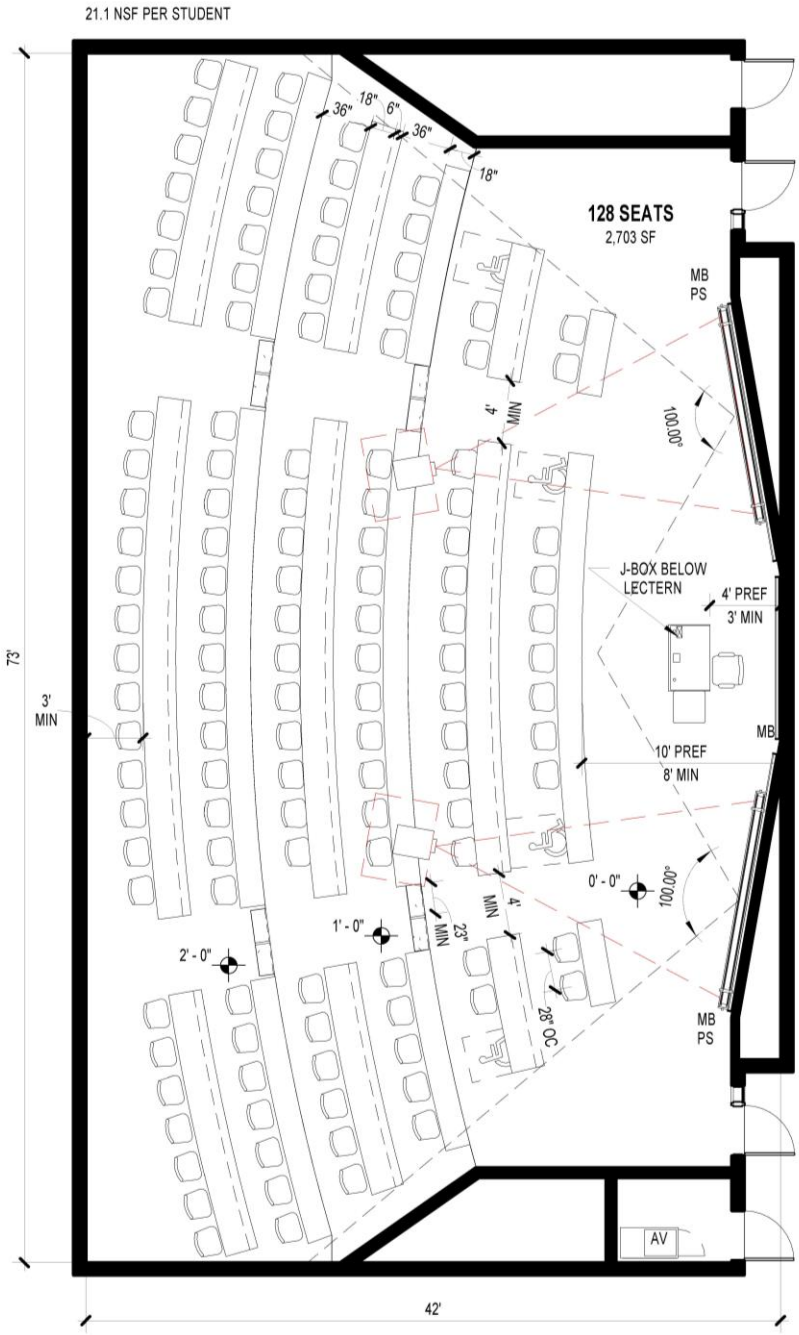


Single Center Aisle Layout



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

Two Center Aisles Layout



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

6.2 – 200 TO 280 SEAT LECTURE HALL

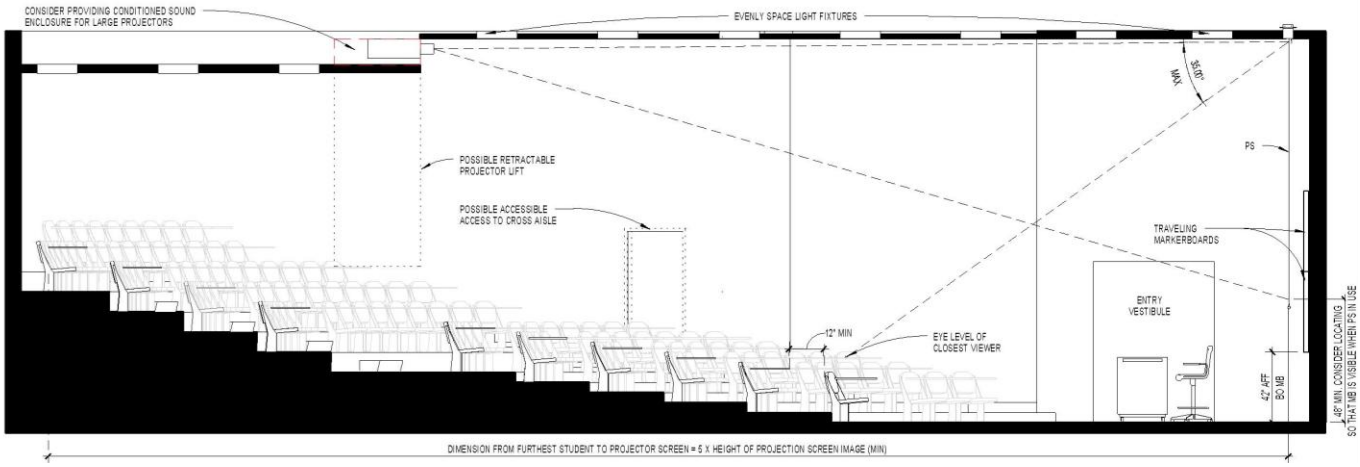
Fixed seats with tablet arms are considered to be a room layout type that is phasing out of use at the University of Georgia. Fixed seating with tablet arms should only be provided in rooms with over 200 seats. Whenever possible, locate the projector above a cross aisle when fixed seats are provided. This precaution will ensure that the projector may be easily accessed for routine maintenance. In the largest classrooms, where large projectors are needed, consider providing a conditioned sound enclosure and retractable projector life.

In collaborative fixed table scenarios, the Design Professional should ensure that there is an overhang provided on the collaborative workspace (rear table in collaborative grouping).

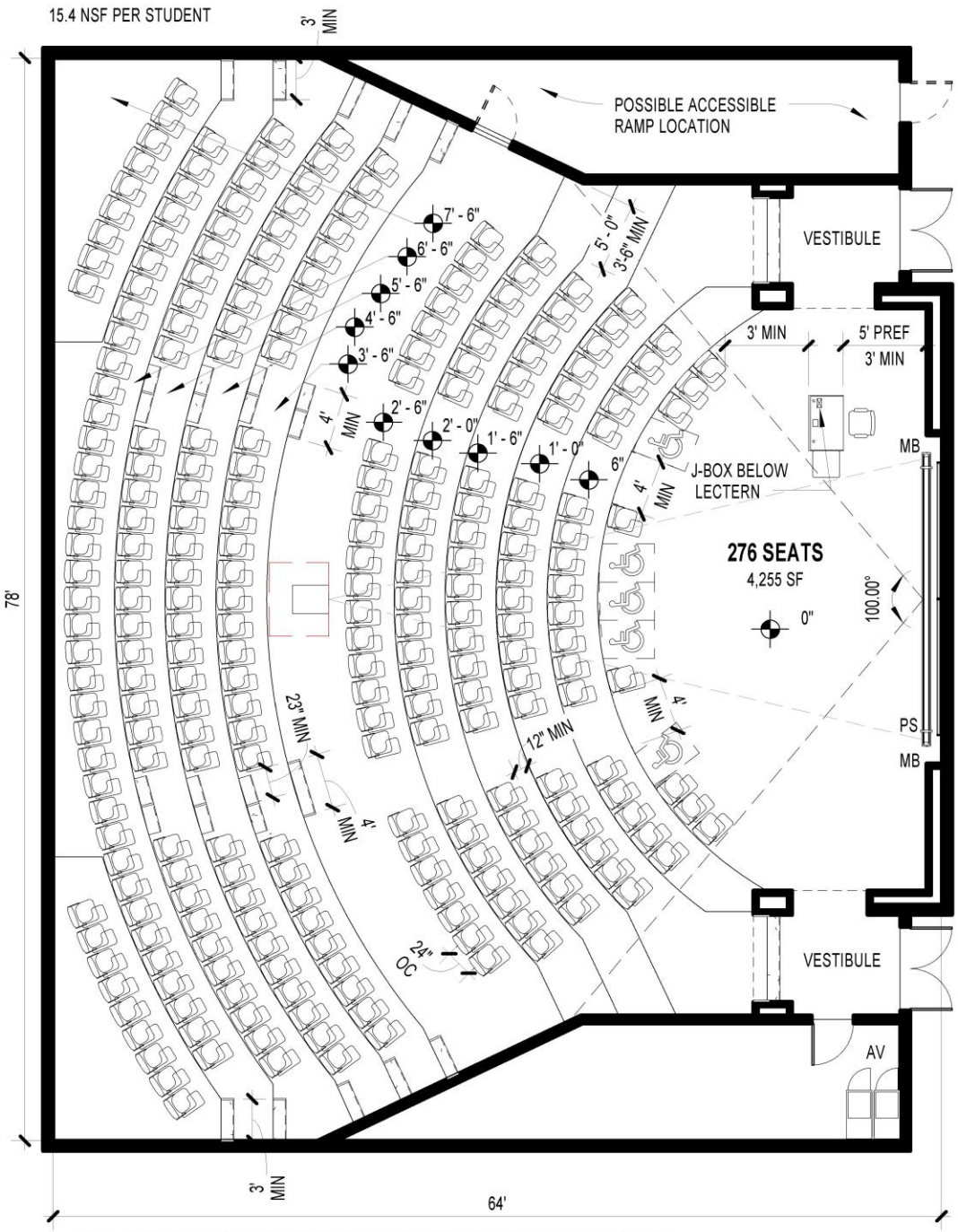
Access aisle width and railing requirements will vary depending upon aisle design, and classroom occupancy. The Design Professional is to conform to local building and fire codes.

The Design Professional is to use the following classroom layouts during the design process as starting point to determine the layout scenarios intended for each similarly sized classroom.

Typical Section

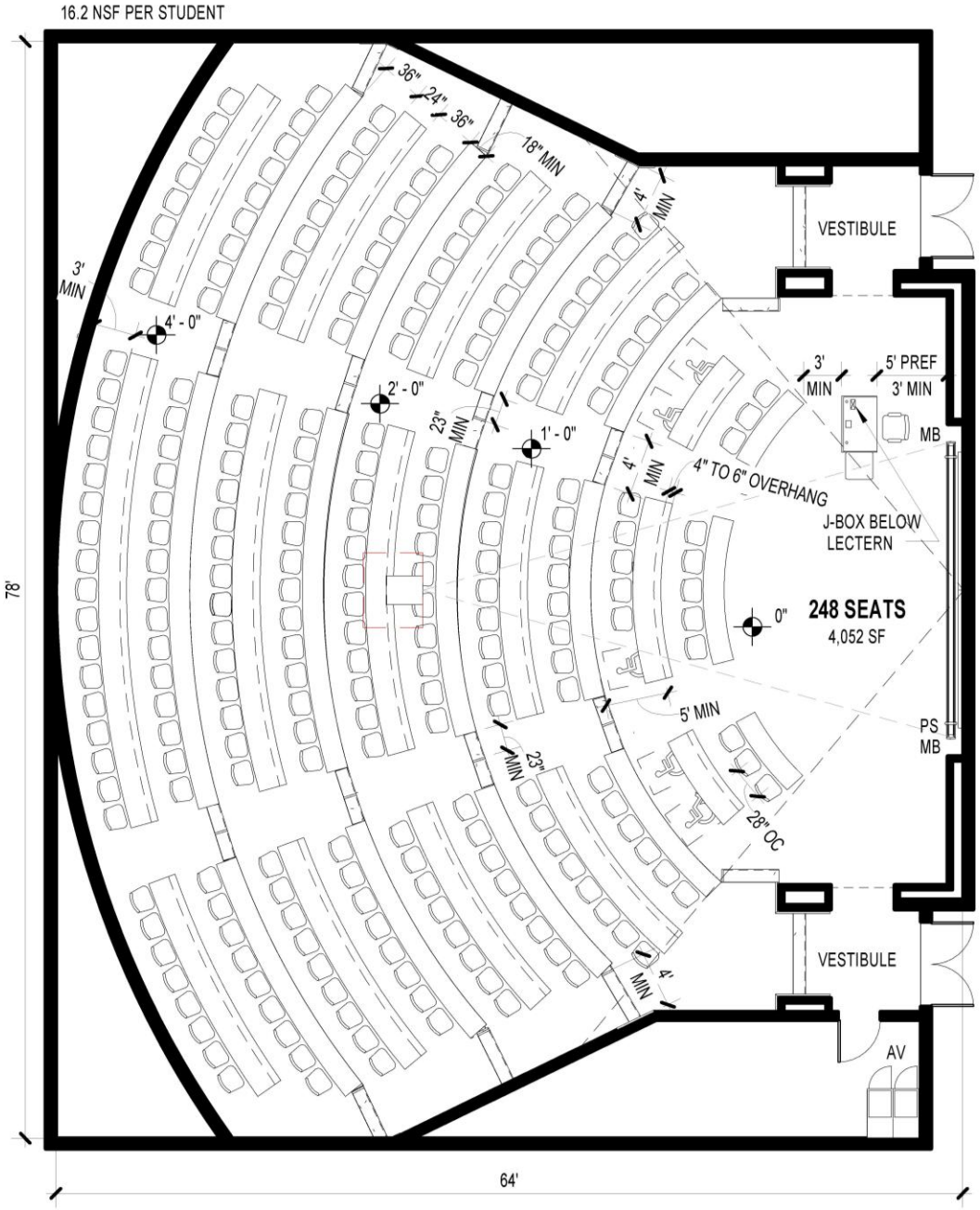


Lecture Hall Layout



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

Collaborative Layout



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN. REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

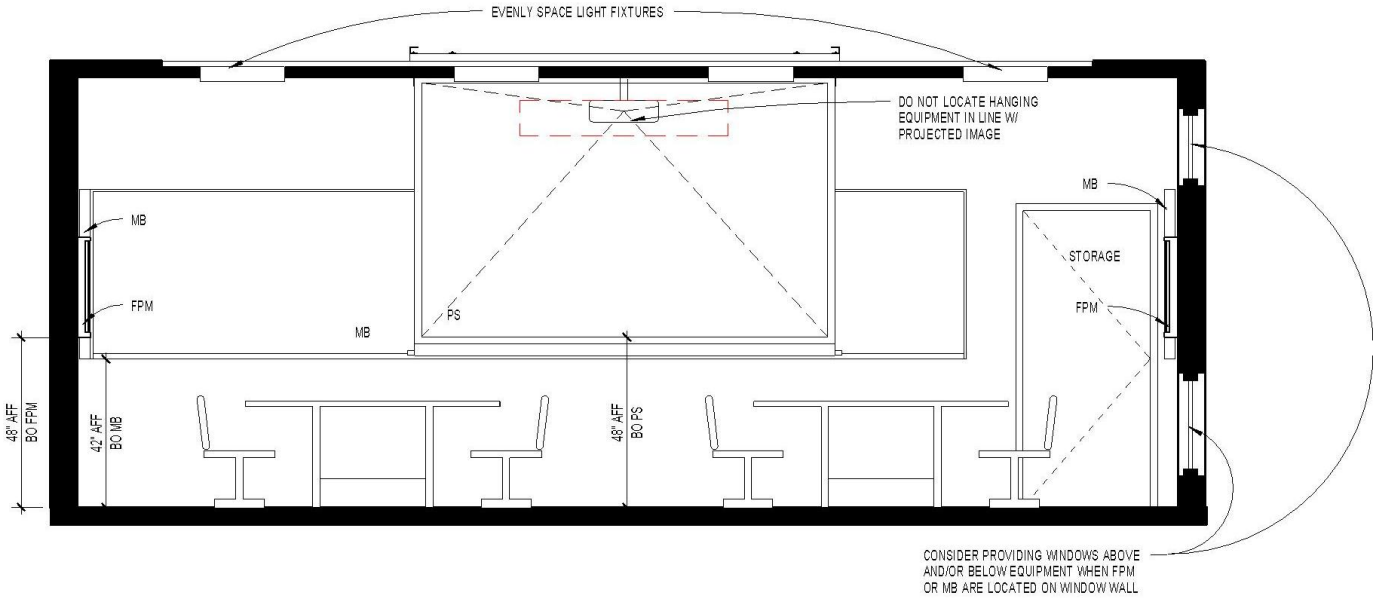
7.0 – SCALE-UP CLASSROOMS

Student-Centered Active Learning Environments with Upside-down Pedagogies (SCALE-UP) classrooms are designed to facilitate interactions between groups of students, and are a large part of UGA's emerging educational pedagogy. Each circular table consists of a group of 9 students. The tables are typically 6 to 7 ft in diameter. The group focus is inward; therefore, the instructor works with each group individually, when necessary. There is not an instructor wall in the traditional sense. The furniture in these classrooms is to be fixed, and not to be rearranged. Junction boxes are provided in the floor for each group, and power is provided at the work surface of each work surface.

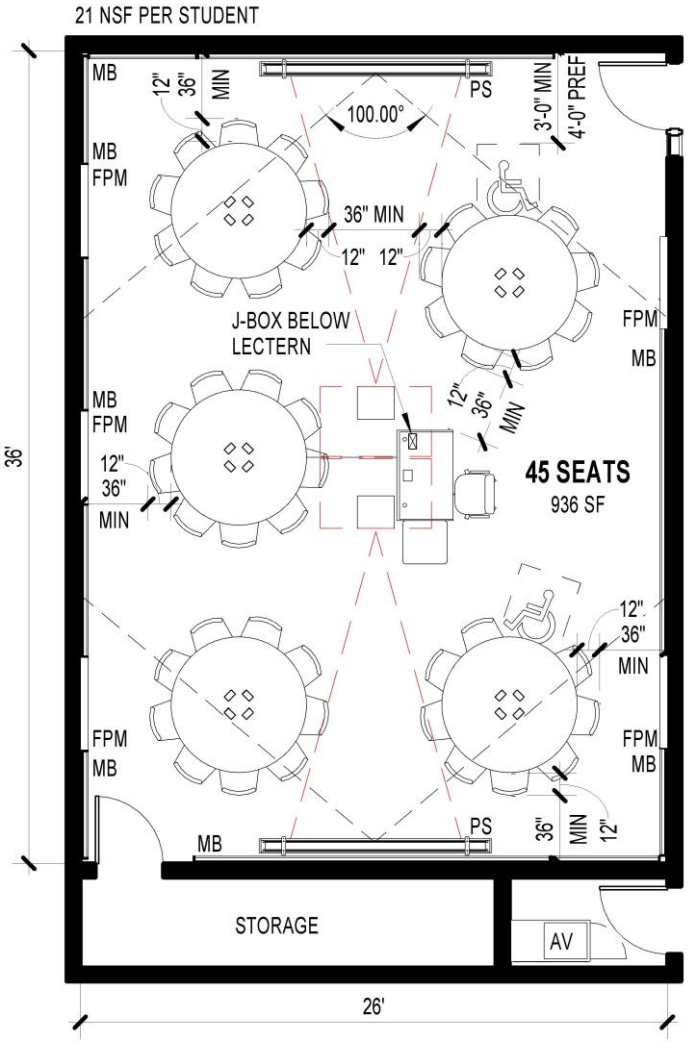
A multiple compartment (power, IT, AV) floor junction box which services the instructor lectern is to be located adjacent to the instructor lectern. Instructor areas are to be centrally located within each SCALE-UP classroom, which will not allow instructor power, IT, and AV connections being located on a side wall.

Collaborative equipment should flank a majority of the SCALE-UP classroom walls. Flat panel monitors should be provided for each group. Markerboards should infill the remaining wall space. Special consideration must be given to widows in SCALE-UP classrooms. Equipment is mounted on virtually every wall, which often conflict with window locations on exterior walls. Consider locating windows above and/or below markerboard and monitor locations. Portable collaborative equipment may be necessary in larger scale up classrooms. Adequate storage space should be provided to house additional equipment required for this classroom type.

Typical Section

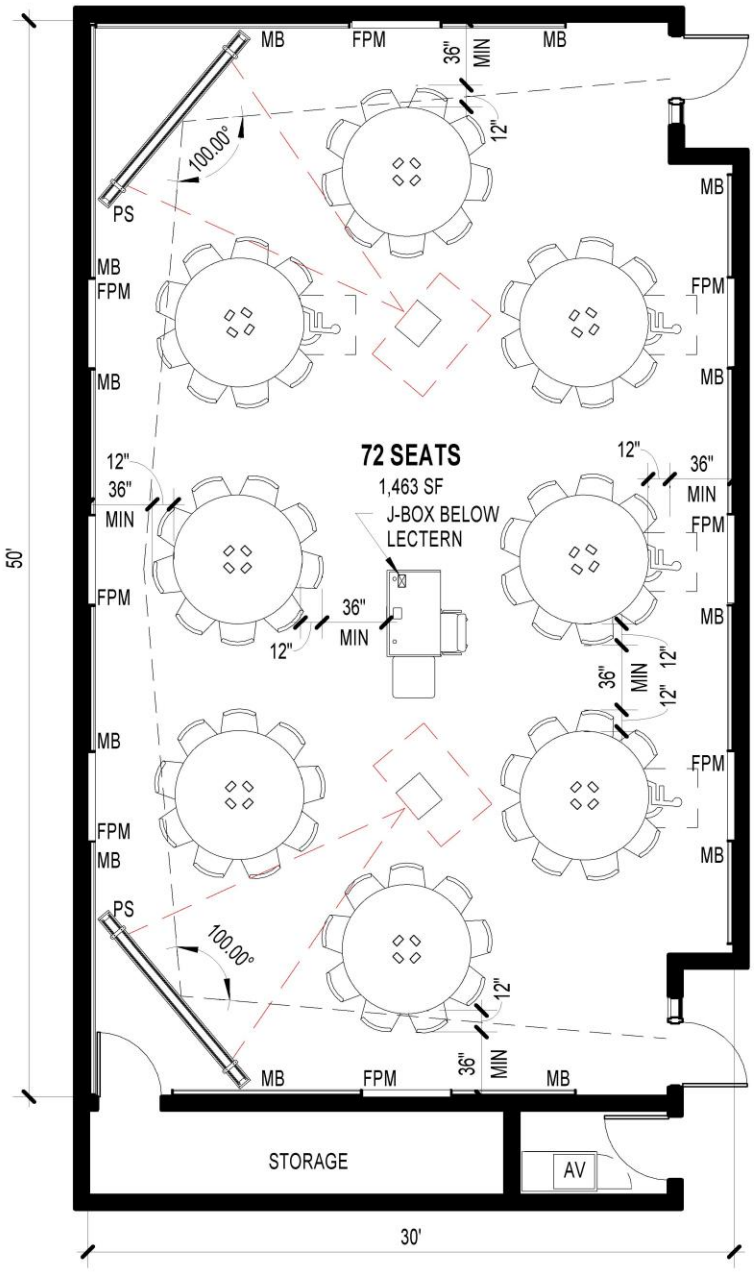


7.1 – 45 SEAT CLASSROOM



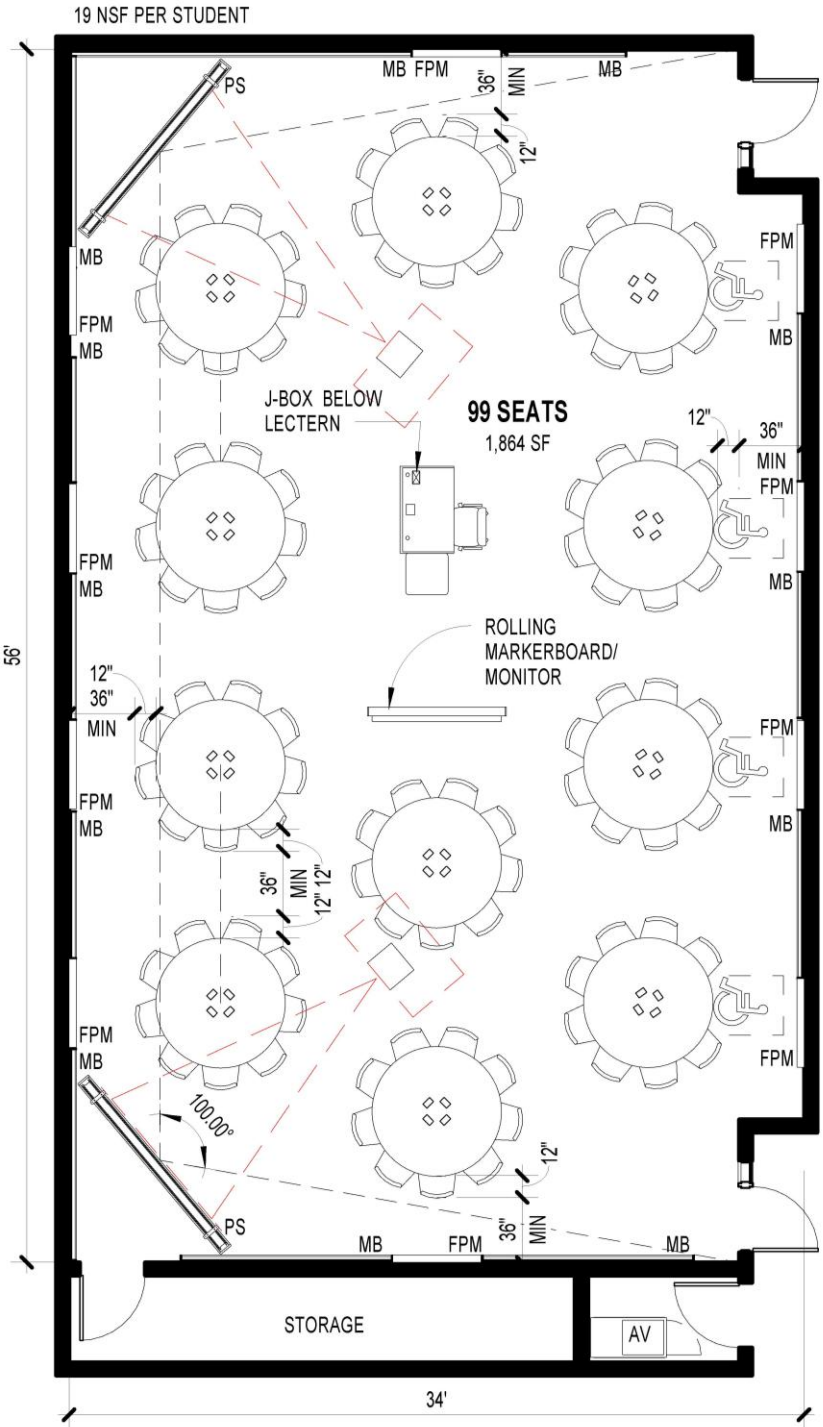
NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

