1. **GENERAL**
   A. The Design Professional and Contractor’s client is the OUA. The End User specifically is not the Design Professional and Contractor’s client. The End User may at times provide input on desired program elements; however, OUA will provide final direction that represents UGA as a whole. The End User is in many ways a tenant and is focused on very particular aspects of the project. It is the role of OUA to appropriately incorporate the End User’s comments into the project.
   B. The Design Professional is explicitly forbidden to initiate contact directly with the End User without written permission by OUA. To do so is a breach of the Design Professional’s contract. In the event that the End User contacts the Design Professional directly, the Design Professional shall politely tell the End User to relay any information to OUA. The Design Professional shall also immediately inform OUA about the direct contact initiated by the End User.
   C. The Contractor is explicitly forbidden to initiate contact directly with the End User without written permission by OUA. It is acknowledged that in renovation projects where portions of existing buildings remain occupied the contractor may have interactions with the End User. However, the contractor shall not take any directions from the End User that modifies the contracted scope of work. If the Contractor takes direction from the End User it does so wholly at its own risk and if there is an associated cost there will not be any obligation to pay for the work. In the event that the End User contacts the Contractor directly, the Contractor shall politely tell the End User to relay any information to OUA. The Contractor shall also immediately inform OUA about the direct contact initiated by the End User.
1. **GENERAL**

   A. The Design Professional and Contractor’s client is the FMD. The End User specifically is not the Design Professional and Contractor’s client. The End User may at times provide input on desired program elements; however, FMD will provide final direction that represents UGA as a whole. The End User is in many ways a tenant and is focused on very particular aspects of the project. It is the role of FMD to appropriately incorporate the End User’s comments into the project.

   B. The Design Professional is explicitly forbidden to initiate contact directly with the End User without written permission by FMD. To do so is a breach of the Design Professional’s contract. In the event that the End User contacts the Design Professional directly, the Design Professional shall politely tell the End User to relay any information to FMD. The Design Professional shall also immediately inform FMD about the direct contact initiated by the End User.

   C. The Contractor is explicitly forbidden to initiate contact directly with the End User without written permission by FMD. It is acknowledged that in renovation projects where portions of existing buildings remain occupied the contractor may have interactions with the End User. However, the contractor shall not take any directions from the End User that modifies the contracted scope of work. If the Contractor takes direction from the End User it does so wholly at its own risk and if there is an associated cost there will not be any obligation to pay for the work. In the event that the End User contacts the Contractor directly, the Contractor shall politely tell the End User to relay any information to FMD. The Contractor shall also immediately inform FMD about the direct contact initiated by the End User.
1. GENERAL
   A. The Design Professional and Contractor’s client is the OUA. The Facilities Management Department specifically is not the Design Professional and Contractor’s client. The Facilities Management Department may at times provide input on desired design elements, however since OUA is responsible for the overall budget and schedule OUA will provide final direction that represents UGA as a whole. It is the role of OUA to appropriately incorporate the Facilities Management Department’s comments into the project.
   B. The Design Professional is explicitly forbidden to initiate contact directly with the Facilities Management Department without written permission by OUA. To do so is a breach of the Design Professional’s contract. In the event that the Facilities Management Department contacts the Design Professional directly, the Design Professional shall politely tell the Facilities Management Department to relay any information to OUA. The Design Professional shall also immediately inform OUA about the direct contact initiated by the Facilities Management Department.
   C. At times OUA may give written direction to the Design Professional so consultants may discuss design aspects specifically with the Facilities Management Department. When this occurs it is mandatory that the Design Professional documents the direct conversation with the Facilities Management Department and distributes the conversation summary with all parties including OUA.
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.
1. **GENERAL**
   A. Related Sections:
      i. 01 31 00.02 – Design Professional Documentation Requirements & Deliverables
      ii. 01 81 00 – Facility Performance Requirements
      iii. 01 78 00 – Closeout Submittal
   B. There are other Design Professional process requirements included throughout the Standards. 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.
   C. Design Intent Documentation: The cover sheet of the mechanical, electrical, and plumbing drawings shall indicate design intent (narrative and metrics) descriptions of:
      i. Applicable codes standards used.
      ii. Narrative description of the scope of the work.
      iii. State design assumptions.
      iv. Design ambient and inside conditions.
      v. State the ventilation procedure used (including design occupancy and persons/sq. ft.). Refer to ASHRAE 62 - Paragraph 6 “Procedures”.
      vi. Total connected design load for all services/utilities.
      vii. Detailed layer by layer building envelope data used for design.
      viii. Overall building air balance diagram for all operating conditions.
     ix. Individual spaces air balance.
      x. Assumptions and provisions for future addition/expansion.
      xi. Spaces and processes requiring 24/7/365 cooling, humidity control, etc.
      xii. Building envelope assumptions (walls, roof, partitions, glass U-value and shading coefficient, etc.)
      xiii. List maximum noise levels of all HVAC equipment on schedules.
      xiv. All specific, critical, user defined requirements.
   D. For Schematic Design the Design Professional shall include mechanical, electrical, and plumbing design narratives / outline specifications.
   E. For Design Development (Preliminary Design) the Design Professional shall include mechanical, electrical, and plumbing design narratives / outline specifications, or the first draft of full specifications.
   F. 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.
1. GENERAL
   A. These numbering conventions have been developed and should be followed throughout UGA controlled facilities for the purpose of standardizing room numbers.
   B. For new buildings, these standards should 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.
   C. 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.
   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)

*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.

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)
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.

<table>
<thead>
<tr>
<th>Type</th>
<th>Room Number*</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porch/Deck/Ramp</td>
<td>XX945</td>
<td></td>
</tr>
<tr>
<td>Lobby/Foyer</td>
<td>XX95S</td>
<td>Includes lobby, foyer, vestibule, anteroom</td>
</tr>
<tr>
<td>Dock</td>
<td>XX96S</td>
<td>Includes receiving areas, loading docks</td>
</tr>
<tr>
<td>Elevator</td>
<td>XX97S</td>
<td></td>
</tr>
<tr>
<td>Stair</td>
<td>XX98S</td>
<td></td>
</tr>
<tr>
<td>Hall/Corridor</td>
<td>XX99S</td>
<td>Includes halls, corridors</td>
</tr>
</tbody>
</table>

* 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.
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For the BIM Execution Plan (BEP) refer to Section: 01 07 00.01
1.0 - PURPOSE, USE AND REQUIREMENTS

The purpose of this BIM Standard 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 01 07 00.01 of the Standards) 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 the 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 the 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 close out data.

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. 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 a 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):

2. Authoring Software for MEP, FP, 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

2.0 – DEFINITIONS AND TERMS

These terms and definitions are specified for BIM Standards. Other general Definitions and Abbreviations can be found in Section II – Design Process in the UGA Design & Construction