7.2 – 72 SEAT CLASSROOM



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

7.3 – 99 SEAT CLASSROOM



NOTE: LOCATION OF CLASSROOM WINDOWS WILL VARY FOR EACH SPECIFIC DESIGN.
REFER TO SECTION 5.3, AND VERIFY WINDOW LOCATIONS WITH UNIVERSITY

8.0 – Classroom Design Quick Checklist

Classroom	Required	Provided
Number of Seats		
Furniture Layouts to be Provided : Lecture, Seminar (circle / u-shape), Conference, collaborative (oriented toward lecture wall / monitors), collaborative fixed tables w/ movable chairs (tiered), fixed chairs w/ tablet arms.		
Lectern Size		
Additional equipment provided in instructor area Display table, hand out table, etc.		
Lectern Area Clear area in front of instructor wall & in front of student seating.		
Student Seating Spacing If fixed seats, was CTL approval received?		
Student Desk Dimension & Spacing		
Side Aisles Dimension		
Number of Markerboards 42” AFF minimum.		
Number of Projectors 48” AFF minimum, 54” AFF preferred		
Number of Flat Panel Monitors		
Are all students’ seats within 5 screen heights and within 100 degree viewing cone of projected image?		
Sound Transmutation Class (STC) of classroom walls. Verify adjacent space uses and confirm required STC		
Voice Amplification / Assisted Listening Requirements		
Lighting Provided - Foot candles Zone 1 - Main classroom lighting: Zone 2 - Instruction area: Zone 3 - Non-projection markerboard wall: Zone 4 - Projection markerboard: Zone 5 - Instructor workstation:		

00 00 14
CONTRACTOR INSURANCE SPECIAL CONDITIONS

1. **GENERAL**
   A. Contractor Controlled Insurance Policies: Contractor Controlled Insurance Policies are prohibited on UGA projects unless the subject project's stated cost limitation (SCL) exceeds $50,000,000.00 and express written permission is granted by UGA.

00 00 15
OPERATING PROCEDURES FOR OLD ATHENS CEMETERY

1. **GENERAL – FOR UGA Athens Campus Only**
    A. The Jackson Street Cemetery, located between the Jackson Street Building and Baldwin Hall, was formerly known as the Old Athens Cemetery and the boundaries extended beyond the fenced portion seen today.
    B. Exhumations at Baldwin Hall from 2015-2017 demonstrated that graves extend south of the currently bounded cemetery. The excavations also showed that the original topography has been greatly altered by over a century of construction and landscape modification. The location and extent of graves is presently unknown and not easily discerned. In some areas there are no graves. In other areas human remains are buried to a depth of as much as ten feet, and in other areas the burial is now quite shallow.
    C. The map in Exhibit A of the "Operating Procedures for Old Athens Cemetery" depicts the approximate extent of the cemetery in 1852 and the probability levels for the presence of graves therein. This is not to be taken as a definitive demarcation. All land within the approximate 1852 extent of the cemetery and outside of the currently maintained cemetery shall be considered a potential abandoned Cemetery unless and until determined by an archaeologist to be free of graves.
2. **EXECUTION**
    A. If this project is near or within the 50' line beyond the approximate area of the 1852 extent of the cemetery, or within the approximate 1852 extent of the cemetery (see map) it is mandatory that the current version of the University of Georgia "Operating Procedures for Old Athens Cemetery" is followed.

00 31 31.14
SEISMIC INVESTIGATIONS INFORMATION

1. GENERAL

A. The University of Georgia commissioned GeoHydro Engineers for a study entitled "UGA Central Campus Probabilistic Seismic Hazard Analysis" for the main campus in Athens-Clarke County. The entire report dated February 24, 2026 is available at www.architects.uga.edu/standards which also includes area maps that clarify the limits of the report.

Revised June 2026

B. The following table presents seismic design values interpolated from applicable seismic hazard maps from the building code as well as values determined by the probabilistic seismic hazard analysis performed for this report:

Parameter	2018 IBC	Probabilistic Hazard Analysis
S_s (g)	0.206	0.198
S_1 (g)	0.086	0.076

00 73 01
SOLE SOURCE / SOLE BRAND

1. **GENERAL**
   A. Related sections:
      i. 08 71 00 – Door Hardware
      ii. 12 93 23 – Trash, Litter, and Recycling Receptacles
      iii. 12 93 43.13 – Site Seating
      iv. 14 20 00 – Elevators
      v. 23 09 23 – Building Automation and Temperature Control System (BAS)
      vi. 23 25 00 – HVAC Water Treatment
      vii. 26 56 13 – Lighting Poles and Standards
      viii. 27 00 00 – General Communications Requirements
      ix. 28 13 00 – Access Control
      x. 28 31 00 – Fire Detection & Alarm
      xi. 32 14 16.13 – Brick Unit and Porous Paving – Ungrouted
      xii. 32 39 13 – Manufactured Metal Bollards
2. **PRODUCTS –** These products have received sole brand or source approval and are on file with UGA Procurement:
   A. Door Hardware Cylinder (see Section 08 71 00)
      i. Cylinders for locksets, latchsets, and deadbolts.
      ii. Best Access Systems: 1-855-365-2407.
   B. Door Hardware Exit Device (see Section 08 71 00)
      i. Von Duprin, 98, 35A Series
      ii. Ingersoll Rand Security Technologies: 1-877-671-7011.
   C. Door Hardware Power Operator (see Section 08 71 00)
      i. LCN 4642
      ii. Ingersoll Rand Security Technologies: 1-877-671-7011.
   D. Trash, Litter, and Recycling Receptacles (see Section 12 93 23)
      i. BigBelly Solar Compacting Waste & Recycling Units #AC-SS-0568
      ii. Big Belly Solar, LLC (“BigBelly”): 1-978-460-1977
   E. Exterior Bench (see Section 12 93 43.13)
      i. Renaissance Bench with Armrests and Back, Model Number: 2806-6, length: 6’
      ii. Renaissance “Backless” Bench with Armrests, Model Number: 2802-6, length: 6’
      iii. TimberForm by Columbia Cascade, Palmetto Recreation Equipment, LLC: 1-888-214-5253.
   F. Elevators Video Monitoring System (see Section 14 20 00)
      i. Wurtec Wur-Com Plus wurtecsales@wurtec.com
      ii. 6200 Bent Drive, Toledo, Ohio 43611
      Office Phone: 800-837-1066
      Website: www.wurtec.com
      Email: wurtecsales@wurtec.com
   G. Building Automation and Temperature Control System (see Section 23 09 23)
      i. This is a sole source of equipment by Automated Logic Corporation: 770-429-3000 and procured through Automated Logic – Georgia: 770-421-3280. For renovation projects that utilize a different brand, the decision to change to

Automated Logic Corporation or modify the existing system will be made on a case by case basis.

ii. Initial Contract Year 1: 11/01/2023 – 10/31/2024, subject to annual renewal through 10/31/2028

H. HVAC Water Treatment (see section 23 25 00)

Revised June 2026

i. Chem Aqua is a sole source and shall be employed by the Contractor on all new and renovated condenser water, chilled and heating hot water plant (including to review design), preparation, cleaning, flushing, passivation, and start-up.

ii. Chem-Aqua-see section 23 25 00 for UGA specific contacts.

I. Exterior Lighting Fixtures (see Section 26 56 13)

i. LUMEC L80 series street lighting fixture, custom without ball finial on top; black texture power coated paint finish. Metal Halide with RACE refractor optics; metal halide with SE optics; and LED with LES3 optics.

ii. Signify North America Corporation. 1-855-486-2216

J. Exterior Lighting Fixtures (see Section 26 56 13

i. Architectural Area Lighting Decorative Poles DB10 - Kensington (DB10-KENS-4F12-188B-BLS-TEN3) Outdoor Poles and Brackets 4" Round Fluted Poles to include Evolve Village Series Luminaire- Evolve Lantern Post Top, without ball finial on top; IFS Polyester black powder-coated electrostatically applied paint finish.

ii. Current Lighting Solutions 1 (888) 694-3533

K. Inside Cabling Solution (see Section 27 00 00)

i. Includes all parts and components (and those by Siemon's Cable Partners). Including, but not limited to, patch cables, patch panels, cabling, telecommunication jacks, and face plates.

ii. Siemon Network Cabling Solutions: 1-860-945-4200.

L. Outside Cabling Solution (see Section 27 00 00)

i. Includes all parts and components including but not limited to fiber optic patch cables, fiber optic cables, connectors, splice enclosures, rack mount cabinets, adaptor pants, and cable organizers.

ii. Corning Cable Systems: 1-828-901-5000.

M. Security and Access Control (see Section 28 13 00)

i. Genetec, Inc.

ii. Reference contract # AC-CB-0418 for a list of approved contractors

N. Fire Detection & Alarm (see Section 28 31 00)

i. Honeywell: 1-877-841-2840, Farenhyt, for new construction projects that are not facilities operated by UGA Housing. For renovation projects that utilize a different brand, the decision to change to Farenhyt or extend the existing system will be made on a case by case basis.

ii. Honeywell: 1-877-841-2840, Notifier for new construction projects that are facilities operated by UGA Housing. For renovation projects that utilize a different brand, the decision to change to Notifier or extend the existing system will be made on a case by case basis.

O. Brick Pavers (see Section 32 14 16.13)

i. Pine Hall Brick Light Traffic Paving Brick; Pine Hall Brick Heavy Vehicular Traffic Paving Brick; Pine Hall Brick StormPave for Light Traffic; Pine Hall Brick

StormPave for Heavy Vehicular Traffic; Pine Hall Brick Paving Brick with Truncated Domes. All brick pavers in color: Courtyard Red – Georgia Plant.

ii. Pine Hall Brick Company: 1-800-334-8689.

P. Manufactured Metal Bollards (see Section 32 39 13)

i. Model #: VI-BO-14/30 – RB

ii. Visco, Inc: 1-800-341-1444.

00 73 39
MINORITY BUSINESS ENTERPRISE

1. **GENERAL**
   A. It is the policy of the State of Georgia that minority business enterprises shall have the maximum opportunity to participate in the State purchasing process. Therefore, the State of Georgia encourages all minority business enterprises to compete for, win, and receive contracts for goods, services, and construction. Also, the State encourages all companies to sub-contract portions of any State contract to minority business enterprises.
      i. The Small and Minority Business Contact person for the University of Georgia is:
      Claire Boyd
      Procurement Officer
      University of Georgia, Procurement Office
      301 Business Services Building
      Athens, Georgia 30602
      706-542-2361 FAX: 706-542-7035
      ii. Contractor may contact the Procurement Office or any buyer for assistance with the preparation of Contractor bid or proposal, or to answer questions about the bid and award process. Specific questions about the bid specifications should be directed to the buyer that issued the bid request rather than to Procurement Officer.
      iii. The State of Georgia has a law which provides for an income tax credit on the State Tax Return to any company which subcontracts with a minority owned firm to furnish goods, property or services to the State of Georgia. Vendors should direct specific questions about this law to the Small and Minority Business Coordinators, 200 Piedmont Avenue, S.E., Atlanta, Georgia 30334, telephone 404-656-6315.

01 14 00
WORK RESTRICTIONS

1. **GENERAL**
   A. Contractor shall schedule and control all work persons employed on the Project. Contractor shall instruct all workers to prevent tracking dirt and debris into existing buildings. Profanity, inappropriate dress, or inappropriate conduct shall not be permitted on any Project. Owner reserves the right to have the Contractor remove from the Project anyone who, in the sole opinion of the Owner, exhibits such behavior.
   B. UGA Football Games**:** For projects in Athens-Clarke County, the Contractor shall stop all work commencing at 3:00 pm Friday before UGA home football games and shall not work the Saturday of home football games. The construction site shall be secured to prevent unauthorized persons from entering the site. See the UGA Athletic Association webpage, www.georgiadogs.com to obtain information concerning the current schedule.

01 14 13
ACCESS TO SITE – RIGHT OF ENTRY

1. **GENERAL**
   A. The Owner retains the right to enter the construction limits to inspect and/or repair existing utilities, structures, and property whenever necessary. Owner shall coordinate non-emergency access 24 hours in advance.
   B. For projects in Athens-Clarke County, Contractors shall fill out the temporary ID card request form below to receive security access to existing UGA buildings that require a UGA ID access card.
   C. The Contractor shall make the construction site available and accessible to UGA FMD and any other Owner-retained Contractors to complete work within the site to include repairs and renovation of existing buildings, utilities, hardscape, and landscape. Contractor shall coordinate his schedule with other Contractors as approved by Owner to ensure a complete and usable facility.

Office of University Architects
for Facilities Planning
UNIVERSITY OF GEORGIA

GEORGIA
UGA OneCard

REQUEST FOR AFFILIATE STATUS

FROM:

*****REQUIRED UGA SPONSOR INFORMATION*****

Application will not be processed if not completed.

Sponsor Name: _____

Sponsor MyID: _____

Department: _____

Phone Number: _____

RETURN TO:

Campus Mail:
UGA OneCard Office
309 Tate Student Center

FAX:
(706) 542-0070

Encrypted E-mail:
Log in to sendfiles.uga.edu & send to:
"ugacard" (just the username!)

If ID Card is needed, Please submit application via above methods at least three business days before sending Affiliate to the OneCard Office.

Official Affiliates of the University may be eligible for a sponsored UGAID Number. Upon issuance, Sponsors may request a UGA MyID account, email address, and/or UGA identification card, as deemed appropriate by the Sponsoring Department.

For OneCard Office administrative purposes, Affiliates include Campus Visitors, Contractors, Program Participants, Remote Research Collaborators, and others whose work is based on campus but who are not part of the UGA master payroll/personnel data base. (The latter includes but is not limited to ROTC staff, Campus Ministry, IFC/PHC House Directors, Cooperative Extension employees, USG Board of Regents employees, Augusta University/UGA Medical Partnership or College of Nursing employees, temp agency workers, or sponsored volunteers.)

Affiliates are not automatically eligible for University services. Contact the specific service provider if there are any questions concerning eligibility for services. Some University services require a participation fee. Legal dependents (including children under the age of 18 years) of certain Affiliate categories may be eligible for a Dependent OneCard with limited privileges.

☐ **NEW REQUEST** ☐ **RENEWAL**

Affiliate Category: ☐ Contractor _____ (Company) ☐ Campus Visitor ☐ Remote Collaborator

☐ Program Participant _____ (Name of Program)

Non-UGA Paid Employee ☐ ROTC Staff ☐ CMA ☐ IFC/PHC ☐ USG ☐ AU/UGA ☐ CONAT ☐ Other

AFFILIATE INFORMATION

Provided Information must match valid, government-issued photo ID.

Full Legal Name: _____
Last First MI

Date of Birth: _____ **If known, Existing UGA 81x or MyID:** _____

Affiliate Needs the following:

☐ UGA ID Number (81x) ☐ ID Card for Door Access ☐ UGA MyID Login Account ☐ UGA Email Account

MyID and Email account requests must be submitted to EITS by the Sponsor.

Dates Visitor Will Require Access: Beginning Date: _____ **Ending Date**:** _____

** Maximum term is 12 months, renewable annually. If Dates are left blank, term end will be set at ten (10) days from Dean/VP approval date.

Department Head Approval: _____ **Date:** _____

Dean or Vice President Approval: _____ **Date:** _____

>>>Application will not be accepted without Sponsor MyID and BOTH Approval Signatures!<<<

>>>Please Allow 3 Business Days for Processing<<<

****

***OneCard Office Use Only**

Reviewed and Approved by: _____ **Date:** _____

Entered in Database by: _____ **Date:** _____

01 29 00
PAYMENT PROCEDURES

1. **GENERAL**
   A. Related sections:
      i. 01 29 73 – Schedule of Values
      ii. 01 74 19 – Construction Waste Management & Disposal
      iii. 01 81 00 – Facility Performance Requirements
   B. Prior to being able to receive compensation for services, Design Professionals and Contractors, who have not previously contracted with UGA, must complete the UGA new vendor electronic registration and be current in the UGA system. The new vendor electronic registration is available at https://onesource.uga.edu/news/vendor_registration_information/ .
   C. Prior to the Design Professional receiving full compensation for Schematic Design and Design Development/Preliminary Design, the requirements of Section 01 81 00 Facility Performance Requirements shall be met and the Section 01 81 00 Facility Performance Requirements' checklist submitted.
   D. Application for Payment Procedure for Contractor, Design-Build, and Design-Bid-Build project delivery methods:
      i. Contractor shall email a .pdf copy of the Exhibit K Application for Payment, and all associated back-up documentation as required by the Contract to the Design Professional and to the Project Manager for review / approval. In addition to Exhibit K Application for Payment form in the Contract, the Contractor shall provide an Application and Certificate of Payment in the America Institute of Architects (AIA) format with corresponding schedule of values breakdown. Exhibit K Application for Payment must be executed as per the Contract; however, the additional Application and Certificate for Payment in an AIA format is not required to be signed and notarized as it is provided as reference information to assist the Design Professional and Project Manager in reviewing Application for Payment back-up documentation.
      ii. Within three days of receipt of the Application for Payment, the Design Professional will either approve the Application for Payment and forward to invoiceoua@uga.edu as well as the Project Manager, or will provide comments to be addressed by the Contractor.
      iii. Once all comments are addressed to the satisfaction of the Design Professional and Project Manager, the Design Professional will sign and forward a .pdf copy of the pay application and supporting information to invoiceoua@uga.edu and the Project Manager, also copying in the Contractor. OUA office will then upload the electronic pay application to DocuSign for approval and signature by the Project Manager.
      iv. Complete Section 01 74 19 Construction Waste Management & Disposal Report and include with monthly Application for Payment.
   E. Application for Payment Documentation for Contractor and Design-Builder projects:
      i. For the draft version of the Application for Payment, the Contractor shall include with it copies of all invoices, labor billings, Subcontractor applications for payment and executed Subcontractor's interim lien releases.

ii. The Contractor shall maintain a Contingency Log that is updated and submitted with each Application for Payment that shows any costs that have been transferred from the contingency line item into all other line items with an explanation of each transfer.

iii. Upon approval of a Component Change Order or Change Order, the Contractor shall distribute all Component Change Order or Change Order costs among the respective line items against which the actual costs will be charged. Although Component Change Orders and Change Orders are frequently approved on a lump sum basis so as to be incorporated into the GMP, billing for the associated work is on a cost-plus basis with a maximum price and if the total value of the change order funds is not spent, the remaining value of the Component Change Order and/or Change Order will be returned to contingency funds.

F. Application for Payment Procedure for contracts held by GSFIC:

i. Submit per GSFIC requirements

G. Application for Payment Procedure for Design Professional, Consultant, and Purchase Order work:

i. Submit .pdf format invoices to invoiceoua@uga.edu and Project Manager

01 29 73
SCHEDULE OF VALUES

1. **GENERAL**
   A. Related sections:
      i. 01 29 00 – Payment Procedures
   B. The Contractor shall submit a draft of the Schedule of Values (SOV) to the Project Manager and Design Professional for approval prior to the first pay request being submitted.
   C. The SOV shall include the following column headings at a minimum: original scheduled value, change orders, revised schedule of values, previous billings, current billings, stored materials, total completed and stored to date, and retainage.
   D. Contractor Construction Overhead Costs (General Conditions) shall be listed as a separate line item within the SOV.
   E. Insurance shall be listed as a separate line item within the SOV.
   F. Performance and payment bonds shall be listed as a separate line item within the SOV.
   G. For projects implementing Building Information Modeling (BIM), there shall be a separate line item within the SOV for BIM related costs.
   H. The following items, specific to Contractor and Design-Builder project delivery methods, shall be listed as separate line items within the SOV:
      i. Pre-construction Overhead Costs and Expenses (General Conditions)
      ii. Pre-construction Fee
      iii. Construction Fee
      iv. Contractor Contingency
   I. For Contractor and Design-Builder projects, each line of the SOV shall correspond to the Subcontract amount for only one Subcontractor so that the required back-up Subcontractor payment applications matches a specific SOV line item. In the event that there is more than one Subcontract representing a scope of work (for example steel could possibly be subdivided into steel erection, steel fabrication and miscellaneous metals), the SOV should be subdivided accordingly.
   J. For Contractor or Design-Build projects, the change order amounts shall be distributed among each of the separate line items as appropriate to allow for the billings to be tracked against each corresponding subcontractor's pay request.
   K. For projects awarded on a lump sum basis, the change orders can be added as lump sums on a new line added below the total line for the original base contract amount.
   L. For projects awarded on a lump sum basis, the Fee shall be allocated on a percentage basis among each of the line items.
   M. For projects awarded on a lump sum basis, the SOV should be detailed enough to allow for proper review and analysis of percentages of work complete. For example, electrical should be subdivided into such categories as exterior power, exterior lighting, interior lighting, switchgear and panels, devices, conduit and wiring, telecommunications, fire alarm system, etc.

01 31 19.13
PRE-CONSTRUCTION MEETINGS

1. **GENERAL**
   A. The Contractor shall schedule, at the convenience of the Owner, a Pre-Construction Meeting at least fourteen calendar days prior to beginning any construction. The meeting shall include as a minimum the Contractor's authorized representative, the Design Professional, and the Owner's Representatives. The Contractor shall invite the End-User, University utilities and infrastructure representatives as suggested by the Owner, Contractor, Subcontractors, and the Owner's Testing Agency representatives. For projects with a Land Disturbance Activities permit and/or a NPDES permit, the University of Georgia Environmental Safety Division shall be invited to the pre-construction meeting. The conference shall be held at a time convenient to the Owner and held at the construction site. The conference agenda shall include introduction of key personnel and responsibilities, review of project schedule, job site logistics, contract specifications, contract administration, and University policies and procedures.

01 31 19.23
PROGRESS MEETINGS

1. **GENERAL**
   A. After every design meeting, the Design Professional shall issue a meeting summary within seven calendar days after the meeting date. The meeting summary shall include a list of attendees, the meeting date, topic, and all action items and decisions. The meeting summary shall be sent to the Project Manager as well as to others requested by the Project Manager. The Design Professional shall provide electronic tools (laptops or thumb-drives) necessary to project plans and specifications onto a UGA provided projector screen. The Design Professional shall coordinate with the Project Manager as necessary.
   B. After every construction meeting, the Contractor shall issue a meeting summary within seven calendar days after the meeting date. The meeting summary shall include a list of attendees, the meeting date, topic, and all action items and decisions. The meeting summary shall be sent to the Project Manager as well as to others requested by the Project Manager. The Contractor shall provide electronic tools (laptops or thumb-drives) necessary to project plans, specifications, change orders, RFIs, photographs, schedules, etc., onto a UGA provided projector screen. The Contractor shall coordinate with the Project Manager as necessary.

01 31 23
PROJECT WEBSITE

1. **GENERAL**
   A. For Contractor and Design-Build project delivery methods:
      i. The Contractor shall provide a secure website or web-based file upload/download system to allow transfer of electronic files between the Design Professional, Contractor, and UGA.
      ii. The Contractor shall provide login and password information to UGA personnel as requested by the Project Manager.
   B. For Design-Bid-Build project delivery methods:
      i. The Design Professional shall provide a secure website or File Transfer Protocol (FTP) system to allow transfer of electronic files between the Design Professional, Contractor, and UGA.
      ii. The Design Professional shall provide login and password information to UGA personnel as requested by the Project Manager.
   C. The secure website or FTP system shall be maintained from project inception through Final Completion.
   D. As a minimum the Design Professional shall make available for download drawings and specifications at each review milestone and as requested by the Project Manager.
   E. After construction documents are issued for construction, the Design Professional shall make available for download any revisions including supplementary sketches and documents.
      i. The drawings shall be both in a CAD file format ".dwg" and a portable document format ".pdf". CAD files must have x-refs bound into the file.
      ii. The specifications shall be able to be read with Microsoft Word and allow for a global search.

01 32 16
CONSTRUCTION PROGRESS SCHEDULE

1. **GENERAL**
   A. Related sections:
      i. 01 35 46 – Indoor Air Quality – During Construction
   B. Schedules shall include timeframes required to ensure that off-gassing is substantially complete prior to occupancy. Refer to Section 01 35 46 Indoor Air Quality – During Construction.
   C. Schedule shall include delivery and installation of furniture (regardless of whether it is Owner provided or Contractor provided) per direction of the Project Manager.
   D. Schedule shall include final in-place mockups of interior paint samples with final light fixture and lamps in place.
   E. Schedule shall include date of required activation of data connections for the digital controls system.
   F. Schedule shall include adequate time for the completion of testing, adjusting, and balancing for HVAC prior to Material Completion. Adequate time shall be included for hydronic flushing, passivation, and inhibitor addition as required by the project. The Contractor shall take the time for resolution of these issues by the responsible party into account in the schedule. A 'contingency' of an additional week or two should be incorporated into the balancing plan schedule to accommodate additional time required for the responsible party to correct any minor issues preventing design performance of the building. *Revised June 2026*
   G. The Schedule on all commissioned projects should accommodate the requirements for prefunctional checklists and functional testing (refer to UGA Standard Commissioning Specifications)
   H. Schedule shall include the anticipated date of permanent electrical service connection by the serving electrical utility, including completion of all required inspections, approvals, metering installation, and authorization to energize.
   I. The schedule shall include 80% and 100% fire marshal inspections.
   J. The schedule shall include training which shall be completed prior to Material Completion.
   K. The schedule shall include preparation and review of closeout submittals. Closeout submittals shall be submitted at or prior to Material Completion.

01 33 00
SUBMITTAL PROCEDURES

1. **GENERAL**
    A. Related sections:
        i. 00 00 03 – Modifications to General Requirements for BOR Contracts
        ii. 01 77 00 – Project Closeout
    B. Any costs associated with submittals shall be included in the Contractor Overhead Cost or Base Bid.

01 35 13.01
SPECIAL PROJECT PROCEDURES – UTILITY & SYSTEMS OUTAGES

1. **GENERAL**
   A. Connections to Existing Utilities: All utility work involving connections to existing utility systems (including but not limited to: electrical, communications, water, gas, steam, chilled water, storm water & sanitary systems) shall be coordinated with the Owner. Contractor shall inform the Owner prior to any proposed shutdown, outage or work of any nature which will interrupt or disturb any building utility system or equipment served by that system. A minimum of 72-hours' notice is required for the Owner to make all necessary arrangements for this work, and such shutdowns shall be scheduled at the convenience of the Owner.
   B. Fire Alarm And Fire Sprinkler Deactivation (Less Than 4 Hours At One Time): If the Project has an existing fire alarm system and or fire sprinkler system that will be encountered during the work that will from time to time require temporary deactivation (for less than 4 hours), the Contractor shall contact the Owner's Representative a minimum of 72 hours in advance to coordinate deactivation request. The Contractor shall also make the following notifications for projects in Athens-Clarke County:
      i. University of Georgia Office of Fire and Life Safety (706) 542-5801
      ii. University of Georgia Police Department (706) 542-5813
      iii. University of Georgia Fire Alarm Monitoring Company, Fire Protection Associates (706) 548-8659
      iv. University of Georgia specific facility affected
   C. Fire Alarm and Fire Sprinkler Deactivation (More Than 4 Hours At One Time): If a sprinkler or fire alarm system on the campus of the University of Georgia is out of service for more than four hours, a fire watch must be implemented according to the following procedures.
      i. Notifications for projects in Athens-Clarke County
         a. University of Georgia Office of Fire and Life Safety (706) 542-5801
         b. University of Georgia Police Department (706) 542-5813
         c. University of Georgia Fire Alarm Monitoring Company, Fire Protection Associates (706) 548-8659
         d. University of Georgia specific facility affected
      ii. Fire Watch Duties
         a. Person(s) on fire watch duty should not have any other responsibility during the time the fire watch is in effect and must keep a cell phone in his/her possession at all times during the fire watch.
         b. Patrol the entire area affected by the service outage every 30 minutes and look for any signs of fire, smoke and any activities that could create a fire.
         c. Keep a log of all fire watch patrols.
         d. Maintain fire watch for one hour beyond the last time that welding operations occurred.
         e. If a fire is discovered:
            1) Activate the building alarm system if in service.
            2) Call 911 to report the fire

3) If the building fire alarm system is out of service, ask the campus police to assist in the evacuation of the building.
4) Notify others on the floor of the fire.
5) Do not attempt to fight the fire unless you have been trained on the use of portable fire extinguishers.

f. Once the need for a temporary fire watch has passed and the fire protection system has been fully restored, the person on fire watch duty will cancel the fire watch by contacting the UGA Environmental Safety Department, the UGA Police Department, the UGA Fire Alarm monitoring company, and the UGA specific facility that is affected by the fire watch.

iii. All costs associated with the fire watch shall be included in the Cost of the Work or Base Bid.

D. UGA PM must contact the UGA Police Department Communications Center by phone (706-542-0090) to inform them of any work that may interfere with existing alarm operations before work starts.

01 35 13.02
SPECIAL PROJECT PROCEDURES – ROOFING & HOT WORK

1. **GENERAL**
   A. Related sections:
      i. 00 00 03 – Modifications to General Requirement of BOR Contracts
   B. Hot work permits are not required for new construction or full building renovations (i.e. renovations during which the building is completely vacated and turned over to the Contractor).
   C. Roofing & Hot Work for Additions & Renovations: To complement the requirements of previously cited NFPA-241, regarding Contractor's duties during the execution of work under this contract, the Owner requires that the Contractor comply with the following guidelines for all roofing projects, additions and renovations, and all other projects which require hot work. Hot work includes any construction activity that presents a source of ignition, such as welding, burning / cutting, heating, brazing and soldering. Contractor shall, prior to the start of work at the site, develop a documented fire safety plan for all areas included under the Contract. Such plan shall be the result of a complete assessment by the Contractor to minimize the potential for damage as a result of an uncontrolled fire and must be submitted to the Owner's designated fire and life safety representative for review and approval. The fire safety plan must include, but need not be limited to, the description and documentation of each of the following elements:
      i. Control of Combustibles
         a. Contractor shall visually inspect entire project location to identify combustible and non-combustible construction. Contractor shall identify sealed, inaccessible combustible spaces.
         b. Contractor shall identify and relocate all movable combustibles at least 35 feet horizontally from the work site. Where not possible, Contractor shall protect such combustibles with flame-proof covers or otherwise shield them with metal fire resistant guards or curtains.
      ii. Hot Work Permit
         a. Contractor shall comply with the Owner's documented hot work permit system, including the following minimum requirements:
            1) Contractor shall identify names and locations of fire watches for all hot work operations.
            2) Contractor shall identify timing and duration of all proposed hot work. Permits shall be valid for time specified on permit, as appropriate for the project needs.
            3) Contractor shall employ dedicated fire watches, which shall be located in direct visual contact of all areas of hot work operations including the underside of combustible attic spaces. If area of proposed work is not accessible from beneath, Contractor shall not under any circumstances use torches or direct flame.
            4) Contractor shall maintain a daily log of activities, including accurate project records of all fire watch activities.

5) Contractor shall assign responsibility for overseeing fire watches to specific individual(s) whose only duty is to watch for and to prevent fires occurring due to hot work. This individual(s) shall be listed on permit as responsible.
6) Each Contractor's fire watcher shall employ an operable cellular phone for immediate notification of fire department in the event of a fire.
7) Contractor shall be responsible for immediate fire department notification in case of fire.
8) Contractor shall continue fire watches for at least one hour after any hot work operations are completed.
9) Notify building occupants of fire or expected fire.

b. Contractor shall comply with the following minimum suppression requirements:
    1) Contractor shall provide 10 lb. multi-purpose dry chemical fire extinguishers within 20 feet of the operation.
    2) Where hot work, if approved by the Owner's designated fire and life safety representative, is necessary near combustible attic spaces, Contractor shall provide a charged hose line from building standpipe or hydrant. This requirement shall be coordinated with the Owner's fire safety coordinator to ensure standpipe or hydrant are available and that person(s) operating the charged hose line is properly trained and qualified to operate the hose.
    3) Contractor's fire watchers shall have fire extinguishing equipment readily available, and shall be trained in the proper use of all such equipment; proof of such training shall be included in fire safety plan.

iii. Fire Watch: If fire watches are required to be employed, the Contractor shall retain an independent consultant to provide a system of documented audits of compliance with fire watch provisions and NFPA 241. Contractor shall select the consultant from a list of approved firms furnished by the Owner at the pre-construction meeting. The cost for fire watch provisions, if applicable, shall be included in the Contractor Overhead Cost or Base Bid. Contractor shall note that the approval of the Contractor's fire safety plan by the Owner's fire and life safety representative does not relieve the Contractor from any duty to protect the Owner's property during the execution of work under this Contract. The Owner shall make available to the Contractor, upon written request, all documented information in the Owner's possession concerning the construction of the building or buildings included under this contract. The Contractor is ultimately responsible for minimizing the potential for fire damage while performing all work under this contract. If fire watch is approved, Contractor shall provide the fire watch contact information to University of Georgia Police Department 24 hours in advance of the fire watch.

01 35 23
OWNER SAFETY REQUIREMENTS – SAFETY BARRIERS

1. **GENERAL**
   A. Contractor shall provide barriers and warning signs to delineate the construction area and to designate the "Danger" area. This danger area shall be the area immediately surrounding the location where the Project is being completed. The exact location of the barriers shall be determined by the Contractor and coordinated with the Owner prior to beginning construction. The barriers shall be placed by the Contractor to warn and protect persons from any hazards, which may occur during the course of construction. The Contractor may elect to erect a fence to protect the limits of construction and to secure materials kept on site. All windscreens utilized shall be black in color and devoid of any company logos or other markers, and must be discussed with the Project Manager prior to installation. Associated costs shall be included in the Contractor Overhead Cost or Base Bid.

01 35 46
INDOOR AIR QUALITY PROCEDURES – DURING CONSTRUCTION

1. **GENERAL**
   A. Related sections:
      i. 01 32 16 – Construction Progress Schedule:
      ii. 06 00 00 – General Wood, Plastics, and Composites Requirements
      iii. 09 00 00 – General Finishes Requirements
      iv. 09 20 00 – Plaster and Gypsum Board
      v. 09 60 00 – Flooring
      vi. 09 68 00 – Carpeting
      vii. 09 91 23 – Interior Painting
      viii. 12 00 00 – General Furnishings Requirements
   B. Tobacco Free
      i. In accordance with the Tobacco and Smoke-Free Campus Policy of the Board of Regents of the University System of Georgia, the use of all forms of tobacco products is prohibited on property owned, leased, rented, in the possession of, or in any way used by the University. “Tobacco Products” is defined as cigarettes, cigars, pipes, all forms of smokeless tobacco, clove cigarettes and any other smoking devices that use tobacco such as hookahs or simulate the use of tobacco such as electronic cigarettes. Further, this policy prohibits any advertising, sale, or free sampling of tobacco products on University property unless specifically stated for research purposes. This prohibition includes but is not limited to all areas indoors and outdoors, buildings and parking lots owned, leased, rented or otherwise by the University. The use of tobacco products is prohibited in all vehicles – private or public – located on University property. Additionally, all events hosted by the University or by outside groups on behalf of the University shall be tobacco-free. Failure to comply with this policy by Contractor or Subcontractor shall constitute a material breach of these terms.
2. **PRODUCTS**
   A. Low volatile organic compound (VOC) materials shall be used within the interior weatherproofing of the facility; zero when available. Provide documentation to the Project Manager as requested. If there is a conflict between the VOC identified listed in the documents listed below, the one that allows the least VOCs shall apply.
      i. Architectural coatings shall not exceed VOC limits established by the South Coast Air Quality Management (SCAQMD) Rule 1113.
      ii. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and any other primers shall not exceed VOC limits established by the South Coast Air Quality Management (SCAQMD) Rule 1168.
      iii. Paints and coatings shall not exceed VOC limits established in the Green Seal Standard GS-11 Paints and Coatings.
      iv. Anti-corrosive paints and coatings shall not exceed VOC limits established in the Green Seal Standard GS-11 Criteria for Anti-Corrosive Paints
      v. Hard surface flooring products shall be FloorScore certified (current as of the date of this Standard).

vi. Carpeting, including pad or backing, shall meet or exceed the requirements of Green Label Plus, set by the Carpet and Rug Institute.
vii. Composite wood and agrifiber products that are part of the base building elements (not furniture or seating) shall not contain any added urea-formaldehyde resins.
viii. New furniture and seating shall be certified by GREENGUARD Environment Institute.

3. **EXECUTION**
   A. Maintain minimum MERV 8 air filters during construction.
   B. Fumes
      i. During the performance of work under this Contract, the Contractor may elect to engage in activities, or to use methods and materials, that result in fumes being generated and dispersed in occupied areas. In addition to complying with all codes and ordinances having jurisdiction, Contractor shall perform his work in a manner that shall minimize or completely eliminate the probability of such an occurrence. However, if fumes of any nature are generated or released by the Contractor to occupied portions of the building, such fumes shall be contained and exhausted from the spaces in accordance with previously cited codes and ordinances. If any Contractor-generated or Contractor-released fumes spread to occupied spaces, Contractor shall:
         a. Stop work causing fume generation or release.
         b. Contact the Owner's Representative (for information only).
         c. Determine the nature and extent of fume release.
         d. Purge all areas of these fumes; clean up areas if fumes deposited dirt or particulate matter.
         e. Change work methods to eliminate fumes.
         f. Continue working after steps 1 to 5 have been accomplished.
   C. For facilities that will have portions remain occupied during construction, the Contractor shall develop an indoor air quality management plan in compliance with Sheet Metal and Air Conditioning Contractor's National Association (SMACNA) Indoor Air Quality Guidelines for Occupied Buildings Under Construction, 2007.
   D. For projects over 10,000 square feet, per the requirements of this section, either building flush-out or demonstration of compliance with indoor air quality air testing requirements is required prior to occupancy. All interior finishes shall be installed. It is preferable for moveable furnishings and partitions, desk systems and workstations to be in place, however, this is not required.
      i. Building flush out:
         a. Building flush out is required prior to occupancy. If End-Users will begin inhabiting the renovated areas or new facility at Material Completion than building-flush out shall be complete prior to Material Completion. If End-Users will not begin inhabiting the renovated areas or new facility prior to Final Completion, then building flush out shall be complete prior to Final Completion.
         b. Building flush out shall be performed after all interior finishes are installed.

c. Following the U.S. Green Building Council guidelines, perform a building flush out that provides 14,000 cubic feet of outdoor air per square foot while maintaining a minimum interior temperature of 60 degrees with a relative humidity of less than 60%.
d. The Design Professional shall calculate how much outside air will be required for flush out and include in the specifications the number of days required for the project mechanical system to flush out the facility and the Contractor shall include the required days in the construction progress schedule.
e. Prior to building flush install all new filtration media.

ii. Air testing:
a. Use protocols consistent with the EPA Compendium of Methods for the Determination of Air Pollutants in Indoor Air.
b. Documented compliance with the following indoor air quality requirement is required prior to occupancy. If End-Users will begin inhabiting the renovated areas or new facility at Material Completion than air testing compliance shall be complete prior to Material Completion. If End-Users will not begin inhabiting the renovated areas or new facility prior to Final Completion, then air testing compliance shall be complete prior to Final Completion.
c. Air testing shall demonstrate that the following maximum concentrations are not exceeded:
1) Formaldehyde 27 parts per billion
2) Particulates (PM 10) 50 micrograms per cubic meter
3) Total VOCs 500 micrograms per cubic meter
4) 4-Phenylcyclohexine 6.5 micrograms per cubic meter
5) Carbon monoxide 9 parts per million

01 41 00
REGULATORY REQUIREMENTS

1. **GENERAL**
    A. Contractor shall comply with all applicable provisions of National Fire Protection Association (NFPA) Section 241, Standard for Safeguarding Construction, Alteration and Demolition Operations, latest edition.

01 41 26.01
RIGHT OF WAY ENCROACHMENT / ROADWAY OWNERSHIP

1. **GENERAL**
    A. Right of way (ROW) Encroachment / Driveway Permit
        i. The Design Professional is responsible for verifying the sidewalk, driveway, and roadway ownership in the location of the Project. Work in or adjacent to a road that is not owned by the BOR may require a ROW Encroachment permit and/or a driveway permit. The Design Professional is cautioned that many BOR campuses and other groups of areas that appear to be large masses of land owned by BOR, often have roadways with associated right of ways through those land masses that are not owned by the BOR.
    B. Roadway Ownership – UGA Athens Only
        i. The Design Professional can review the map of which roads at the UGA main campus in Athens, Georgia are owned by Athens-Clarke County. The map is located on the UGA OUA website at the following address: https://www.architects.uga.edu/sites/default/files/documents/field/maps/current/ugaownedroads11x17.pdf

01 41 26.02
LOCAL UTILITY INFORMATION & LOCATE

1. **GENERAL**
   A. Related sections:
      i. 33 00 00 – General Utilities Requirements
      ii. 33 10 00 – Water Supply Backflow Preventer Assemblies
      iii. 33 30 00 – Sanitary Sewerage Utilities – Sanitary Sewer Collection Systems
   B. The Design Professional is responsible for identifying which various reviews and permits related to utility permits are required and meeting the design requirements of the entity having jurisdiction for the location of the Project. The Design Professional shall apply for and submit documents for all applicable permits and make design revisions as required until the permits can be obtained.
   C. The Design Professional shall include the most up-to-date 811 logo on all drawings that call for excavation activity of any kind.
   D. Utility Owners at UGA, Athens, Georgia Campus
      i. Chilled Water – University of Georgia
      ii. Data Communications – University of Georgia Enterprise Information Technology Services (EITS)
      iii. Electric Power – Georgia Power Company or University of Georgia
      iv. Fire Alarm Systems – University of Georgia (maintenance contract with Fire Protection Associates)
      v. Irrigation – University of Georgia Facilities Management Division Grounds Department
      vi. Natural Gas – Atlanta Gas Light Company or University of Georgia
      vii. Sanitary Sewer – ACC Public Utilities or University of Georgia
      viii. Septic Sanitary System – University of Georgia
      ix. Security & Access Systems – University of Georgia Public Safety Division
      x. Steam – University of Georgia
      xi. Storm Sewer – University of Georgia
      xii. Television Cable – Charter Communications or EITS
      xiii. Voice Communications – AT&T or EITS
      xiv. Water – ACC Public Utilities or University of Georgia
   E. Locator Notification
      i. The Contractor shall use caution as there may be active utilities in the work area. Utilities are owned by the University of Georgia and other public utility companies. 72 hours in advance of digging, the Contractor shall contact:
         1. Public Underground Utility Locator Service at 1-800-282-7411 or 811 as required by Georgia State Law.
         2. For projects on the University of Georgia on the Athens, Georgia campus, University of Georgia Facilities Management Division Grounds Department at (706) 542-7450 to locate irrigation lines.
      ii. The Contractor shall be liable for all repair costs if he fails to properly notify utility locators as described above. Any utility line damaged by the Contractor which was marked or identified by the Owner of the utility shall be repaired by the Contractor at his own expense. In the event the Owner of the utility elects

to make the repairs with his own work force, the Contractor shall reimburse the Owner of the utility for the cost of repairs.

F. Utilities Furnished
   i. Certain utilities, if owned and operated by the University of Georgia, required for work to be performed under this Contract shall be furnished by the Owner at the Contractor's expense. However, these utilities shall be furnished at the point and in the capacity that they are available adjacent to the construction site. Any utility of different pressure, capacity, type, etc. required by the Contractor that is not available within the area shall be arranged for by the Contractor at his own expense. Any expense involved to the Contractor in extending the utilities from the present location to the point required shall be at the Contractor's expense and included in the Cost of the Work or the Base Bid.

G. Water Utilities – Public Water Distribution System
   i. Any work on the public water distribution system must be approved and inspected by applicable local government offices and must be performed in accordance with the local governmental regulations. In Athens-Clarke County, most water mains, fire hydrants and water meters are under the jurisdiction of The Unified Government of Athens-Clarke County (ACC).
   ii. All connections to the ACC water distribution system shall be approved and inspected by ACC Public Utilities. The current version of the construction specifications published by ACC Public Utilities (available at www.athensclarkecounty.com) regarding water main construction are incorporated into this Contract.
   iii. The Contractor or Subcontractor constructing the water distribution system improvements described in this Contract shall be on the ACC list of approved contractors.
   iv. Final approval, acceptance and payment for work completed on the water distribution system will be contingent on acceptance of the improvements by the ACC Public Utilities.
   v. All costs associated with compliance of the water main construction requirements shall be included in the Cost of the Work or Base Bid.

H. Water Supply Backflow Preventer Assemblies
   i. Any work on backflow preventers must be approved and inspected by applicable local government offices and must be performed in accordance with the local governmental regulations.
   ii. In Athens-Clarke County, the Double-Check Backflow Preventer for the fire main connection and Reduced Pressure Zone (RPZ) Backflow Preventers for the domestic water connections are under the jurisdiction of ACC.
   iii. The current version of the construction specifications published by ACC (available at www.athensclarkecounty.com) regarding cross-connection / back flow are incorporated into the standards.
   iv. All costs associated with compliance of the cross-connection / back flow construction requirements shall be included in the Cost of the Work or Base Bid.

I. Sanitary Sewerage Utilities – Sanitary Sewer Collection System

i. Any work on the public sanitary sewer collection system must be approved and inspected by applicable local government offices and must be performed in accordance with the local governmental regulations.
ii. In Athens-Clarke County, most sanitary sewer mains and man-holes are under the jurisdiction of the ACC.
iii. All connections to the ACC wastewater system shall be approved and inspected by ACC Public Utilities.
iv. The current version of the construction specifications published by ACC Public Utilities (available at www.athensclarkecounty.com) regarding wastewater system construction are incorporated into the standards.
v. For work within ACC, the Contractor or Subcontractor constructing the wastewater system improvements described in the standards shall be on the ACC list of approved contractors.
vi. Final approval, acceptance and payment for work completed on the water distribution system will be contingent on acceptance of the improvements by the ACC Public Utilities.
vii. All costs associated with compliance of the water main construction requirements shall be included in the Cost of the Work or Base Bid.

J. Electrical Utility – University-Owned Electrical Distribution System

Revised June 2026

i. Work involving connection to, modification of, or extension of the University of Georgia-owned electrical distribution system shall be coordinated with and approved by the University of Georgia FMD/UEM Representatives in accordance with Division 26 requirements.
ii. The contractor(s) shall coordinate with the design professional(s) to identify all proposed electrical connections and obtain all required reviews, and permits, approvals, shutdown requests, and inspections through the University's Facilities Management Division prior to construction.
iii. All work shall comply with current University electrical standards, details, and operational requirements, and may be restricted to contractors approved by the University. The University may require that specific portions of the work, including shutdowns, tie-ins, testing, or final connection, be performed by University personnel.
iv. Final approval, acceptance, and authorization to energize the system shall be contingent upon inspection and acceptance by the University of Georgia.
v. All costs associated with compliance, coordination, and connection to the University-owned electrical distribution system shall be included in the Cost of the Work or Base Bid.

01 41 26.03
PERMIT REQUIREMENTS – CONSTRUCTION PERMITS

1. **GENERAL**
   A. Related sections:
      i. 00 00 08 – Design Professional Documentation Requirements & Deliverables
      ii. 01 41 26.04 – Fire Marshal Construction Inspection Requirements
   B. The State of Georgia Office of the Insurance and Safety Fire Commissioner (Georgia State Fire Marshal) has jurisdiction on Board of Regents Property located in the State of Georgia, unless noted otherwise. Design Professionals should not contact the local building authority, unless guided otherwise. For state-owned property, the State Fire Marshal has jurisdiction related to construction permits, 80% and 100% inspections, certificate of occupancy, etc. Note: Local site development and utility work may require permits through the local city / county authority.
   C. Leased property: When the BOR leases property outside state owned property the construction permit will be obtained from the local city / county authority having jurisdiction.
   D. Variance: In the instance that modifications need to be made, which, therefore, deviates from the approved permit by the Georgia State Fire Marshal, the Design Professional can only request for a Georgia State Fire Marshal variance with the written approval by the Associate Vice President of OUA and Office of Fire and Life Safety.
   E. UGA Office of Fire and Life Safety: For renovation projects where the cost of the renovation is up to 50% of the assessed value of the structure as determined by the insured value by the records of the State Department of Administrative Services, the University of Georgia shall provide the following services on all University owned and operated or occupied buildings and structures on behalf of the Office of the Insurance and Safety Fire Commissioner and the Safety Fire Division:
      i. Conduct plan reviews, provide comments and approvals, and issue building permits for renovation project.
         a. A digital copy of the "Plans Review Submission Form" with digital plans and specifications shall be submitted to the UGA Office of Fire and Life Safety. The form can be found at the Office of Fire and Life Safety Plans Review Submission page. Additional Fire and Life Safety permit and safety information can be found at the Office of Fire and Life Safety page.
         b. The transmittal form and drawings and specifications shall be submitted at **minimum of four weeks** prior to the date of commencement of the scheduled date of construction.
      ii. Plan reviews and inspections are of small renovations that involve life safety code features including (but not limited to) egress and exiting, fire alarm systems, incidental changes to sprinkler systems, occupancy changes for incidental use areas, egress lighting, emergency lighting and other relevant life safety and building code features. This also includes adding or eliminating doors and walls, egress corridors or exit discharge.
      iii. Conduct field inspections when a project has reached 80% completion and 100% completion and conduct site consultative inspections.

Revised June 2026

01 41 26.04
FIRE MARSHAL CONSTRUCTION INSPECTION REQUIREMENTS

1. **GENERAL**
   A. Related sections:
      i. 00 00 03 – Modifications to General Requirements for BOR Contracts
      ii. 01 41 26.03 – Permit Requirements – Construction Permits
   B. Contractor shall prepare paperwork in advance of inspections and organize in a tabbed three ringer binder that will be given to UGA Office of Fire and Life Safety.
   C. The requirements contained in this section are the minimum requirements and additional requirements per the Authority Having Jurisdiction may be requested. For projects managed by GSFIC, 'Authority Having Jurisdiction' shall mean the State Fire Marshal.
   D. All requested signatures shall be signed in blue ink and letters shall be on company letterhead.
   E. In addition to 80% and 100% inspection, the Contractor shall contact Project Manager and request inspection / visual witness of tests by UGA Office of Fire and Life Safety, a minimum of 24 hours in advance, for the following as applicable to Project:
      i. Visual confirmation of ball drip valve prior to cover up.
      ii. On site visual observation of all Fire Pump tests.
      iii. On site visual observation of flushing of underground waterlines of fire sprinklers system.
      iv. On site visual observation of flushing of aboveground waterlines of fire sprinkler system.
      v. On site visual observation of light leak test for cooking hood exhaust systems, light bulb being run through duct work (during non-daylight hours).
   F. Contractor shall provide documentation as applicable to the Project:
      i. Fire sealant test data and installation data sheet for specific products used.
      ii. Building structural member spray-on fireproofing with third party testing certification.
      iii. Certification of purchase of gypsum board and/or CMU fire resistive material for structural or fire barrier purposes.
      iv. Clean agent system: provide installer certification and completion in accordance with applicable codes, license to practice in the State of Georgia, special hazard certification as required for interconnection into other building equipment, blue tag on equipment.
      v. Commercial hood fire suppression system: provide installer certification and completion in accordance with applicable codes, license to practice in the State of Georgia, special hazard certification as required for interconnection into other building equipment, blue tag on equipment.
      vi. Fire Sprinkler:
         1) Below ground sprinkler test certificate.
         2) Above ground sprinkler test certificate.
         3) Site supervision form signed by certificate of competency holder.
         4) For welded sprinkler piping on-site, provide the fire sprinkler piping welding certification(s), welder's marks, and the fire sprinkler piping

welder letter of certification for disc or coupon retrieval (these are the plugs that are burned/cut out when a branch line is welded to a main line).

5) For fire pump, installation acceptance testing data and flow graph.
6) Fire sprinkler certification for any specialized interconnection to pre-action systems or deluge systems.
7) Copy of sprinkler contractor's license to practice work in the State of Georgia.
8) Certificate of completion of work in accordance with NFPA 13 (or other applicable codes).

vii. Plumbing / Site Utility (from each Contractor if there are separate plumbing and site utility contractors):

1) Certificate of completion of work in accordance with the International Plumbing Code edition applicable to the Project (or other applicable codes).
2) Copy of Plumbing Contractor's license to practice work in the State of Georgia.
3) Installation data for boiler equipment.
4) Backflow preventer test certificates.

viii. HVAC/Mechanical Items:

1) Certificate of completion of work in accordance with the International Mechanical Code edition applicable to the Project (or other applicable codes).
2) Copy of HVAC/Mechanical Contractor's license to practice work in the State of Georgia.
3) If there is a smoke shutdown system, provide a letter of certification indicating the proper operation of this system.

ix. Electrical

1) Certificate of completion of work in accordance with the current edition of National Electrical Code and NFPA 72 (or other applicable codes).
2) Copy of Electrical Contractor's license to practice work in the State of Georgia.
3) Fire alarm system battery calculations indicating the minimum amp-hours required to run the system in accordance with NFPA 72.
4) Fire alarm system record of completion and certification.
5) Copy of Fire Alarm Contractor's license to practice work in the State of Georgia.
6) Fire alarm certification for interconnection to auxiliary systems such as kitchen hood suppression system, air handling duct detectors, smoke removal systems, exhaust fume hoods, chemical fume hoods, elevator recall systems, fire exit door releases.
7) If there is a generator, provide electrical generator acceptance test.

01 41 26.05
ROCK REMOVAL – ROCK BLASTING

1. **GENERAL**
   A. If the concept to use explosives to remove rock is approved by the Project Manager, then the Contractor, a minimum of seven calendar days prior to commencing blasting activities, shall provide the Project Manager with:
      i. The proposed blasting schedule.
      ii. A complete and executed 'UGA Pre-Blasting Checklist' which is located at the end of this section.
   B. The Project Manager will forward the blasting schedule and 'UGA Blasting Checklist' to UGA Office of Fire Safety who will in turn coordinate with the State Fire Marshal. The Project Manager and Contractor must receive written authorization of approval from UGA Office of Fire and Life Safety prior to authorizing the commencement of blasting.
   C. Blasting company shall complete and execute the 'Daily Blasting Checklist' which is located at the end of this section, for each day of blasting activities. Daily records shall be submitted to the contractor for record keeping and distribution.

01 41 26.06
DINING SERVICES

1. **GENERAL**
    A. Related sections:
        i. 00 00 08 – Design Professional Documentation Requirements & Deliverables
    B. Dining Services projects being undertaken as a component of another active project are funded separately, however decisions regarding Design Professional and Contractor selection must be made concurrently with the selections for the main Project's Contract.
    C. The UGA Environmental Safety Division (ESD) shall be involved in the design development and reviews, permitting, and inspections for all new or renovated food service areas where food is being prepared in UGA owned or leased facilities. The Design Professional shall work through the Project Manager to coordinate meetings as required.
        i. Catering kitchens are exempt from this requirement.
    D. Programming: As soon as a food service operations is identified within a project program, a meeting should be coordinated with the Design Professional(s), UGA PM, ESD, and UGA Dining Services to further discuss the scope, refine the program, and to identify and coordinate contractual requirements involving third party franchisors.
    E. Design Professional(s) shall coordinate a meeting between Dining Services, Project Manager, and Construction Manager regarding the sourcing and installation responsibilities regarding equipment on a per project basis.
    F. For renovations and other work in existing facilities, a Pre-TAB report shall be provided by UGA prior to any design work occurring to verify existing operational parameters.
    G. An air balance diagram shall be provided as a component of the mechanical design documents.
    H. Coordinate grease trap placement with outside air intake locations.
    I. Equipment schedules delineating sourcing and installation responsibilities must be reviewed, signed off on, and accepted by both Dining Services and the Project Manager for each project.
    J. Prior to Schematic Design, signage requirements shall be reviewed with Dining Services, OUA, and the Design Professional(s).
    K. Schematic Design and Design Development: As part of these milestone design reviews, the Project Manager will coordinate meetings with the Design Professional(s), ESD, and UGA Dining Services to review the documents to date and provide input and guidance.
        i. ESD will review the drawings and ESD will forward preliminary concept drawings to the authority having jurisdiction for food safety permitting and share any review comments with the Project Manager.
    L. Construction Documents: The Project Manager will coordinate meetings with the Design Professional(s), ESD, and UGA Dining Services to review the documents to date and provide input and guidance.
    M. Submission to Health Department for Construction Permit
        i. The Project Manager shall coordinate submission of design information (drawings, specifications, equipment lists, etc.) to the Athens-Clarke County Health Department for review at the Design Development and 80% design

milestones in order to obtain a construction permit from ACC Health Department.

N. Submission to Health Department for Operational Permit
   i. The Design Professional shall not submit any documents directly to the Athens-Clarke County Health Department.
   ii. ESD will coordinate with the appropriate entity (UGA Dining Services, Stadium Concessionaire, etc.) to complete the application and the entity responsible for preparing the food will submit the application.
   iii. The Design Professional shall supply all necessary information to complete the forms as part of the Contract Basic Services.
   iv. Reference resource: https://dph.georgia.gov/environmental-health/food-service and http://dph.georgia.gov/food-service-design-installation-and-construction-manual.
   v. The documents that will be submitted as part of the food service application shall include as a minimum (may vary per jurisdiction having authority):
      1. Physical address of the building
      2. Location of building onsite showing access roads, alleys, and streets.
      3. Location of outside equipment as applicable:
         a. Dumpsters and compactors
         b. Well
         c. Septic System
      4. Plan drawn to scale showing location of kitchen equipment.
      5. Detail drawings of any walk-in refrigerators / freezers, if applicable.
      6. Square footage for eatery including dimensions.
      7. Cubic footage of dry storage, if applicable.
      8. Manufacturer specification sheet for each piece of equipment shown on the plan.
      9. Manufacturer specification sheet for water heater.
      10. Manufacturer specification sheet for grease trap.
      11. Plan drawing(s) for plumbing.
      12. Plan drawings(s) for electrical.
      13. Plan(s) for mechanical ventilation including:
         a. Mechanical hood ventilation detail drawing if applicable with:
            i. Design Intent
            ii. Filters and/or extraction devices
            iii. Square footage
            iv. Fire protection
            v. Air capacity in cubic feet per minute (current capacity and anticipated needed)
            vi. Air makeup in cubic feet per minute (current capacity and anticipated needed)
      14. Finish schedule. Refer to the already approved finishes listed in Section L of the Rules and Regulations Food Service – Chapter 290-5-14 Manual for Design, Installation and Construction: http://dph.georgia.gov/food-service-design-installation-and-construction-manual.

15. Plumbing connections. Refer to Section N of the Rules and Regulations Food Service – Chapter 290-5-14 Manual for Design, Installation and Construction: The plumbing connection for each item in the table below is required.

	Air Gap	Air Break	Integral Trap	P Trap	Vacuum Breaker	Condensate Pump
Toilet						
Urinals						
Dishwasher						
Garbage Grinder						
Ice Machine						
Ice Storage Bin						
Sinks ▪ Mop ▪ Janitor ▪ Handwash ▪ 3 Comp. ▪ 2 Comp. ▪ 1 Comp. ▪ Water ▪ Station						
Steam Table						
Dipper Well						
Refrigeration Condensate Drain Lines						
Hose Connection						
Potato Peeler						
Beverage Dispenser w/ Carbonator						
Other _____						

O. Inspections

i. The Contractor shall not submit requests for inspections directly to the authority having jurisdiction for the project.
ii. ESD or Dining Services will notify the Project Manager of proposed food service area inspection dates, will coordinate the inspection and will typically have personnel on site during all inspections.

2. **PRODUCTS**

A. Plumbing

i. All above-floor grease interceptors shall be constructed of polyethylene. Alternate materials are not acceptable.
ii. Acceptable options for above-floor grease interceptors shall be Zurn GT2702-07 or equal.
iii. Outdoor subgrade grease interceptors shall be constructed of precast concrete, and shall be located with sufficient separation from outside air intakes in order to prevent odors from the interceptor from entering the building.
iv. Acceptable options for three-compartment sinks at smaller café facilities shall be Advance Tabco K7-CS-21 or equal. For full-size kitchen facilities, the Design Professional shall coordinate specific requirements.
v. Lever waste drains are required and shall be by T&S (or equal).
vi. Indirect drains shall be installed at all sinks.
vii. The domestic water supply serving the Dining Services area shall be sub-metered. The Design Professional shall contact the Project Manager in order to coordinate project-specific metering and sub-metering requirements.
viii. An EcoLab water filtration shall be provided by Dining Services and coordinated by the Design Professional and Contractor.
ix. The water filtration system shall be centralized whenever possible and shall serve equipment such as ice machines, coffee makers, tea brewers, etc. Coordinate point of connection and space requirements with Dining Services and Project Manager.
x. Hand sink faucets shall be by T&S Brass (or equal) and shall be equipped with integrated hands-free sensors and hydrogenerators.
xi. It is preferred that each Dining Services location is served by its own water heater.

B. Mechanical

i. No horizontal runs are allowed for grease ducts. Grease ducts are to be light tested, pressure tested, and smoke tested prior to space turnover.
ii. Kitchen hoods shall be energy efficient and comply with the Standards.
iii. Make-up air to hoods shall be conditioned.
iv. All exhausts and other system components shall be accessible.
v. All HVAC controls shall be compatible with the existing building systems and all equipment provided shall have native BACnet interface.
vi. Refrigeration condensing units are to be remotely located where the rejected heat will not add load to the HVAC system; coordinate with Project Manager and Dining Services. If remote location of compressors is not possible, provide equipment with bottom-mounted compressors and provide water cooled condensers in buildings with conveniently located recirculating chilled or process chilled water; coordinate with Project Manager.

C. Electrical
   i. The electrical service feeding the food service area shall be metered at the panel or sub-panel feeding the food service area. The Design Professional shall contact the Project Manager in order to coordinate project-specific metering and sub-metering requirements.
   ii. Each piece of hard-wired equipment must have a point of disconnect to facilitate maintenance activities.
   iii. Each piece of equipment requiring nonstandard outlets must be coordinated with equipment requirements and indicated on both the equipment schedule and electrical design documents.
   iv. GFI breakers shall be provided in lieu of GFI outlets when possible.
   v. Lighting fixtures shall be LED and comply with the Standards. Refer to Section 26 51 00 Interior Lighting.
   vi. In general, lights are to be switched; no dimmers or lighting control systems are required. Coordinate project-specific lighting requirements and switch locations with Project Manager and Dining Services.

D. Finishes
   i. The wall surface material of back-of-house rooms associated with the food service area shall be fiber-reinforced plastic (FRP) panels, which shall extend from floor to ceiling.
   ii. Flooring at all non-guest areas (food preparation, storage, coolers, freezers, etc.) shall be Titan non-skid, slip-resistant flooring by BMI (or equal). Guest use areas shall receive easily cleanable slip-resistant flooring consistent with the overall design and finish selections. Base in these areas shall also be of Titan material.
   iii. Base shall be cove base where the top leading edge of the cove shall be flush with the finish surface of the floor material.
   iv. Grout at all food service areas shall be dark color epoxy grout.
   v. Ceiling tiles shall be NSF-approved vinyl-clad washable tiles at all food preparation and storage areas. Product shall be equal to Global Industrial Model: WBB872969 Genesis Smooth Pro PVC Ceiling Tile 740-00, Waterproof & Washable, 2'L X 2'W, White. *Revised June 2026*

E. Caulking / Sealants
   i. All joints between dissimilar materials shall be caulked with clear silicone caulk in a manner commensurate with manufacturer instructions.

F. Furnishings
   i. Food service work tables, cabinets, and casework shall be constructed entirely of stainless steel. Legs and frame shall be square (304-SS) and sheet stainless steel shall be 200- or 300-series. 400-series stainless steel is not acceptable in any case. Decorative cladding is acceptable at aesthetically sensitive areas subject to approval by the Project Manager and Dining Services. When decorative cladding is used, all plywood substrates must be marine grade. Cabinet base may be required to be elevated on a concrete or stainless-steel curb; Design Professional to coordinate with Project Manager and Dining Services.
   ii. Countertops and backsplashes shall be stainless steel or solid surface material as approved by Project Manager and Dining Services.

iii. Cabinet backsplashes shall be integral with countertops.

G. Communications
   i. DSL lines for credit / debit card services are not tied to the campus network and specific needs (entrance location and distribution devices) must be coordinated with the End-User during design.
   ii. Phone and campus network data ports are required at each point-of-sale station. These ports should be run back to the network / communications wall cabinet for the Dining Services area.

H. Security
   i. Coordinate service entrance access requirements with End-User.
   ii. Security cameras and any recording device shall be provided by Dining Services, however conduit, backboxes, cabling, and other supporting appurtenances required to accommodate the security system shall be provided and installed by the Contractor. Locations shall be coordinated with Dining Services through the assigned Project Manager. Typical locations to be monitored include (but are not limited to) storage areas and point-of-sale locations.
   iii. The video recording device should be established within the Dining Service area, such as, for example, in the network / communications wall cabinet typically installed for such areas.

01 41 26.07
CHEMICAL STORAGE ROOMS

1. **GENERAL**
   A. Related Sections:
      i. 00 00 07 - Design Professional Documentation Requirements and Deliverables
      ii. 01 58 13 – Temporary Project Signage
      iii. 01 77 00 – Project Closeout
   B. This section applies to projects with any of the following:
      i. Instructional laboratory prep rooms
      ii. Research laboratory support rooms
      iii. Research laboratory chemical storage rooms
   C. During Design
      i. Anticipated chemical types and quantities to be identified by end users and provided in excel spreadsheet to Office of the University Architect (OUA) or Facilities Maintenance Division (FMD) Project Manager that will be shared with design professional of record, Environmental Safety Division (ESD), and Office of Research Safety (ORS).
      ii. For all prep, support, and chemical storage rooms, the end users should consider if there are anticipated bulk purchases related to how funding is allocated to determine if greater storage needs are required for portions of the year; during design, discussions should occur about what room size makes sense related to annual purchase funding for chemicals and the project construction funding available for the room. Final room size decisions will be documented by the OUA or FMD Project Manager or the Design Professional and shared with the end users, ESD, and OR.
      iii. For instructional prep rooms, the end users should also provide to the OUA or FMD Project Manager and/or Design Professional the anticipated quantities of UGA prepared solutions (mixed from purchased chemicals) that will be stored in the prep room so potential outgassing can also be accounted for in the design of the room exhaust and amount of air changes.
      iv. Design professional of record, in compliance with the provisions of the State of Georgia Minimum Fire Safety Standard 120-3-3 and the most current adopted edition of NFPA 45 – Standard on Fire Protection for Laboratories Using Chemicals will determine, using the provisions of NFPA 45 – Chapter 4: Laboratory Unit Hazard Classification and Chapter 5: Laboratory Unit and Construction, the maximum quantities of flammable liquids for each laboratory and laboratory support room, the Classification (A, B, C, or D) of each room.
      v. After design development, the OUA or FMD Project Manager will develop letter about end user awareness and adherence to maximum chemical quantity storage requirements. OUA PM to follow procedure in OUA Guidebook.
   D. During Construction
      i. For rooms specifically used for chemical storage, based on construction and occupancy type, the code classification utilized for construction permitting and quantity amount limitations shall be posted inside the room.

E. During Closeout
   i. Include in the Operations and Maintenance Manual, copies of the letters and chemical quantity lists prepared during design.
   ii. During owner training, a session shall be held with end users about chemical quantity storage amounts (led by ORS and/or ESD). This should include educating end-users about purchasing of chemicals in bulk and insuring that allowable chemical quantities are not exceeded.
      a. This should also include training of building manager(s) and also pointing out that personnel who frequently occupy a space may not notice chemical smells as they become use to it.
      b. End users and building managers shall also be trained to immediately report any signs of corrosion as that could be an indicator of chemical quantities higher than what the system was designed to handle

F. Post-Occupancy
   i. During first year of occupancy and afterwards, ESD and/or ORS shall inspect chemical storage rooms and laboratories for compliance with allowable quantities at least once per year with reports to Principle Investigators, Department Heads, and Deans and Vice Presidents as applicable.

01 45 33
SPECIAL INSPECTIONS

1. **GENERAL**
    A. The Owner will contract directly with the Owner's Testing Agency.
    B. Design Professional to prepare schedule of special inspections for the Project.
    C. Testing
        i. The Owner reserves the right to employ the services of a testing agency ("Owner's Testing Agency"). Owner's Testing Agency shall perform tests as mandated by the Owner and the Contract Documents. For testing identified in the Contract Documents, the Contractor is responsible for notifying Owner's Testing Agency 24 hours in advance of time and date testing is required. If the Contractor requests the Owner's Testing Agency on site and is not ready for the Owner's Testing Agency's services, the Contractor shall reimburse the Owner for the Owner's Testing Agency's complete cost for the site trip including mileage, travel time, and time spent on-site waiting for the Contractor to be ready for the Owner's Testing Agency's services. The Contractor shall reimburse the Owner for any re-test due to failure of initial testing.

01 52 19
SANITARY FACILITIES – TOILET FACILITIES

1. **GENERAL**
   A. The Contractor shall provide from the beginning of work, washing and temporary enclosed toilet facilities for use of workers on the job. Such facilities shall be maintained in a clean and sanitary condition meeting all local and state health standards throughout their use. The Contractor shall not permit any sanitary nuisance in or about the work. Toilet facilities for the Contractor's workers shall be provided by the Contractor as part of the Contractor Overhead Cost or Base Bid. University toilet facilities shall NOT be made available to the Contractor's workforce.

01 55 00.01
ROADWAY, SIDEWALK, AND PARKING LOT CLOSURES

1. **GENERAL**
   A. Roadway, sidewalk, and parking lot use, blocking and closing shall be subject to approval by the Owner. The Contractor shall coordinate through the Project Manager. A minimum of 72-hours' notice is required for the Owner to make all necessary arrangements for this work, and such work shall be scheduled at the convenience of the Owner. Roadways, sidewalks, and parking lots shall not be blocked for extended periods of time.

01 55 19
TEMPORARY PARKING AREAS

1. **GENERAL**
   A. This work is being performed on the Owner's property and parking is restricted and regulated. Contractor and workers shall park only in areas designated by the Owner.
   B. For projects in Athens-Clarke County only: The Contractor's forces electing to park on campus are required to purchase "Contractor Parking Permits" from University of Georgia Parking Services (706-542-PARK). Contractor shall include the cost of parking permits in the Contractor Overhead Cost or Base Bid. Any costs associated with parking permits shall be included in the Cost of the Work by each Subcontractor as applicable. Designated 'laydown' area taken from an existing permitted parking area shall not be used as a 'free parking' area. However, the Contractor may park some (around 10) vehicles within the designated construction site that do not require permits. Abuse of this free parking allowance may result in the UGA Parking Services requiring the purchase of permits or immediate reduction of parked vehicles. Parking spaces directly adjacent to the project site are not guaranteed. It is the responsibility of the Contractor to coordinate parking availability outside of the Project fence with University of Georgia Parking Services. The Contractor is responsible for paying for all fines related to parking violations at Contractor sole cost and the Contractor shall not be allowed to pay for fines from the Contractor Contingency or as part of the Cost of the Work or as a Change Order.
   C. A permit is not required for parking construction related vehicles and/or personal vehicles driven by those working on the construction site within the staging area. It is ultimately up to the Contractor to decide how to utilize available space within their staging area.

01 55 26
TRAFFIC CONTROL

1. **GENERAL**
    A. Contractor shall provide adequate traffic warning methods and devices in accordance with Georgia Department of Transportation standards to warn motorist and pedestrians of any obstructions within the right of way of the roadway. Contractor shall coordinate with the Project Manager and obtain land and road closure permits as required by the Owner and the local Public Works Department. The cost of all traffic control and associated permits shall be included in the Base Bid or Overhead Cost.

01 55 29
STAGING AREAS – STORAGE

1. **GENERAL**
   A. The Contractor shall coordinate and use only the area(s) designated by the Owner for job site office, storage of materials and equipment, parking and staging operations. These areas and grounds shall be left clean and shall be restored to the same condition as when accepted by the Contractor. Construction and staging are limited to the designated areas.

01 56 39
TEMPORARY TREE & PLANT PROTECTION

1. **GENERAL**
   A. Related sections:
      i. 32 01 90.23 – Pruning
      ii. 32 90 00 – Planting
      iii. 32 91 00 – Planting Preparation
      iv. 32 91 13.16 – Mulching
      v. 32 92 00 – Turf and Grasses
      vi. 32 93 00 – Plants
      vii. 32 94 13 – Landscape Edging
   B. Scope
      i. All existing trees and shrubs within the designated limits of a project shall be protected from soil compaction, equipment damage and stockpiling of materials such as sand, gravel and topsoil**.** This includes any adjoining areas in which planting materials or equipment (including vehicles) will be stored. In order to prevent damage to trees and tree root systems, protective barriers shall be installed before any site work begins.
      ii. The tree canopy / tree root zones of trees designated to be preserved shall be protected during the entire construction process.
      iii. Tree trunks and branches shall not be damaged by equipment or workers. Tree roots shall be protected from soil compaction, damage by trenching or excessive grade changes, and hazardous materials or waste products.
      iv. Any anticipated or required pruning shall be performed by the UGA Grounds Department or by an ISA certified arborist with plan approved by UGA Urban Forester.
      v. A Tree and Plant Protection Map shall be prepared by the design professional, which identifies all areas affected by the Project. The Tree and Plant Protection Map must show the location, species and size of all existing trees and landscape that may be negatively impacted by the Project. The map must indicate which trees and shrubs are to be removed, and which ones are to remain. The plan shall include protection measures for all tree and landscape impacts, including all utility connections for the Project. Plants scheduled to be removed shall be evaluated for relocation as approved by the UGA Grounds Department.
      vi. Tree Protection Fencing shall be shown on all Demolition Plans and Sediment & Erosion Control Plans throughout every phase of a project."
   C. Tree Canopy / Tree Root Protection Zones
      i. Prior to the start of any site work the Contractor will erect fencing around trees which are to be preserved and sensitive root zones which are to be protected within the construction site.
      ii. The Contractor shall meet with the UGA Grounds Department representative and Project Manager prior to beginning any site work to review and verify all work procedures, trailer location, stockpiling and staging areas, access and haul routes, and equipment operation methods with respect to the required tree canopy / tree root protection measures.

iii. Trees indicated on the plan to remain shall be protected from injury to their branches, trunks, and root zones during the entire construction period. Protection of tree canopy / tree root zones shall be by the placement of temporary fencing as outlined.

iv. No removal or encroachment into tree protection enclosures shall be permitted unless coordinated with the UGA PM and UGA Urban Forester (for Athens-area projects).

Revised Aug 2025

v. The Contractor shall be responsible for installation and maintenance of all tree protection fencing. Protective fencing shall remain undisturbed until all site work has been completed. The Contractor shall remove fencing at completion of the Project.

vi. If protective fencing is damaged, the Contractor shall immediately execute the necessary repairs to re-establish the protective fencing to the original configurations.

vii. The Contractor shall be held liable for any damages to protected trees and root zones caused by unauthorized intrusions into the protected areas during construction activity.

viii. Any pruning of protected trees that may be required during the course of construction shall be performed by the UGA Grounds Department. Coordinate pruning requests with the UGA PM and UGA Urban Forester (for Athens-area projects).

ix. Erosion control devices shall be installed as per contract drawings with particular emphasis on preventing siltation and/or erosion from occurring within the tree root protection zone.

D. Tree Canopy and Tree Root Zones Allowed Disturbance

i. In situations where the Design Professional has received written approval from the UGA PM and UGA Urban Forester (for Athens-area projects) to allow work that will compromise tree root zones, the Contractor will be responsible for the follow up and shall be included in the Cost of the Work or Bid:

a. Watering affected tree as prescribed by the Design Professional or UGA Grounds Department.

b. Air spading by certified arborist.

2. **PRODUCTS**

A. Protective Fencing

i. Protective fencing shall be 6 feet high chain link fencing. Support posts for chain link fencing shall be metal posts with a minimum of 2-inch diameter and full height of fencing. Use 9 gauge top and bottom wires between posts to support chain link fencing. Attach fencing to posts and top and bottom wires with 9-gauge wire ties.

B. Geotextile Fabric

i. Filter fabric shall meet the requirements for GADOT Type 3 engineering fabric, Class A.

C. Mulch

i. Coarse chipped or ground wood mulch shall be approved prior to application by the UGA PM and UGA Urban Forester (for Athens-area projects).

3. **EXECUTION**

A. General
   i. The Contractor shall locate utilities prior to installing chain link fence support posts into the ground.
   ii. Trees to be removed that have branches extending into the canopy of trees to be preserved shall be removed by a certified arborist and not by the Contractor or a demolition Subcontractor. The certified arborist shall remove the tree in a manner that causes no damage to the protected trees and landscape to remain after construction is completed.
   iii. Trees to be removed shall be felled so as to fall away from protective zones and to avoid pulling and breaking of tree roots indicated on the plan to remain.
   iv. Any brush clearing required within or around the tree canopy protection zone shall be accomplished with hand operated equipment.
   v. The Contractor shall be held liable for damages incurred to any tree branches that extend over protective fencing and to any trees or other plant material located on the site and indicated on the plan to remain. The Contractor shall notify the Project Manager when any overhanging branches or other plant material is interfering with or risks damage due to construction activity.
   vi. If work causes an existing tree to be removed that is not shown on plans as planned demolition, the UGA Grounds Department shall be consulted with to evaluate and determine future viability of the existing tree(s) located within the area(s) of proposed construction excavation.
   vii. Final evaluations shall be coordinated with the UGA PM and UGA Urban Forester (for Athens-area projects) to determine if tree should remain, be relocated, or be removed if unable to survive encroachment of new revised design and construction.
B. Scope of work Within or Around Tree Root Protection Zone
   i. Any grading, construction, demolition, remedial measures or other work that is expected to encounter tree roots shall be made in consultation with the UGA PM and UGA Urban Forester (for Athens-area projects).
   ii. No machine digging shall take place within a radius of one and one-half foot for each 1-inch diameter at breast height (DBH) of the tree. DBH is defined as the diameter of the trunk measured at 54 inches above grade.
   iii. Any roots 2 inches in diameter or less that sustain damage during construction shall be exposed to sound tissue and cleanly pruned close to the tree side of the trench. Clean cuts shall be made at all times.
   iv. For construction Projects requiring access or haul roads that must pass over the root area of trees to be retained, a roadbed shall be installed using 4 inches (minimum) of mulch or wood chips covered with approved logging mats. Approval shall be given by the Project Manager. The roadbed shall be replenished and maintained as necessary to provide desired root zone protection. For projects requiring materials storage within the root area of trees to be retained or protected, this area shall be constructed using an approved geotextile base covered with 4 inches (minimum) of coarse wood mulch or chips. The area shall be replenished as necessary to maintain a 4-inch (minimum) depth.

v. No material shall be stored or piled within a radius of 2 feet for each 1-inch DBH (minimum) of the designated tree root zone or as directed by the Project Manager. No gasoline, fuel oil, harmful chemicals, etc., or other deleterious materials shall be stored, spilled or deposited on the ground with in this limit.
vi. There shall be no vehicular traffic or parking permitted under the drip line / canopy of any tree to be retained or protected within the construction site unless approved tree root protection measures have been installed.
vii. Foot traffic shall be kept to a minimum under the drip line / canopy. If temporary foot traffic must be directed over the root zone of trees to be retained or protected, a pathway shall be installed using an approved geotextile base covered with 3 inches (minimum) or mulch or wood chips. The pathway material shall be replenished as necessary to maintain a 3-inch (minimum) depth.
viii. Installation of curbs and sidewalks shall be completed in a manner least damaging to trees and tree root systems. An approved geotextile fabric shall be considered a viable alternative to the specified sub-base in sensitive root zones. When unique site conditions not addressed in the contract drawings result in the opportunity for an alternative solution or a potential modification to the plan, the Contractor may present a proposal to the UGA PM and UGA Urban Forester (for Athens-area projects).
ix. For an existing landscape with an irrigation system that requires protection, the Contractor shall either maintain operation of the irrigation system at all times or hand water at rate and schedule approved by the Project Manager.

C. Liability
i. The Contractor shall be held liable for any damage to protected trees. A dollar value shall be determined by following criteria contained in A Guide for Plant Appraisal (Council of Tree and Landscape Appraisal, Latest Edition).
ii. The Contractor shall be held liable for all remedial measures required to treat broken limbs, or damaged trees and roots, or for unauthorized removal of existing trees or plant material, etc. All tree surgery and remedial treatments will be accomplished by a certified arborist.
iii. Contractor will protect all trees, shrubs and grass in the Project site that will not be removed as part of the scope of work. Any damages to these live plants will be repaired or replaced by the Contractor at the Contractor's sole cost before final payment will be issued by the Owner.
iv. The actual damages are difficult to ascertain. Therefore, in addition to the above, the Contractor shall pay the Owner as liquidated damages and not as a penalty, $500 per day for each day that the Owner and/or Design Professional documents violation(s) of the requirements within this section. Such liquidated damages shall be paid to the Owner through a unilateral deductive change order to the Contractor's Contract.

01 58 00
UGA CAMPUS SIGNAGE STANDARDS

1. **GENERAL**
   A. Related sections:
      i. 00 00 09 – Room & Space Numbering
      ii. 10 14 00 – Signage
      iii. 26 56 00 – Exterior Lighting (for requirements regarding exterior signage.)
   B. The University of Georgia campus consists of a mosaic of buildings and open space within an intricate fabric of natural landscape. Its layout generally provides close and distant views that are free of unnecessary architectural obstacles such as signage that blight other campuses. The purpose of these guidelines is to provide a framework by which exterior signage is properly employed to provide clear information without cluttering the campus and detracting from its enjoyment. Protecting the campus from visual clutter protects the University's brand identity and renowned aesthetic character. Further, the framework contributes to a coherent and consistent wayfinding system across campus. Ultimately, the purpose of a sign is to provide information when needed and to fade into the background when not.
   C. Exterior signage shall be limited to campus gateway identification, building identification, and signage required by code and regulation. The *UGA Uniform Sign Program,* developed in 1967 by Professor Ron Arhholm of the Department of Art, provided the original specifications for campus exterior signs. LDSOA faculty and FMD have updated this document over the years, and the current specifications are incorporated into the Standards.
   D. All requests for exterior signage not conforming to the Standards or those exceptions listed below shall be brought to the Campus Environs Advisory Group (FacilitiesInquiries@uga.edu) for consideration.
   E. Donor or memorial related signage is addressed as an exception category with specific guidelines governing design and placement in a subsection below.
   F. Design and placement of campus educational signage, historical markers, etc. shall be reviewed on a case by case basis by the Campus Environs Review Committee.
   G. Consistent with Section I-C-iii of the campus solicitation policy, there shall be no exterior facing commercial signage. Though allowed inside certain buildings associated with a service provision, commercial signage shall not be visible from the exterior of the building. This includes commercial signage associated with vending, except in those locations reviewed and approved by the Campus Environs Committee. At athletic fields, approved signage may be allowed on the interior facing field walls or fences. However, no commercial signage shall be fastened to any exterior facing wall or the exterior of any stadium, court, or athletic facility.
   H. Exterior electronic message centers are not permitted as they detract from the campus aesthetic.
   I. New signage not in conformance with UGA sign regulations shall be removed at the cost of the party responsible for erecting the sign. This includes temporary signage that has not been removed on schedule and where temporary signage has caused damage to landscape or wall surfaces.

J. Existing exterior signage types not identified in this document should be reviewed by the Campus Environs Review Committee. A decision should be made for either immediate removal, removal coinciding with scheduled maintenance or future improvements, or for an exception to be granted.

K. Campus Environs Review Committee may also approve and set standards for additional signage types in the future.

2. **TYPICAL EXTERIOR SIGNAGE**

A. Campus Gateway Signage and University of Georgia Identification: In general, the landscape and architecture of UGA adequately identify campus edges; however, signs identifying the campus may be placed at prominent campus entryways and/or prominent corners created by intersections.

i. Campus identification signage (whether on Main Campus, Whitehall, Riverbend Research, or the Health Sciences Campus, or outlying properties) should consist of the free standing painted metal signs identified in section 2 below. Consistency with the graphic standards specified in the section regarding color, typography, and content is required.

ii. At various key entries or prominent corners, granite rubble walls with pin-mounted metal letters have been used. However, requests for these must be approved by the Campus Environs Review Committee.

iii. Requests for additional or alternate identification sign types must be presented to the Campus Environs Review Committee for review and determination.

iv. "University of Georgia" identification is to be employed only on signs for buildings or sites located on the periphery of or away from the main campuses.

B. Building / Property Name Identification: Campus buildings are identified by either free-standing or attached signage.

i. Free-Standing Metal Sign: Buildings, building complexes, and campus properties shall be identified as specified below:

a. Short form of the building or property name (generally the vernacular). This is a normally two to three word name (five word maximum).

b. Name may occupy no more than two (2) lines of text.

c. The building number as assigned and noted on campus maps

d. Subtext Listings

1) Subtext listings may appear on a building I.D. sign only if the main / administrative office of that entity is located within the building. For example, the name of a college may only be placed on signage for the building in which the dean's office is located.

2) Subtext listings may not occupy more than two lines of text. Length of text lines is limited to approximately 40 letters and spaces.

3) The order of hierarchy is as follows:

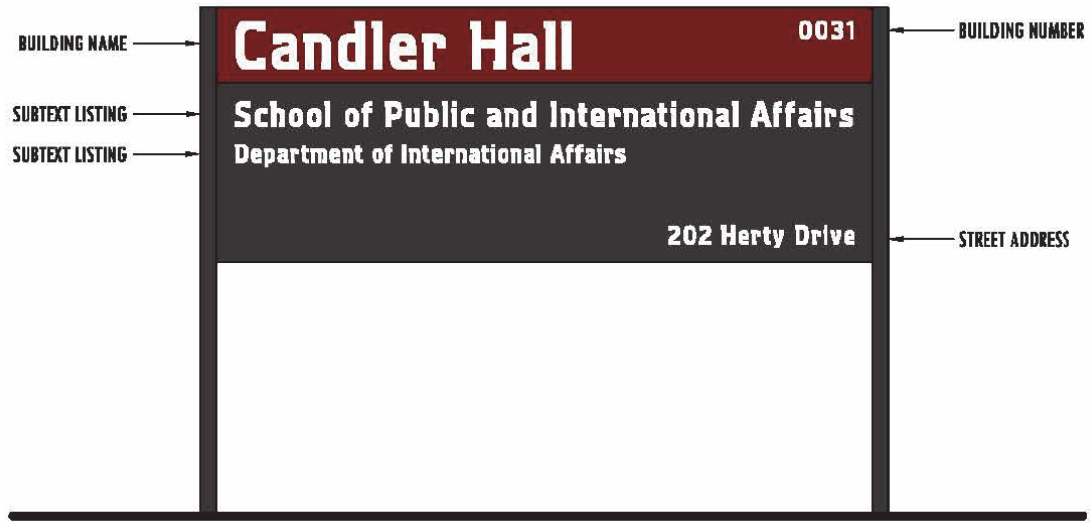
i) Name of a presidential or vice presidential office, college, school (headed by a dean), or division.

ii) Name of an academic or administrative department, or a school existing as a unit within a college.

iii) Street address of the building for emergency response purposes (addresses are only to be included on signed located adjacent to the streets identified).

4) There is no limit to the number of lines of subtext utilized to meet the above criteria.

e. There is no limit to the number of lines of subtext utilized to meet the above criteria.



Example 1

Example 2

f. Additional information will not be included on signs without the approval of the Associate Vice President of FMD. Generally, additional information will only be approved if the total lines of subtext including items 1-3 above are no more than six lines total. Additional information which may be approved for inclusion on signs is as follows:

1) Names of academic centers and institutes if they meet the same / similar criteria as service / transaction centers listed below.

2) Names of auditoriums if the facility is regularly used for public presentations, lectures, etc.
3) Service / transaction points open and available to the public (library, clinic, gallery, computing center, etc.).
4) Name of an academic program office if the program generates a significant number of site visits by students or the public, and if the program offices and operations are centralized within the facility. (Note - An academic program office may be removed from a sign if another entity that ranks higher on the scale takes up occupancy in the facility.)

g. The following information may not be included on exterior building I.D. signs:
1) Non-academic program offices
2) Academic offices that do not meet the criteria of f.4
3) Section Offices
4) Centers and institutes that do not have a public interface component
5) Personal names of building occupants

h. FMD's Sign Shop applies detailed font type, size, and spacing guidelines in these production of uniform identification signs.

ii. Attached to Buildings: Buildings shall be identified by lettering in all capitals using either carved-in-stone or projected, pin-mounted letters. In general, signs should be located above major building entrances. However, depending on sight-lines and building configuration, sign location may be located at the discretion of OUA.

a. Letters carved in stone (or sand blasted into precast or stone) shall be Legacy Font. Size of font and use of serif or sans-serif shall be determined by OUA.
b. Projected, pin mounted letters shall be ½-inch thick cast bronze, black non-ferrous metal, or brushed aluminum and shall be Helvetica Medium font. Typically, sizes shall range from 4 inches to 8 inches at the discretion of OUA.
c. In rare instances, the metal identification sign described above as a free-standing sign may be mounted on a building, where site limitations preclude a free-standing sign, as on downtown streets.

C. Informational Signs and Parking Signs

i. Blue and black signs shall be used for signs which are more informational in nature, such as directional or parking information. These sign types shall be limited in use and provide for basic identification and wayfinding needs that are outside the context of building and complex identification. The UGA Grounds Department sign shop shall determine the placement and appearance of all informational and parking signs.

D. Regulation / Code Required Signs

i. Road signs, ADA signs, fire and life safety signs, and all other signs required by code or regulation shall be governed by the Reference Manual of Uniform Traffic Control Devices and any other applicable regulatory parameters.

E. Campus Directories / Location Maps
   i. Directories should be placed at logical locations throughout campus.
      a. Campus maps with "You Are Here" identification: Campus maps shall be placed at logical locations throughout campus. They should not be placed where they obstruct entryway views, historic views, or prominent views of campus. These signs should be constructed to fade into the campus landscape. Preferably these should be constructed so that they can be updated regularly and cost effectively.

3. **TYPICAL INTERIOR SIGNAGE**
   A. Interior wayfinding signage (room identification and directional signage) is provided and maintained by FMD.
   B. Room Identification Signage and Code-Required Signage
      i. In order to assure cost effective building maintenance and replacement, materials should be limited to the Rowmark ADA signage available for fabrication through UGA FMD in a variety of contrasting background / lettering options.
         a. Within Resident Instruction (RI) buildings, the Provost must approve any requested room identification signage that requires third party fabrication as a result of the design or material preferences of the user group.
         b. Within non-RI buildings, deviations that require third party fabrication are discouraged and will be the responsibility of the user to fund maintenance and replacement.

4. **DONOR AND/OR MEMORIAL SIGNAGE**
   A. Donor and memorial signage opportunities shall be identified in accordance with relevant naming / memorial policies and designed, ordered, and installed only after approval procedures have been completed. Development officers should work with OUA when determining appropriate size and design of recognition signage.
   B. Use of Logos
      i. Use of the official UGA logo in donor recognition graphics should conform to the style guide available through the UGA Division of Marking and Communication Office at http://styleguide.uga.edu/index.php?/entries/logo_guide_and_downloads
      ii. No commercial or corporate logos or other branding imagery is permitted in association with campus donor recognition graphics. In special circumstances, use of logos on interior recognition plaques may be approved by the Office of the President.
   C. Building Naming
      i. Exterior (attached) building sign
         a. Location – Generally the exterior building naming signage should be located above the most prominent formal entry and limited to this singular location.
         b. Content – Use only BOR-approved naming language for exterior building signage.
         c. Material – Engraved or cast lettering as well as pin-mounted dimensional letters are both appropriate materials and methods for

providing building naming signage. Dimensional naming letters across campus are commonly black non-ferrous metal, anodized bronze, or brushed aluminum. Brushed aluminum should be limited to pin-mounted dimensional letters set against a field of brick, where legibility of darker letters can be obscured.

d. Typeface should adhere to precinct precedents when nearby.
e. Depending on the size of the overall facility, the letter heights may vary. Lettering is typically 6 inches tall with ½-inch (to be consistent with above notes) extrusion. Requests for taller letter heights shall be submitted to OUA for approval.
f. Letters on a field of brick shall be carefully placed to work in concert with the horizontal mortar joints to make the letters as legible as possible.

ii. Exterior (free-standing) grounds sign
   a. No deviation from Section III-2-A above is permitted to ensure a consistent and coherent campus wayfinding system.

iii. Dedication plaque
   a. Coordinated through the President's Office, up to two dedication plaques may be associated with a building project, depending upon funding source.
      1) Typically there is one dedication plaque and the content and layout shall be determined in conformance with BOR standards. Refer to BOR Policy Manual 09.05.05 Plaques: http: / / www.usg.edu / policymanual / section9 / C528
      2) When there is a rededication of a building due to the reuse of a name, there may be a second plaque.
      3) Material – Cast bronze is the generally accepted material for building dedication plaques, but at the discretion of OUA, material choices may be altered to fit building character.
      4) Location – Dedication plaques should be located in the primary interior entry or lobby.

iv. Other
   a. Any other donor recognition graphics associated with the building namesake should conform to the standards outlined elsewhere within this document and reviewed on a case-by-case basis. Placement within entries or central circulation spaces should be prioritized.
      1) Size - The overall size of such graphics should not be larger than the BOR dedication plaques (typically 17 inches by 30 inches).
      2) Material – Acrylic, glass, bronze, and aluminum are all common materials employed in donor plaque design. Consistency in material and layout should be a priority throughout a campus building.
      3) Content – Content should be limited to donor(s) and/or honoree(s) names, degrees from UGA, and association with the unit or university community leading to gift. Personalized

imagery is discouraged but will reviewed on a case-by-case basis.

4) Location – Should be located in primary interior entry or lobby and coordinated with other building dedication plaques.

D. Interior Space Naming Recognition

i. Room Identification – Functional room identification signage is an appropriate location to co-locate recognition of interior space naming, though the character limitations of these signs may require abridged naming language.

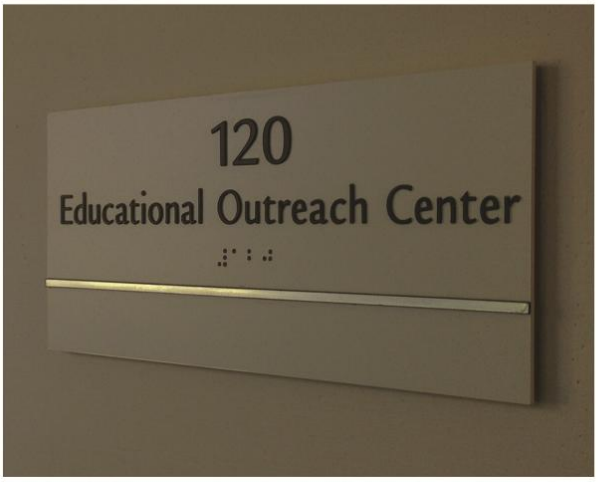
a. Typeface – Because of the primary wayfinding function of these signs, typefaces for space type and room numbers should be limited to sans-serif, ADA compliant options (typically Helvetica or Merriweather Regular) with 5/8-inch lettering. Legacy san-serif is an acceptable alternative. Alternative typefaces should be approved by OUA. *Revised June 2026*

b. Materials – In order to assure cost effective building maintenance and replacement, materials should be limited to the Rowmark ADA signage available for fabrication through UGA FMD in a variety of contrasting background / lettering options. Within Resident Instruction (RI) buildings, the Provost must approve any requested room identification signage that requires third party fabrication as a result of the design or material preferences of the user group. Within non-RI buildings, deviations that require third party fabrication are discouraged and will be the responsibility of the user to fund maintenance and replacement.

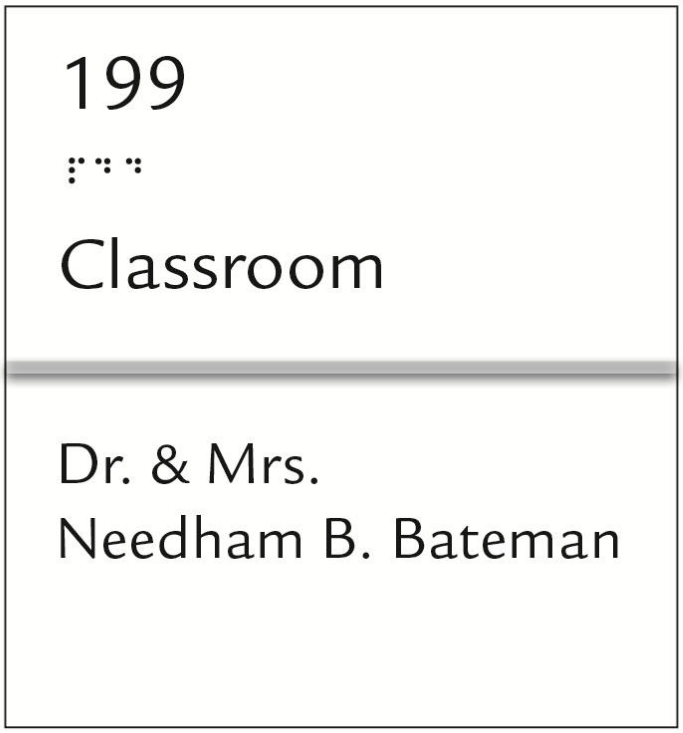
c. Examples from across campus are included below:

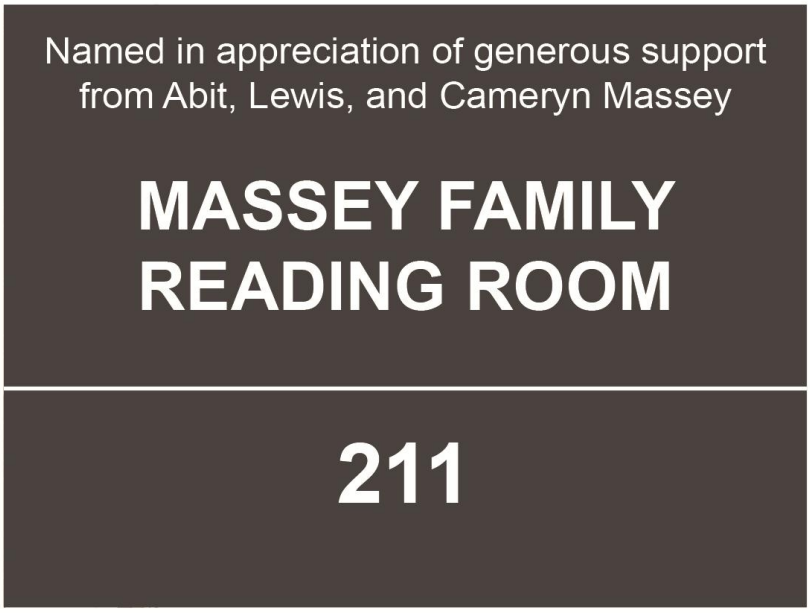
E. Exterior Space Naming Recognition

i. Exterior named spaces shall not have any accompanying exterior or interior donor recognition plaque. *Revised June 2026*



Consistency between room id with donor recognition and other room id/wayfinding is preferred.





ii. Applied Lettering – Interior space naming graphics may be achieved with applied lettering.
   a. Material
      1) Paint / Sandblast / Vinyl – Stenciled characters may be painted on walls, acid-etched or sandblasted onto glass of an entry door, or applied onto either surface with vinyl adhesive lettering. The latter is often most cost effective.
      2) Dimensional Lettering – these applied letters may be flush or pin-mounted to walls. Painted acrylic or extruded metal letters are common. Black, gray, brushed aluminum and anodized bronze are common finishes.

b. Size – Size varies depending upon location but should typically be limited between 1-inch to 3-inch lettering. Vast interior spaces such as auditoriums may merit larger lettering up to 4 inches.
c. Location – Generally, applied lettering should be provided in one location, interior to the named space, with the exception of lettering applied within an entry door lite. In certain circumstances, applied lettering outside the named space may be acceptable, but every effort should be made to reduce the visual clutter of multiple signs types and locations along public corridors and other circulation areas.
d. Content - This method should limit content to the approved naming only.

iii. Typefaces
a. For new construction a consistent use of typeface among donor-recognition graphics shall be utilized throughout a campus building. For renovations and additions, the existing typefaces shall be considered and an appropriate typeface selected that best blends the new and renovated areas.
b. There are four approved typefaces and any deviations shall be submitted to OUA for approval prior to fabrication:
1) Galliard roman, italic and bold are commonly employed font variants. Application of this typeface in donor recognition graphics is encouraged.
2) Designed in 1992 by Lamar Dodd School of Art professor Ron Arnholm, ITC Legacy (32 variants in serif and sans-serif fonts) is encouraged.
3) Times New Roman is also commonly employed across campus and is acceptable if more appropriate than Galliard or ITC Legacy.
4) Helvetica or ITC Legacy Sans-Serif, ADA-compliant typefaces, should be used when donor naming is combined with room identification signage.

iv. Logos
a. Use of the official UGA logo in donor recognition graphics should conform to the styleguide available through the UGA Division of Marketing and Communications Office at http: / / styleguide.uga.edu / index.php? / entries / logo_guide_and_downloads
b. No commercial or corporate logos or other branding imagery is permitted in association with campus donor recognition graphics. Requests for variances from this rule in building interior spaces shall be made to the Office of the President of the University through coordination with the Project Manager. Requests for variances from this rule in exterior settings should be made first to the President of the University and, if approved, to the Board of Regents.

v. Donor Information Plaques
   a. Material – Acrylic, glass, bronze, and aluminum are all common materials employed in donor plaque design. Consistency in material and layout should be a priority throughout a campus building.
   b. Content – Content should be limited to donor(s) and/or honoree(s) names, degrees from UGA, and association with the unit or university community leading to gift. No personalized imagery should be included.
   c. Location – Interior to named space only. With the exception of the building namesake, donor information plaques should not be placed in public corridors or other circulation areas.
   d. Size – Recommended maximum size is 12 inches x 18 inches, to be deferential to building naming plaques which are typically 17 inches x 30 inches.

vi. Collective Donor Recognition
   a. Panels – recognition of group philanthropic efforts should maintain consistency to greatest extent feasible with the broader recognition graphics program. Digital displays can provide a flexible medium for adding or changing content over time. These collective recognition displays may be located along central corridors and common spaces.

F. Exterior Space Naming Recognition

i. Named exterior spaces – engraved cast stone or granite set flush within the hardscape of a named plaza or other exterior space is the preferred campus method for donor recognition graphics within the campus landscape.

ii. Collective Donor Recognition
   a. Pavers – “brick campaigns” are discouraged as a result of the typically low quality and inconsistent paver material associated with these installations. Preferred alternatives may include engraved flagstone, bluestone, or granite pavers.
   b. Consider using these engraved pavers within discrete, un-mortared fields within a plaza or as plaza or walkway borders. Ongoing campaigns that require additions after the initial installation require careful planning and coordination to maintain a seamless appearance over time.

iii. Other Memorial / Donor Signage within the Campus Environs shall conform to either the Arboretum or Memorial Bench policies. All other request types shall be reviewed on a case-by-case basis by the Campus Environs Advisory Group.
   a. Arboretum – For gifts of a minimum value identified in the Arboretum Policy, an engraved granite paver will be added to the DW Brooks Arboretum Memorial.
   b. Benches – For gifts of a minimum value identified in the Memorial or Honorary Bench policy, an engraved granite paver will be set flush within the standard brick paver pad or a bronze plaque (3 inches x 5 inches) will be set flush within concrete pads / sidewalks.

5. **SPECIAL EVENTS**
   A. Temporary Signs
      i. Temporary signage is defined as signage that is erected for a period of no more than 30 days and must conform to temporary sign design standards with review and approval for design and placement by UGA Marketing and Communications in accordance with the Outdoor Temporary Signage policy. Requests for temporary signage should be directed to UGA Marketing and Communications at temporarysignage@uga.edu or otherwise adhere to the Temporary Banner signage policy below.
      ii. Banners - The UGA Division of Marketing and Communications worked with OUA, FMD and others to develop a policies and procedures guide for temporary campus banners, accessible via the following links:
      Pole Banners, https://policy.uga.edu/policies/#/programs/Hyzg_F876 .
      iii. No other temporary signage shall be attached to a building or posted within the campus landscape. Only temporary signs (as managed by the Office of Special Events, Facilities Management Department, and/or the Division of Marketing and Communications) are permitted.
   B. Pin-up Student Message Boards
      i. Student message boards are a part of college/community life that persists despite the emergence of newer forms of social media. However, considering that these sign types present certain maintenance requirements, message boards should be limited to current locations, and in certain locations, reviewed for phasing out.
      ii. It is recommended that most buildings have an interior message board located in common location (not in direct line of sight when entering building), or by the restrooms, water fountains, or elevators. Size of pin-up area should increase with public / social function of building (i.e. dining hall to have larger pin-up board than instructional facility).
         a. Exterior pin-up boards should be limited to current locations.

01 58 13
TEMPORARY PROJECT SIGNAGE

1. **GENERAL**
   A. The Contractor shall install an official Project Construction Sign at a location agreed upon with the Owner. The sign shall be installed prior to beginning construction on site. The cost shall be included in the Contractor Overhead Cost or Base Bid. The sign shall be a 4'x8' sheet of plywood with black lettering and white background and adhere to the template provided at the link below. The Contractor shall provide a proof to the Owner for review and approval prior to fabrication.
   B. OUA has a standard template for construction signage. Contractors shall work with their designated project manager to fill the template and develop draft signage for approval prior to printing and fabrication. *Revised June 2026*
      i. Note: in the case of projects administered by FMD, the bottom line of the Project Construction Sign shall state: "Administered by the Facilities Management Division" as directed by Project Manager.
      ii. For Georgia State Financing and Investment Commission (GSFIC) funded projects, include among the listed parties.
   C. The Contractor may provide and install signage as required to direct deliveries. No additional Contractor, Subcontractor, or Supplier signs may be installed on site without prior authorization. It is the intent of the Owner to not allow signs that advertise for the Contractor, Design Professional, Subcontractor, or Supplier.

01 60 00
PRODUCT REQUIREMENTS

1. **GENERAL**
   A. Under no circumstances shall any asbestos, formaldehyde, or lead containing material be installed under this Contract. New materials shall not contain asbestos, formaldehyde, or lead in any form or quantity (i.e. zero asbestos, formaldehyde, or lead). Manufacturers shall submit certification to the Owner of zero-asbestos, formaldehyde, or lead for all materials used on this Project prior to request for final payment.

01 65 00
PRODUCT DELIVERY REQUIREMENTS

1. **GENERAL**
   A. The Owner can NOT accept delivery of any materials. Contractor shall unload his/her equipment and materials and move them to the site of the work.

01 74 19
CONSTRUCTION WASTE MANAGEMENT & DISPOSAL

1. **GENERAL**
   A. Related sections:
      i. 01 77 00 – Project Closeout
      ii. 01 81 00 – Facility Performance Requirements
   B. Definitions:
      i. Construction Waste: Materials and other solid waste resulting from demolition, construction, remodeling, renovation, or repair operations.
      ii. Disposal: Removal of Construction Waste
      iii. Diversion: Alternatives to landfill, including Recycle, Reuse, and Salvage
      iv. Diversion Rate: Total diverted material divided by total construction waste, multiplied by one hundred.
      v. Recycle: Recovery of construction waste for subsequent processing in preparation for reuse.
      vi. Salvage: Recovery of construction waste and subsequent reuse in another facility.
      vii. Reuse: Recovery of demolition or construction waste and subsequent incorporation into the work.
   C. The University of Georgia has implemented recycling and waste management policies for all waste materials removed from its campus as a result of construction and demolition activity. The University of Georgia aims to achieve a minimum end-of-Project Diversion rate of at least sixty-five percent (65%) by weight of total nonhazardous solid waste generated by the work. At the Project Manager's discretion, small Projects may be exempt from this Diversion goal. Confirm exemption with Project Manager prior to or during Pre-Construction meeting. The materials that should be diverted include the following, as applicable:
      i. Asphalt
      ii. Concrete, concrete block, concrete masonry units (CMU), slump stone (decorative concrete block), and rocks
      iii. Brick
      iv. Paper, including bond, newsprint, cardboard, mixed paper, packing materials, and packaging (including food and beverage containers)
      v. Glass
      vi. Plastics
      vii. Green materials (i.e. tree trimmings and land clearing debris)
      viii. Metals (ferrous and non-ferrous) including, but not limited to, stud trim, ductwork, piping, reinforcing steel (rebar), roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
      ix. Wood (non-pressure/chemically treated wood) including, clean dimensional wood, pallet wood, plywood, oriented strand board (OSB), and particle board.

D. The Contractor should make an attempt to recycle or provide for re-use the following additional materials to the extent practical:
   i. Cement Fiber Products including shingles, panels, and siding
   ii. Paint
   iii. Carpet
   iv. Gypsum Wallboard
   v. Ceiling Tiles
   vi. Porcelain Plumbing Fixtures
   vii. Vinyl Composition Tile
E. The Contractor is required to account for all waste materials removed from the project, and to recycle, salvage, or reuse, to the maximum extent practical. If there is a cost premium associated with recycling (i.e., if a comingled dumpster must be used due to insufficient space on site for separate dumpsters), the Contractor should identify this cost premium to allow the Project Manager to assist making a decision regarding the best course of action to take for each project. Contractor should consult with Project Manager on items to be salvaged and/or reused with the Project. Care should be taken to preserve the existing condition of all materials designated for salvage or reuse. If the Contractor believes that recycling, salvage, or reuse of any of these materials is impractical, the Contractor should inform the Project Manager before commencement of construction and keep a record all materials then sent to a landfill. The Project Manager can provide assistance to the Contractor in identifying markets for diversion upon request. A partial list of waste diversion vendors is included at the end of this section.
F. The Contractor will be required to supply to the Project Manager during the Pre-Construction Meeting a Project Waste Management Plan which documents procedures to recycle, salvage, or reuse the materials listed above. The Pre-Construction meeting will also address training and communications, recordkeeping, and reporting requirements to ensure that all waste materials are accounted for properly.
G. During construction, the Contractor shall maintain records of each type of material removed from the job site (including materials that are not recycled) and weights of materials removed. Total amounts of waste material that leaves the site must be documented and reported to the Project Manager in the Closeout Waste Management Report. Receipts and tickets to be provided to Project Manager upon request.
H. At Material Completion, the Contractor must submit a Closeout Waste Management Report which includes separation, hauling, and recycling procedures. The Report shall be submitted to the Project Manager with the total quantities of each waste material and their diversion methods (reuse, salvage, recycle, or landfill) so that it provides documentation in a single source of waste management performance on the Project.
I. UGA retains the right to inspect, and subsequently approve or disapprove any and all recycling end markets, reuse or salvage outlets, and/or waste disposal facilities that are involved in the receipt of recyclables and/or waste materials generated from the project. Disapproval of such a market or outlet may be based on past or current violations of federal or state environmental, health, or safety laws, improper disposal activities, risk or liability exposure, excessive distance from the job site, or any other reason deemed sufficient by UGA.

J. The Contractor shall include administrative and recordkeeping costs associated with Construction and Waste Management in the Contractor Overhead Cost and Base Bid. All other associated costs shall be included in the appropriate line item cost of the General Conditions for the Guaranteed Maximum Price.

2. **PRODUCTS** – Not used
3. **EXECUTION**
   A. The Contractor shall complete and submit the reporting forms outlined in above sections. The Project Waste Management Plan and Closeout Waste Management Report templates are located at the end of this section. These reports are intended to assist UGA with tracking completion of sustainable design and facility performance requirements. Each project is required to address all aspects of the Standards whether included in this report or not.

01 74 19
CONSTRUCTION WASTE MANAGEMENT & DISPOSAL
PROJECT WASTE MANAGEMENT PLAN

WASTE AND RECYCLING		
A Project Waste Management Plan documenting procedures to recycle, salvage, or reuse materials was submitted by the Contractor and is dated:		
Target Project Diversion Rate:		
Construction Manager Party Responsible for Waste Report Tracking:		
MATERIALS TARGETED FOR DIVERSION		
Material:	Diversion Method:	Procedure:
Contractor's Waste Management Vendor(s):		
Project Specific Challenges to Waste Diversion:		

01 74 19
CONSTRUCTION WASTE MANAGEMENT & DISPOSAL
CLOSEOUT WASTE MANAGEMENT REPORT

WASTE AND RECYCLING			
A Project Waste Management Plan documenting procedures to recycle, salvage, or reuse materials was submitted by the Contractor and is dated:			
Total Waste Sent to Landfill:			
Total Project Diversion Rate:			
MATERIAL DIVERSION			
Material:	Diversion Method:	Procedure:	Amount Diverted (Tons):
Contractor's Waste Management Vendor(s):			
Project Specific Challenges to Waste Diversion:			

01 74 19
CONSTRUCTION WASTE MANAGEMENT & DISPOSAL
RESOURCES

B. The following is an inexhaustive list of local entities that may be helpful in Diversion efforts:

i. **81 Inert Recycling**
770-466-3676
www.81inertrecycling.com
Materials Accepted: Asphalt, Concrete, Most Hardscape Waste, Leaf & Limb Debris, Dirt

ii. **ACC CHaRM**
706-613-3501
https://www.accgov.com/5894/Hard-to-Recycle-Materials-CHaRM
Materials Accepted: Appliances, Tools, Batteries, Chemicals, Paint Cans, Window & Door Glass, Light Bulbs/Tubes, Pallets, Scrap Metal, Porcelain Plumbing Fixtures

iii. **ACC Commercial Compost Facility**
706-613-3508
https://accgov.com/4457/Commercial-Composting
Materials Accepted: Leaf & Limb Debris, Food Scraps, BPI Certified Packaging

iv. **ACC Recovered Materials Processing Facility**
706-613-3501
https://accgov.com/6281/Recycling-Facility
Materials Accepted: Paper, Cartons, & Flattened Cardboard; Metal Cans & Containers; Plastic Bottles & Containers; Glass Bottles & Jars (single stream or separated)

v. **Armstrong Ceiling Recycle**
877-276-7876
https://www.armstrongceilings.com/commercial/en/performance/sustainable-building-design/ceiling-recycling-program.html
Materials Accepted: Ceiling Tile

vi. **CHaRM Atlanta**
404-600-6386
https://livethrive.org/charm
Materials Accepted: https://livethrive.org/accepted-items-list/

vii. **CMC Recycling**
706-357-4770
https://www.cmcrecycling.com/
Materials Accepted: Scrap Metal (No Drums)

viii. **Georgia Recycling**
706-548-2211
https://garecyclinginc.com
Materials Accepted: All Metal including 55 Gal Drums / Refrigerant Drums

ix. **Lighting Resources LLC**
352-509-3001
www.lightingresourcesinc.com/recycling-services/
Materials Accepted: Lamps, Batteries, Mercury Devices, E-Waste, Ballast, 55 Gal. Drums

x. **Metro Green Recycling**
770-326-6000
https://www.mgrecycle.com/locations/
Materials Accepted: Concrete, Metal, Roofing Shingles, Shot Rock, Sheet Rock, Carpet, Plastic, Wood, Cardboard, Brick, Drywall, Acoustical Ceiling Tile

xi. **PalletWorks LLC**
678-726-7671
https://palletworks.us/
Materials Accepted: Pallets, Construction Wood (can de-nail for a cost)

xii. **Pratt Recycling**
404-353-6025
https://recycle.prattindustries.com/commerical
Materials Accepted: Bulk Paper, Mixed Paper, Newspaper, Magazines & Catalogs, Cardboard, Books, Single Stream Recycling

xiii. **Rolloff Systems**
770-725-7655
https://rolloffsystems.com/
Recycling & Landfill Services

xiv. **Waste Eliminator**
770-979-2688
https://www.wasteeliminator.com/
Materials Accepted: Wood, Metal including nails, Concrete, Asphalt, Masonry, Vinyl Composition Tile

xv. **WastePro**
(706) 227-3222
https://www.wasteprousa.com/office/athens/
Recycling & Landfill Services

xvi. **UGA Art Studio - Mickey Boyd**
706-542-1511
Materials Accepted: Wood (larger than 2’ x 2’ with a max 3/8” thickness) and Cardboard

01 75 00
STARTING & ADJUSTING

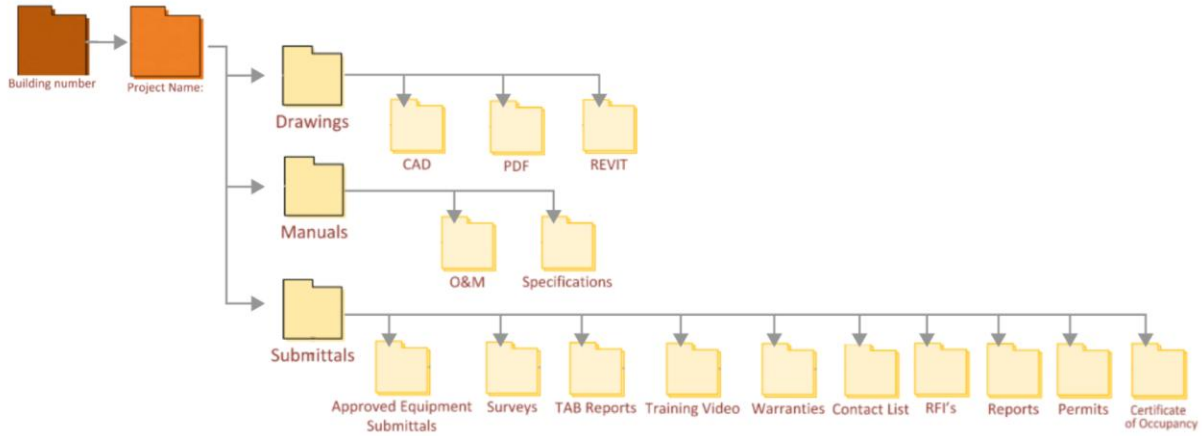
1. **GENERAL**
   A. Related sections:
      i. 01 77 00 – Project Closeout
      ii. 11 53 13 – Laboratory Fume Hoods
      iii. 11 82 26 – Facility Waste Compactors
      iv. 14 20 00 – Elevators
      v. 21 00 00 – General Fire Suppression Requirements
      vi. 23 05 14 – Variable Frequency Drive
      vii. 23 09 23 – Building Automation & Temperature Control Systems (BAS)
      viii. 23 20 00 – HVAC Piping & Pumps
      ix. 23 21 23 – Hydronic Pumps
      x. 23 22 16 – Steam & Condensate Heating Piping Specialties
      xi. 23 25 00 – HVAC Water Treatment
      xii. 23 64 16.13 – Air-Cooled Chillers
      xiii. 23 64.16.16 – Water-Cooled Chillers
      xiv. 23 65 00 – Cooling Towers
      xv. 23 73 00 – Indoor Central –Station Air-Handling Units
      xvi. 23 81 29 – Variable Refrigerant Flow (VRF) HVAC Systems
      xvii. 26 09 43.19 – Addressable Fixture Lighting Control
      xviii. 26 24 19 – Motor – Control Centers
      xix. 26 32 00 – Packaged Generator Assemblies
      xx. 28 13 00 – Access Control
      xxi. 28 31 00 – Fire Detection & Alarm
   B. All startup certification documentation required in this section shall also be provided in the closeout submittal.
   C. The closeout manual shall include factory or authorized agent completed and signed start-up certification documentation.
   D. Chillers, condensing units, cooling towers, boilers, pumps, Variable Frequency/Speed Drive(VFD, VSD), Motor Controllers , AHUs, humidifiers, heat exchangers and water heaters, PRVs, controllers and controlled elements, meters, pre- insulated underground piping, etc., shall be field inspected and tested by the manufacturer or a factory trained authorized representative for installation in compliance with the manufacturer's installation instructions and recommendations prior to start-up. The manufacturer or a factory trained authorized representative shall perform, or be present at, the start-up. Start-up documentation certifying proper installation and start-up shall be promptly forwarded to the Design Professional and Project Manager after successful start-up.
   E. Condenser, chilled water, and heating hot water systems shall not be started until cleaning, flushing, and pre-treatment has been done to the satisfaction of the water treatment contractor.
   F. Heating hot water systems shall be cycled through heat up and cool down and checked for leaks prior to handover. Inspection for leaks shall be performed by the TAB agency at the seasonal TAB.

G. Base mounted pumps shall be properly grouted and aligned by, or to the written approval, of a factory certified representative. Contractor shall submit written certification to this effect.

01 77 00
PROJECT CLOSEOUT

1. **GENERAL**
   A. Related sections:
      i. 00 00 08 – Design Professional Documentation Requirements & Deliverables
      ii. 01 33 00 – Submittal Procedures
      iii. 01 74 19 – Construction Waste Management & Disposal
      iv. 01 75 00 – Starting and Adjusting
      v. 09 00 00 – General Finishes Requirements
   B. At the end of this section is the sample Contractor & Project Manager Project Closeout Checklist to be used as a reference for closing out the Project.
   C. Closeout Meeting: The Contractor shall coordinate a Project Closeout Meeting with the Project Manager.
   D. Operations and Maintenance Training:
      i. The Contractor shall coordinate with the Project Manager to schedule training of facility system.
      ii. The Contractor shall submit O&M manuals for review simultaneously to the PM and to the Design Professional at least two weeks prior to O&M training dates. See below for more information regarding items in O&M manuals.
      iii. There shall be at least a two week notice prior to the established training date(s).
      iv. The Contractor shall prepare an agenda with times allocated for each training session.
      v. All training sessions shall be videotaped by a third-party company, unless directed otherwise by the Project Manager.
   E. Closeout Submittals Format Requirements:
      i. Closeout submittals shall follow the file naming and structure detailed throughout this section. A reference UGA standard closeout file template .zip file shall be provided by the project manager for use in formatting closeout submittal files. *Revised June 2026*
      ii. Both the hard copies and electronic copies shall be organized using the Construction Specifications Institute (CSI) numbering system utilized in the Project Manual. If hard copies are to be provided, the documentation shall be organized with labeled tabs and consolidated into one three ring binder, to the extent possible. If there are multiple binders, the volumes shall be labeled.
      iii. Electronic Deliverables:
         a. Electronic file names shall be no longer than 15 characters using only Microsoft acceptable file names. Combined file structure naming shall be no longer than 200 characters and consideration should be given to truncated file names within folders (for example: only including the sheet number if a sheet is located within a project subfolder that is specific to a particular drawing set). Files shall be delivered by flash drive, file download, or other acceptable deliverable.

b. Folder structure and naming: closeout files shall be provided according to the following folders and subfolders (see below graphic for overall folder hierarchy):



1) UGA Building Number:
    i. Format: ####
    ii. Example: 1234
2) Project Name (subfolder to UGA Building Number folder):
    i. Format: 4 digit year-Abbreviated Project Name-Project number
        1. Year associated with material completion
        2. Project number shall be either the OUA or FMD project number.
    ii. Example: 2025-Classroom Renov-FMD Proj 123456
3) Drawings (subfolder to Project Name folder):
    i. Format: simply labeled as "Drawings"
    ii. Subfolders and contents:
        1. PDFs:
            a. Complete set PDF
            b. Single, compiled PDF for each discipline
        2. CAD: Individual files labeled by sheet number
        3. Revit: provided by floor or as a complete set
4) Manuals (subfolder to Project Name folder):
    i. Format: simply labelled as "Manuals"
    ii. Subfolders and contents:
        1. O&M Manuals: individual files for each manual
            a. Each manual labeled: Section-Abbreviated Name
            b. Example: 232113-CHW Pipe Prod Data
        2. Specifications:
            a. Complete set PDF
            b. Single, compiled PDF for each Division
5) Submittals (subfolder to Project Name folder):
    i. Subfolders: See above graphic for list of subfolders.

ii. Example: An example file path is as follows:
1234\2025-Classroom Renovation-FMD Project 123456\Closeouts\Submittals\Permits

c. For projects that do not require BIM, AutoCAD files shall be version 2017 or later and be whole and complete with NO Xrefs to symbols or other drawings.
d. All drawings and specifications shall be submitted in AutoCAD (.dwg), Revit (.rvt) (depending on if BIM is utilized), Microsoft Word (.docx), and Adobe PDF (.pdf) formats. All PDF files shall be searchable.
e. Drawings and specifications shall each be submitted as one PDF binder set and as separate files for each drawing sheet/specification section.
f. Multivista shall be engaged to incorporate the simplified floor plans for each project into the campus maps under a 'client-use o&m manual' location. The contractor will be responsible for adding color-coded electronic push-pins onto these maps and linking all product data and o&m data to these pins that correspond to the equipment and shut-off valve locations. the o&m training videos will also be linked to these maps to be located in the general 'video' file. The color coding of the push-pins is as follows:
    1) Dark Blue - Chilled Water/Hot Water piping associated with HVAC system
    2) Light Blue - Domestic, potable water systems associated with the plumbing system
    3) Red - Electrical
    4) Yellow - Gas, Oil, Steam
    5) Green - Sewer
    6) Brown - Storm
    7) Telecom/Data - Orange
    8) Pink (South Arrow) - Fire Extinguishers
    9) Pink - Access Control/Security
    10) Purple - Irrigation and Fire Protection
    11) Grey - HVAC/Mechanical Systems (except Chilled water/hot water)
    12) Black - Elevator

F. Prior to submitting the final closeout documents, the Contractor shall forward one set of closeout submittals to the Design Professional and one to the Project Manager for simultaneous review. The comments generated by the Design Professional and Project Manager shall be collected by the Design Professional and consolidated prior to returning to the Contractor for any required revisions. Once all comments have been received, the Contractor shall address comments and distribute final sets according to the other requirements in this section.
G. The Contractor shall provide to the Project Manager the final closeout submittals including the following (see chart below for quantities and UGA distribution):
    i. Contractor Marked-up Construction Documents and Project Manual: For a Project not utilizing BIM, the Contractor shall provide the Project Manager and the Design Professional marked-up documents (per quantities and formats in

the tables later in this section) for both the drawings and specifications that incorporate all change orders, requests for information, and other as-built information per the Contract. For a Project that utilized BIM, the Design Professional and Contractor shall provide to the Project Manager marked-up documents (per quantities and formats in the tables later in this section) for both the drawings and specifications that incorporate all change orders, requests for information, and other as-built information as agreed upon in the BIM Execution Plan.

ii. Shop drawings and approved submittals

iii. Operations and Maintenance Manual which includes as a minimum the following items. In addition, include all other items that are Project specific that may be necessary for the facility to be properly maintained.
    a. All closeout items
    b. Contact List
    c. Simplified Site and Building Plan indicating Emergency Utility Shut off devices
    d. Finish Schedule including color samples and codes for each coating and color used on the project.
    e. Light Fixture Schedule
    f. Schedule of all mesh sizes for all strainers used.
    g. Test & Balance Report
    h. Warranties and Affidavits
    i. Contractor Training Videos

iv. Data / Telecommunications: In addition to above, break out separate sets of drawings, specifications, submittals, equipment list, specifically related to data / telecommunications as required in Section 27 00 00 General Communications Requirements.

v. Audio-Visual: In addition to above, break out separate sets of drawings, specifications, submittals, equipment list, specifically related to audio / visual as required in Section 27 41 00.01 Audio-Visual Control System.

vi. Site and Utility Plan: Within 30 days of Material Completion, the Contractor shall provide a layered site plan drawing per OUA Standards to indicate site and utility conditions as constructed. Updates to the Record Drawings to document any field modifications or an as-built survey of site utilities and other features is required to fulfill this closeout documentation. A Simplified Site Plan CAD template including the relevant site features as layers can be downloaded here: https://www.architects.uga.edu/standards .
    a. The submitted site plans shall be an AutoCAD (.dwg) file 2007 release or later. All survey information shall be included in the drawing as an External Reference and should be submitted as a separate (.dwg) file. All submitted drawings drawing shall be referenced to NAD 83 State plane coordinates system or to a suitable state plane coordinate system depending on its location. The electronic AutoCAD (.dwg) drawing file shall be submitted via e-mail to the Project Manager.

b. As-built site information shall also provide the size and layout of stormwater management appurtenances including, but not limited to, storm and footer drain laterals.

H. Final Quantities and Distribution: Contractor shall deliver all copies of the closeout submittals to the Project Manager. Refer to the following charts at the end of this section for 'Contractor Closeout Deliverables for OUA Project' and 'Contractor Closeout Deliverables for FMD Project' for quantities and types.

		CONTRACTOR CLOSEOUT DELIVERABLES FOR OUA PROJECT			
		Full Size Printed Drawing Set	**Half Size Printed Drawing Set**	**Digital Files**	**Other**
CONTRACTOR	**Contractor Marked-up Construction Documents**	0 - For OUA 0 - For FMD 0 - For End-User	0 - For OUA 0 - For FMD 0 - For End-User	1 - For OUA 1 - For FMD 1 - For End-User	
	Contractor Marked-up Project Manual & Specifications	0 - For OUA 0 - For FMD 0 - For End-User		1 - For OUA 1 - For FMD 1 - For End-User	
	Shop Submittals & Construction Submittals	0 - For OUA 0 - For FMD 0 - For End-User		1 - For OUA 1 - For FMD 1 - For End-User	
	Operations & Maintenance Manuals	0 - For OUA 0 - For FMD 0 - For End-User		1 - For OUA 1 - For FMD 1 - For End-User	
	Fire Marshal Approved Permit Drawings (Originals)	0 - For OUA 0 - For FMD 0 - For End-User			
	Test & Balance Report	0 - For OUA 0 - For FMD 0 - For End-User		1 - For OUA 1 - For FMD 1 - For End-User	
	Contractor Training Videos			1 - For OUA 1 - For FMD 1 - For End-User	
	For EITS (in addition to above) Refer to Section 27 00 00 - Communications	0 - For OUA 0 - For FMD 1 - For EITS		0 - For OUA 0 - For FMD 1 - For EITS	
	For CTL (in addition to above) Refer to Section 27 41 00.01 - Audio-Visual Control System	0 - For OUA 0 - For FMD 1 - For CTL		0 - For OUA 0 - For FMD 1 - For CTL	

		CONTRACTOR CLOSEOUT DELIVERABLES FOR FMD PROJECT			
		Full Size Printed Drawing Set	**Half Size Printed Drawing Set**	**Digital Files**	**Other**
CONTRACTOR	**Contractor Marked-up Construction Documents**	0 - For FMD 0 - For End-User		1- For FMD 1 - For End-User	
	Contractor Marked-up Project Manual & Specifications	0 - For FMD 0 - For End-User		1- For FMD 1 - For End-User	
	Shop Submittals & Construction Submittals	0 - For FMD 0 - For End-User		1- For FMD1 - For End-User	
	Operations & Maintenance Manuals	0 - For FMD 0 - For End-User		1- For FMD 1 - For End-User	
	Fire Marshal Approved Permit Drawings (Originals)	0 - For OUA 0 - For FMD 0 - For End-User			
	Test & Balance Report	0 - For FMD 0 - For End-User		1- For FMD 1 - For End-User	
	Contractor Training Videos			1- For FMD 1 - For End-User	
	For EITS (in addition to above) Refer to 27 00 00 - Communications	0 - For FMD 1 - For EITS		0 - For FMD 1 - For EITS	
	For CTL (in addition to above), Audio-Visual Control System Refer to Section 27 41 00.01 - Audio-Visual Control System	0 - For FMD 1 - For CTL		0 - For FMD 1 - For CTL	

		DESIGN PROFESSIONAL DELIVERABLES FOR OUA AND FMD PROJECTS			
		Full Size Printed Drawing Set	**Half Size Printed Drawing Set**	**Full Digital Files on USB, DVD, or Portable Hard Drive**	**Other**
Design Professional	**Design Professional Electronic Files Record Documents Construction Drawings and Project Manual**	0 - For OUA 0 - For FMD 0 - For End-User	0 - For OUA 0 - For FMD 0 - For End-User	1 - For OUA 1 - For FMD 1 - For End-User	

01 77 00.01
PROJECT PHOTOGRAPHY

1. **GENERAL**
    A. Related sections:
        i. 00 00 08 – Design Professional Documentation Requirements & Deliverables
        ii. 01 77 00 – Project Closeout
    B. Prior to any photography or filming for commercial and/or promotional purposes, Design Professionals, Contractors, and Consultants who wish to do so shall refer to and follow the regulations and procedures outlined at https://mc.uga.edu/policies/external-commercial-documentary-filming-photography-on-campus/.
    C. In some cases, the fees associated with the application may be waived; consult with UGA Project Manager.

01 78 46
EXTRA STOCK MATERIALS

1. **GENERAL**
    A. Related sections:
        i. 09 00 00 – General Finishes Requirements
    B. UGA does not require extra stock materials (attic stock) unless space is designated in the completed building.
    C. The DP shall coordinate any attic stock proposed by the DP with the UGA PM and only provide the items required by the UGA PM.
    D. For new and large facilities, the Contractor shall assist with locating attic stock material in the room designated by the UGA PM.
    E. Contractor shall label all attic stock with the same nomenclature as in Contract documents.
    F. All surplus materials stored by the Contractor (other than the attic stock specified by the UGA PM) shall be removed from UGA properties prior to the project closeout.

01 81 00
FACILITY PERFORMANCE REQUIREMENTS

1. **GENERAL**
   A. Related sections:
      i. 00 00 07 – Design Professional Design Process Requirements
      ii. 00 00 08 – Design Professional Documentation Requirements & Deliverables
      iii. 01 29 00 – Payment Procedures
      iv. 01 74 19 – Construction Waste Management & Disposal
      v. 12 46 33 – Interior Waste Receptacles
      vi. 12 93 23 – Trash, Litter, and Recycling Receptacles
      vii. 23 05 19 – Meters & Gages
   B. Introduction: The UGA requires and has been implementing efficient and sustainable designs for new construction and renovations for many years. Regardless of whether a project will utilize a third party green building certification system, the Design Professional shall present multiple scenarios with various levels of energy and water conservation options for the Project Manager's review.
      i. Not all Projects will have sufficient budgets to meet all of the requirements of this section 01 81 00 Facility Performance Requirements. It is the responsibility of the Design Professional and the Contractor (except for Design-Bid-Build delivery method) to provide cost estimates and detailed return on investment options during the Schematic Design and Design Development design phases for the Owner's evaluation. If at the end of the Design Development phase, as directed by the Project Manager, all of the requirements of this section will not be met, the Design Professional shall submit a variance for approval to document which aspects will not be met.
      ii. These Facility Performance Requirement evaluation and option services through Design Development shall be included in the Design Professional's Basic Services and the Contractor's Pre-Construction Overhead Costs and Pre-Construction Fee. The Owner may elect to fully follow this section or to only select portions of this section (due to budget constraints) for incorporation into Construction Documents, and the Owner will not incur any additional design services or Pre-Construction Overhead costs as long as the Facility Performance Requirements and associated systems selections are made and documented prior to the beginning of Construction Documents.
   C. Green Building Rating Systems: No specific green building rating system certification is required by UGA; certification is pursued on a per project basis.
   D. The design and construction of a new building shall be for at least a fifty-year life with emphasis on minimum life cycle costs rather than low first costs.
   E. Energy Performance:
      i. The mechanical, electrical, and plumbing energy related design for all buildings shall comply with International Energy Conservation Code (IECC) – 2015 with Georgia Supplement and Amendments (most up to date adopted amendments).
      ii. Computerized energy budget analysis, forecasting consumption in BTU/GSF/Year is mandatory for all new construction projects over 10,000 square feet that have heating and cooling. Design Professional shall submit a

model output summary and live model to UGA for review with each major design submission and as required to obtain energy savings rebates.

iii. Computerized energy budget analysis, forecasting consumption in BTU/GSF/Year is mandatory for all renovation projects that renovate an entire building (not a portion of a building). Design Professional shall submit a model output summary and live model to UGA with each major design submission and as required to obtain energy savings rebates.

iv. For partial renovation projects, the Design Professional shall submit a passed output summary and associated files from a ComCheck analysis (lighting only).

v. Life cycle cost comparisons with return on investment calculations of different proposed mechanical systems shall be presented at the end of schematic design.

a. Design Professional shall develop narrative of each system with diagrams of major equipment locations and review with Project Manager prior to coordinating costing information.

vi. Metering of utilities shall be reviewed with the Project Manager at the Design Phase Kickoff meeting. For new construction and full building renovation projects, metering of all utilities (electricity, natural gas, steam, and chilled water) shall be provided at the building level and sub-metering of building systems as needed to isolate, manage and optimize building energy use at the system level. See section 23 05 19 Meters & Gauges. In addition, new utility meters shall be connected to the building automation system. Metering requirements for partial renovation projects shall be reviewed on a project-by-project basis.

F. Renewable Energy

i. For new construction and major renovations, the Design Professional shall identify and evaluate opportunities for on-site renewable energy generation including life-cycle cost analysis and return on investment calculations with a target of meeting up to 5% of the project's predicted annual electrical and/or thermal energy consumption.

G. Water Conservation

i. For new construction and major renovations over $5M, provide design and cost options for the project to conserve 10% and 20% more water, not including irrigation, than the code requirement for the state of Georgia.

H. Storm Water and Condensate

i. Options for collection and reuse of storm water and condensate are required for all new construction projects with special attention given to uses other than irrigation. Storm water best management practices shall be incorporated to exceed the Project jurisdiction storm water quality standards, with a preference for visible and vegetative storm water controls.

ii. Design Professional shall evaluate feasibility of rain water and condensate water collection, distribution and reuse to serve non-consumptive uses including but not limited to cooling tower make-up, toilet flushing and landscape irrigation.

I. Waste & Recycling

i. The University of Georgia is committed to drastically reducing waste and diverting 65% or more of the campus waste stream from landfills. For new construction and major renovations, the project shall provide convenient

facilities for recycling for building occupants and facilities management staff to reduce waste and increase collection of recyclables. See section 01 74 19 Construction Waste Management & Disposal.

J. **For UGA Athens Campus only**: Use the following outdoor design conditions:

i.	Winter, design dry bulb	10 ˚F
ii.	Summer, design - cooling	95 ˚F DB / 76 ˚F MCWB
iii.	Summer, design - evaporation	78 ˚F WB / 89 ˚F MCDB
iv.	Summer, design - dehumidification	75 ˚F DP / 135.3 HR / 82.3 MCDB
v.	Degree days heating	2,900 (base 65 ˚F)
vi.	Degree days cooling	1,700 (base 65 ˚F)
vii.	Climate zone	Zone 3A

K. Comfort Conditions:
   i. Indoor design conditions shall suit the process and user requirements.
   ii. For comfort conditions use 75 ˚F DB in summer and 70 ˚F DB in winter.
   iii. Cooling equipment shall be selected to achieve 50% RH at design cooling conditions and maximum space humidity shall not exceed 60% RH. Positive dehumidification control may be required for high outdoor air supply applications and/or specific process needs. The Design Professional shall determine and confirm in writing all indoor design conditions during Schematic Design.

L. Georgia Power Rebates:
   i. The Design Professional and Contractor shall meet with the Project Manager and Georgia Power and/or Georgia Power's delegated representatives to determine which, if any, Georgia Power rebates may apply to the Project. The Design Professional and Contractor shall supply all required documentation in a timely manner to assist the Owner with obtaining the rebates and any costs associated with the documentation shall be included in the Design Professional's Basic Services Fee and the Contractor's Base Bid or Overhead Costs.

2. **PRODUCTS** – Not used.
3. **EXECUTION**
   A. The Design Professional shall complete the Facility Performance Requirement Checklist located at the end of this section. This checklist is intended to assist UGA with tracking completion of sustainable design and facility performance requirements. Each project is required to address all aspects of the Standards whether included in this checklist or not. The Design Professional completes as much as possible as for the Schematic Design deliverable and shall fully complete for the Design Development deliverable. See 01 29 00.

Office of University Architects
for Facilities Planning
UNIVERSITY OF GEORGIA

FACILITY PERFORMANCE REQUIREMENTS CHECKLIST

PROJECT NAME:	DATE SUBMITTED:
DESIGN PROFESSIONAL:	MECHANICAL ENGINEER:
ELECTRICAL ENGINEER:	PLUMBING ENGINEER:
CONTRACTOR:	UGA PROJECT MANAGER:

EFFICIENT AND SUSTAINABLE DESIGN: *Check all that apply.*	
☐	Contractor provided cost estimates and detailed return on investment options for energy and water conservation during the Schematic Design and Design Development design phases for the Owner's evaluation.
☐	All requirements of Section 01 81 00 – Facility Performance Requirements were met.
☐	Not all Facility Performance Requirements in Section 01 81 00 were met, and the Design Professional submitted a variance for approval to document which aspects would not be met.
☐	The facility is designed and constructed for at least a fifty year life with emphasis on minimum life cycles costs rather than low first costs.

GREEN BUILDING RATING SYSTEMS: (See section 1C)
Which Green Building Rating System framework is the project designing to?
Is the project pursuing 3rd party certification? (Yes/No)
If yes, which level of certification is anticipated? (Note: If pursuing LEED-certification and the project achieved lower than Gold, explain primary factors that led to Silver rating or lower as opposed to Gold.)

ENERGY PERFORMANCE: (See section 1E) *Check all that apply and fill in the blank as needed.*	
If not all requirements of ASHRAE Standard 90.1-2010 are met, list any requested and approved exceptions:	
☐	The project will achieve energy savings target of 10% or greater.

List anticipated energy savings (%):
☐ A computerized energy budget analysis, forecasting consumption in BTU/GSF/Year was submitted to owner. (Required for new construction projects over 10,000 square feet that have heating and cooling and renovation projects that renovate an entire building.)
☐ Life cycle cost comparisons with return on investment calculations of different proposed mechanical systems were presented to Project Manager at the end of Schematic Design.
☐ Design Professional provided a narrative of each system with diagrams of major equipment locations and reviewed with Project Manager prior to coordinating costing information.
☐ Metering of all utilities (electricity, natural gas, steam, and chilled water) is provided at the building level.
☐ Sub-metering of building systems is provided to isolate, manage and optimize building energy use at the system level.
☐ Design Professional provided the Energy Use Intensity (EUI).
☐ Design Professional coordinated with UGA PM to obtain updated energy and utility rates to use in LCC calculations.
List all building systems that are not metered separately:

RENEWABLE ENERGY: (See section 1F) *Check all that apply and fill in the blank as needed.*
☐ The Design Professional identified and evaluated opportunities for on-site renewable energy generation including life-cycle cost analysis and return on investment calculations with a target of meeting up to 5% of the project's energy demand.
List renewable energy strategies evaluated and associated ROI of each:
List renewable energy strategies to be installed:
What percentage of the projects energy demand is being met by renewable energy?
Does the project incorporate solar-thermal water heating to meet hot water demand? (Yes/No) If not, explain why not:

WATER CONSERVATION: (See section 1G) *Check all that apply and fill in the blank as needed.*
☐ The Design Professional provided design and cost options for the project to conserve 10% and 20% or more water, not including irrigation, than the code requirement for the state of Georgia.
List water conservation features installed:
What percentage of water conservation above Georgia code requirement is anticipated during typical building operation?

STORM WATER AND CONDENSATE: (See section 1H) *Check all that apply and fill in the blank as needed.*
☐ Storm water and condensate water collection and reuse are included in this project.
Describe the system installed and list the intended uses for the reclaim water:
What percentage of building water demand is met by the storm water and condensate water collection system?
☐ Storm water best management practices are incorporated to exceed the Project jurisdiction storm water quality standards, with a preference for visible and vegetative storm water controls.
List storm water BMP's installed:

OUTDOOR DESIGN CONDITIONS (For UGA Athens Campus only): (See section 1J) *Check all that apply and fill in the blank as needed.*

☐	The following outdoor design conditions serve as basis of design: Winter, design dry bulb: 10°F Summer, design – cooling: 95°F DB/76° MCWB Summer, design – evaporation: 78°F WB/ 89° MCDB Summer, design – dehumidification: 75° DP/ 135.3 HR/ 82.3 MCDB Degree days heating: 2,900 (base 65°F) Degree days cooling: 1,700 (base 65°F) Climate zone: Zone 3A

COMFORT CONDITIONS: (See section 1K) *Check all that apply and fill in the blank as needed.*	
☐	The Design Professional determined and confirmed in writing all indoor design conditions during Schematic Design.
☐	The design conditions suit the process and user requirements.
☐	Comfort conditions are 75°F DB in summer and 70°F DB in winter. If not, please list conditions used:
☐	Cooling equipment is selected to achieve 50% RH at design cooling conditions and maximum space humidity will not exceed 60% RH.
Is positive dehumidification control needed? Is it provided?	

GEORGIA POWER REBATES: (See section 1L) *Check all that apply and fill in the blank as needed.*	
☐	The Design Professional and Contractor met with the Project Manager and Georgia Power representatives to determine which, if any, Georgia Power rebates apply to the Project.
☐	The Design Professional submitted the project pre-approval application to Georgia Power prior to pre-construction meeting.
List anticipated rebates:	
☐	The Design Professional and Contractor supplied all required documentation in a timely manner to assist the Owner with obtaining the rebates at no additional cost.

01 91 13
GENERAL COMMISSIONING REQUIREMENTS

1. **GENERAL**
   A. Related sections:
      i. 00 00 07 – Design Professional Design Process Requirements
      ii. 00 00 08 – Design Professional Documentation Requirements & Deliverables
      iii. 01 75 00 – Starting and Adjusting
      iv. 01 77 00 – Project Closeout
      v. 01 81 00 – Facility Performance Requirements
      vi. 02 22 00 – Existing Conditions Assessment
      vii. 22 00 00 – General Plumbing Requirements
      viii. 23 00 00 – General Mechanical Requirements (HVAC)
      ix. 23 09 23 – Building Automation and Temperature Control System
      x. 26 00 00 – General Electrical Requirements
      xi. 28 31 00 – Fire Detection & Alarm

   B. The University of Georgia (UGA) is committed to applying the Commissioning (Cx) Process to all new construction and major renovation projects for its campus buildings and its energy and utility infrastructure. This section of the Design and Construction Standards is intended to provide guidance and information regarding the minimum expectations and requirements of the Cx process at UGA. The primary goal of this section is to inform the A/E team of their Cx related responsibilities, as well as those of the various members of the Cx team throughout the project.

   C. The Cx Process is a systematic procedure for ensuring that systems operate and perform according to the Owner's Project Requirements (**OPR**, for new construction and certain major renovation projects), or the Current Facility Requirement (**CFR**, for renovation projects). The Cx process oversees, verifies, and documents that the facility and its systems are planned, designed, installed, tested, and turned over as required to meet the OPR/CFR and the project contract drawing and specification documents. The Commissioning process does not take away from or reduce the responsibility of the Design Professional or Contractor to provide a finished and fully functioning product. Specific objectives of commissioning are as follows:
      i. Ensure that systems are complete and functional as intended by UGA and the design for the building or space's planned use.
      ii. Ensure that systems are designed and installed such that they are safely and effectively maintainable within the schedule and environment of higher education teaching and research operations.
      iii. Ensure that system operation is optimized for both energy efficiency and occupant satisfaction.
      iv. Within renovations, confirm the design accurately depicts the required renovation scope when tying into existing systems or re-using existing systems.
      v. Ensure that UGA Facility Management Division (**FMD**) has the required documentation and training to operate and sustain the building performance throughout the intended lifecycle.

   D. Timeline of Commissioning: For most projects at UGA, the Cx process will ideally begin during project programming and before the beginning of the schematic design (SD)

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stage of the design phase and conclude at the end of the first year warranty period. For LEED projects, the Cx Consultant should be on board prior to the end of the design development (DD) stage.

E. Management: At UGA, the Cx Consultant, (either CxA, CCP, BCx Consultant qualified, or equivalent) will be contracted directly to the University, or through the Georgia State Finance and Investment Commission (GSFIC). The Cx Consultant will be independent of the design and construction teams. The Cx Consultant will primarily report directly to UGA's designated Project Manager (PM). The PM will coordinate with the project appropriate UGA Engineering personnel, the Director of Capital Engineering and Infrastructure within the Office of the University Architects (OUA), or UGA in-house Commissioning Department (cx@fmd.uga.edu) within the Office of Utility and Energy Management (UEM).

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F. Coordination: Each contractor and sub-contractor of the Cx Team shall assign one individual to be the primary point of contact for the Cx process. Expected roles for the Cx Team are provided by phase at the end of this section.

i. Commissioning Team shall consist of:

a. Commissioning Provider (Cx Consultant)

b. Construction Team:

i) Project Manager
ii) Mechanical Subcontractor
iii) Electrical Subcontractor
iv) Plumbing Subcontractor
v) TAB Subcontractor
vi) Controls Subcontractor
vii) Suppliers/Manufacturers (as needed)

c. Design Professional:

i) Architect
ii) Engineers

d. UGA:

i) UGA PM
ii) FMD: Engineering, O&M, UEM, etc.
iii) OUA (if applicable, ask UGA PM)
iv) End-user representative(s)

ii. Scheduling: The Cx Consultant will work with the Contractor according to established protocols to schedule the commissioning activities. The Cx Consultant will provide sufficient notice to the Contractor for scheduling commissioning activities. The Contractor will integrate all commissioning activities into the master schedule. All parties will address scheduling problems and make necessary notifications in a timely manner in order to expedite the commissioning process. The Cx Consultant will provide the initial schedule of primary commissioning events at the commissioning kickoff meeting. The Commissioning Plan provides a format for this schedule. As construction progresses more detailed schedules are developed by the Cx Consultant. The Commissioning Plan also provides a format for detailed schedules.

G. Commissioning scope of work may include the following phases as defined in ASHRAE 1.1:
   i. Pre-Design Phase: Develop design phase commissioning plan, outline the scope of design requirements and design intent, describe systems to be installed, outline the documentation requirements for each party involved in the commissioning process, define subsequent commissioning procedures and document the process. Interface with the Design Team to refine the construction phases and ensure that the phasing of MEP systems is logical and appropriate. Develop commissioning specifications and functional testing requirements to be included in the bid documents.
   ii. Design Phase:
      a. Continuation of Pre-Design and interface with the Design Team to refine the construction phases and ensure that the phasing of MEP systems is logical and appropriate.
      b. Develop commissioning specifications and functional testing requirements to be included in the bid documents.
      c. Review design documentation for compliance with the Standards and shall clearly identify all deviations from the Standards.
      d. Designs shall be reviewed critically for inclusion of design intent, with metrics; included in documents from the schematic design submittal. The design intent with metrics shall be included on the first construction drawing sheet of the associated service.
      e. Metrics shall include system data as described in Informative Annex K, ASHRAE Guideline 1.1 and tailored to the specific project.
      f. The Cx Consultant shall verify that the cover sheets of the Mechanical, Electrical, and Plumbing drawings comply with the Design Intent requirements listed in the corresponding sections (23 00 00, 26 00 00, and 22 00 00).

   iii. Construction Phase:
      a. Early Construction: Complete commissioning plan at the beginning of the construction phase. Obtain project schedules, work with contractor to incorporate Cx activities into construction schedule. Gather and review subcontractor submittals and operation and maintenance manuals. Work with subcontractors to develop detailed pre-functional check lists and performance test plans for each system and piece of equipment involved in the commissioning process. Cx Consultant shall provide pre-functional checklists and functional test procedures to Contractor, Design Professional, and Project Manager for comment a minimum of 6 weeks prior to their execution.
      b. Construction: Conduct site visits to observe construction, noting details that might affect equipment and system performance or operation.
      c. Pre-functional Start-up: Coordinate with various subcontractors start-up performance tests. Oversee all start-up tests and ensure that pre-functional performance and checklists are completed, and all deficiencies resolved. Cx Consultant shall review Controls Contractor

self-created Pre-functional checklist and include items in the Cx Consultant checklist that are not duplications.

d. The Cx Consultant shall be responsible for coordinating with the drive manufacturer / vendor controls contractor and the TAB agency to ensure that VSDs are adjusted so that harmonic frequencies are skipped.

e. Field Verification/Inspection of Systems: Develop equipment and system functional performance test procedures. Observe and verify proper operation of equipment, systems, and controls based upon functional performance test plans. Verify that corrective measures are taken as needed.

f. Operations and Maintenance Staff Training and Documentation: Reviews the O&M documentation and ensures the presence of complete operation and maintenance manuals. Determine the training needs of the building operation and maintenance staff. Reviews, pre-approve, and coordinate the training provided by subcontractors and verify that training was completed in accordance with training needs and project requirements. Refer to Section 01 77 00 Project Closeout.

iv. Occupancy and Operations Phase:

a. Warranty Review and Seasonal Testing:

i) Coordinate and supervise:

a. Seasonal testing (winter and summer)

b. Deferred testing

c. Review trends to identify issues and opportunities for system optimization.

d. Correction of deficiencies

ii) Provide documentation of warranty and seasonal tests.

b. UGA/Cx closeout meeting: The Cx Consultant shall meet on campus with the appropriate facilities and maintenance personnel (FMD Engineering, UEM, and O&M for Athens campus; designated facility managers for other campuses) to review building systems and the Systems Manual. Coordinate with controls personnel to also attend this meeting.

H. Systems to Commission:

i. Systems to be considered for commissioning shall include the following:

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a. Building Envelope Systems (refer also to Standard Section 01 91 19)

b. HVAC Control Systems, including links to remote monitoring and control sites and integration to other systems

c. Laboratory Airflow Control Systems, including integration to the HVAC Control System

d. Major HVAC Equipment (e.g. Air-handling units (AHUs) including DOAS units) and related Systems

e. All types of airflow Terminal Equipment, including chilled beams

f. Chilled Water System, including connection with the district system

g. Cooling Towers and Condenser Water (CDW) pumps

h. Steam System, including steam heat exchangers (SHX) and connection with the district steam system

i. Heating Hot Water System

j. Energy Recovery Equipment and Systems

k. Process Cooling Systems
l. Variable Refrigerant Flow (VRF) systems
m. Exhaust Systems
n. Piping Systems
o. Ductwork Systems
p. Smoke Evacuation Systems
q. Water Reclaim Systems
r. Water Treatment Systems
s. Make-up water systems
t. Fire Alarm Systems
u. Fire Protection Systems
v. Domestic Hot Water Heating Systems
w. Domestic Water pressure reducing stations and mixing valves
x. Lighting and Day-Lighting control Systems
y. Utility Metering Systems
z. Emergency Power Systems
aa. Electrical Service and Distribution Systems
bb. Renewable Energy Systems

ii. Depending upon the complexity of the specific project, other systems may be included within the Cx Consultant's SoW.
iii. Note that this list includes equipment and systems which fall within the third-party commissioning consultant's scope of work. Contractors may be responsible per the contract documents for additional commissioning of systems not listed above or included in the Cx Scope of Work.

I. Sustainability
i. The Cx Consultant's shall confirm with the PM, project specific energy efficiency requirements. The SoW will adhere to and generally exceed appropriate energy-efficiency rating systems, The Georgia Peach Green Building Rating System, USGBC LEED™ requirements (EAp Fundamental Commissioning and Verification, EAc Enhanced Commissioning), Green Globes, or equivalent.

J. Abbreviations
i. A/E: Architect/Engineer
ii. BCx Consultant: Building Commissioning Professional, qualification issued by ASHRAE
iii. BoD: Basis of Design
iv. CC: Controls contractor
v. CCP: Certified Commissioning Professional, qualification awarded by the Building Commissioning Certification Board (BCCB)
vi. CD: Construction Drawings
vii. CFR: Current Facilities Requirements
viii. CM: Construction manager
ix. Cx: Commissioning
x. CxA: Commissioning Authority, qualification issued by ACG (AABC Commissioning Group)
xi. DD: Design development (phase)
xii. FMD: UGA's Facility Management Division
xiii. GC: General contractor
xiv. GSFIC: Georgia State Finance and Investment Commission
xv. LEED: The U.S. Green Building Council's Leadership in Energy Efficient Design program
xvi. MEP: Mechanical, Electrical, Plumbing
xvii. NC+MR: New construction and major renovation
xviii. O&M: Operations and Maintenance, usually referring to UGA's O&M Department, within FMD.

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xix. OPR: Owner's project requirements
xx. OUA: UGA's Office of University Architects
xxi. PFC: Pre-functional checklist
xxii. PM: Project Manager / Management
xxiii. SD: Schematic design (phase)
xxiv. SOW/SoW: Scope of work
xxv. TAB: Testing, adjusting, and balancing
xxvi. TAB-C: TAB Consultant
xxvii. UEM: UGA's Office of Utility and Energy Management (within Facilities Management Division)

Commissioning Team Process Overview and Responsibilities

A. Design Phase - The following are general design phase expectations and responsibilities of specific Cx Team members:

i. A/E Team:

1. In certain cases, the Cx Consultant may assist UGA with development of the project OPR. The design team shall use the OPR in the development of their Basis of Design (**BoD**).
2. Provide the Cx Consultant with the BoD for systems being commissioned. Respond to any resulting review questions pertaining to the Cx Consultant's review of the BoD.
3. Meet with the Cx Consultant to discuss and coordinate the design phase Cx process and review the Cx Plan developed by the Cx Consultant.
4. Incorporate into the project specifications the commissioning specifications, and any referenced attachments, provided by the Cx Consultant. Coordinate with the Cx Consultant which numbering format is being used.
5. Include the Cx Consultant on each design phase review submittal, concurrent with submitting to UGA.
6. Respond to the design review comments provided by the Cx Consultant. Provide responses prior to issue of the next progress submittal. The Cx Consultant will generally review the following submittals: 100% SD, 100% DD, 50% CD and 100% CD.
7. Meet with the Cx Consultant, as required, to discuss design review comments.

ii. TAB Consultant:

1. For New Construction projects, and when contracted during the design phase, conduct a late CD phase design review to ensure devices and components are included, as required, for proper test and balance.
2. For renovation projects, perform pre-TAB services to inform the design team of current operating performance and any issues to be considered as part of the renovation scope. This scope will need to be developed, specific to the project, by both the design team and Cx Consultant.
3. Provide design review comments, during the design phase, to UGA FMD / OUA (as appropriate).

iii. General Contractor (if identified during the design phase):

1. With input from the Cx Consultant, incorporate Cx activities into the master construction schedule.

B. Construction Phase - The following are general construction phase expectations and responsibilities of specific Cx Team members:

i. All Cx Team Members:

1. Review and provide comments on the Cx Plan, prior to the Cx scoping meeting. Follow and adhere to the Cx Plan.
2. Participate in the Cx scoping meeting to discuss the Cx scope, Cx Plan, coordination and schedule. This meeting shall occur approximately upon start of **MEP** rough-in.
3. Review and comment on the functional test procedures, scripts and checklists developed by the Cx Consultant. The Cx Consultant shall submit the tests approximately 2-3 months prior to functional testing in the field.

ii. A/E Team:

1. Inform the Cx Consultant of any changes to the BoD or construction documents, as applicable, as related to the systems being commissioned.
2. Coordinate submittal review comment deadlines imposed on the engineers to the Cx Consultant. The intent is that the Cx Consultant review be completed concurrently with the Engineer's review and the Cx Consultant's comments incorporated with the Engineer's comments, as applicable.
3. Respond to Request for Information (RFIs) from the Cx Consultant.
4. Copy the Cx Consultant on A/E observation reports.
5. Assist the Cx Team to resolve any issues or concerns identified during the construction phase.

iii. General Contractor / Construction Manager:

1. Ensure that all subcontractors execute their commissioning responsibilities according to the Contract Documents and schedule.
2. Continue to incorporate and update TAB and Cx activities into the master construction schedule.
3. Participate in Cx coordination meetings as required.
4. Distribute one copy of each subcontractor's submittal to the Cx Consultant for review, concurrent with the Engineer's review.
5. Develop, with the subcontractors, the start-up plan to be employed for each piece of equipment and system.
6. Verify items identified in both the Cx and TAB Issue logs are being addressed by the subcontractor responsible.
7. Spearhead coordination between the Subs and the Cx Consultant to witness factory testing and/or start-up. The Cx Consultant will specify in the Cx Plan which construction phase tests and start-ups intended to witness, as required by the SoW.
8. Provide the Cx Consultant copies of third-party test results. The Cx Consultant will specify in the Cx Plan which test reports will be reviewed, as required by the SoW.
9. Gather, organize and submit O&M information for review by the A/E, UGA and the Cx Consultant. Final and approved O&M documentation shall be complete and on-hand for the owner training sessions.

10. Distribute to the Cx Consultant a digital, bookmarked copy of the O&M Manuals, approved equipment submittals, and As-Builts submitted by each subcontractor.
11. Spearhead the response and incorporation, as agreed, to the Cx Consultant review comments of the O&M manuals submitted by the subcontractors.

iv. All Subcontractors:

1. Submit to the Cx Consultant the proposed pre-functional checklists (PFC) to be employed in the project, appropriately utilizing the checklists, warranty and other documentation provided by the manufacturer. If a subcontractor does not have an acceptable PFC for a piece of equipment or system, the Cx Consultant will provide that checklist for the subcontractor's use.
2. Each subcontractor shall complete each approved PFC and submit it to the Cx Consultant prior to functional testing.
3. Respond, in writing, to any Cx Consultant submittal review comments.
4. Participate in Cx coordination meetings as required.
5. Respond, in writing, to each observation listed in both the Cx and TAB Issue Logs within 5 business days, or as stipulated in the contract documents, from its release from the Cx Consultant or TAB-C. Responses shall indicate whether the issue is agreed to and will be or has been corrected, whether more information is needed from the Cx Consultant or TAB-C regarding the issue, or whether there is a disagreement with the issue reported.
6. Execute the coordinated and approved start-up plan.
7. Submit O&M documentation to the GC with sufficient time to be reviewed, revised as necessary and approved by the A/E, UGA and Cx Consultant prior to owner training.

v. TAB Consultant:

1. Obtain access to the controls platform and review plans and documentation in preparation for on-site work. Be prepared to conduct TAB work both with the CC and independently.

C. Occupancy and Operations Phase

i. A/E Team:

1. Assist the Cx Team to resolve any issues or concerns identified during the acceptance phase functional tests.

ii. General Contractor:

1. Ensure that all Subs execute their commissioning responsibilities according to the Contract Documents and schedule.
2. Continue to coordinate and incorporate Cx activities into the master construction schedule.
3. Continue to verify that items identified in both the Cx and TAB Issue logs are being addressed by the responsible subcontractor.

a. Note: one revisit to close out an issue will be included in the Cx Consultant and TAB Consultant scope of work. The cost of additional revisits shall be the responsibility of the Construction Manager / General Contractor.

4. Provide the training plan and agenda proposed by the subcontractors to the Cx Consultant for review

5. Provide As-Built documentation as described in 01-77-00, "Closeout Procedures"

iii. All Subcontractors:

1. Demonstrate functional performance, according to the coordinated functional test procedures, scripts and checklists, provided by the Cx Consultant during the construction phase.

2. In general, functional testing by the Cx Consultant shall be performed from graphic control screens that reflect the Design Intent and actually installed equipment, and which are functionally recognizable as those by which UGA personnel will operate the facility.

3. Continue to retest until acceptable performance is verified and documented.

4. Provide specified testing documentation as required and as requested by the Cx Consultant.

iv. Controls Contractor (CC):

1. During functional testing, route alarms to Cx Consultant. Upon completion of the functional tests and correct alarming, ensure that alarms are correctly routed on the controls system, and functioning as for normal operation and monitoring during building occupation.
2. Provide requested trend information to include, at minimum, all major control setpoints to demonstrate stable and accurate control.
3. Assist the TAB-C and the Cx Consultant to optimize static and differential pressure control setpoints and reset limits.

v. TAB Consultant (TAB-C):

1. Assist the CC and Cx Consultant to optimize static and differential pressure control setpoints and reset limits.
2. When required, assist the Cx Consultant to conduct and document pressure mapping of the facility at the design airflows and at part load conditions to verify that pressure relationships within the building are appropriate according to the project requirements.

D. Warranty Phase

a. A/E Team:

i. Continue to assist the Cx Team to resolve any issues or concerns identified during the first year warranty period.

b. General Contractor / Construction Manager:

i. Assist in coordination with subcontractors to perform seasonal and deferred functional testing, as required.

c. All Subcontractors:

i. Support the Cx Consultant to perform any seasonal or deferred functional testing, as required.

02 01 00
MAINTENANCE OF EXISTING CONDITIONS

1. **GENERAL**
    A. Protection
        i. All existing hardscape and landscape to include, but not limited to, buildings, curb and gutter, stairs, sidewalks, retaining walls, bus shelter, roadway, parking lot, trees, and shrubbery not noted for demolition or improvements shall be protected during the work to prevent damage and staining.
    B. Repair
        i. All damaged and/or stained work, as described above, shall be repaired by the Contractor at his/her own expense. In the event the Owner of said structure or utility elects to make necessary repairs with his/her own workforce, the Contractor shall reimburse the Owner for the cost of repairs. Contractor shall repair or replace damage as required to return it to its original state before final payment shall be issued by the Owner.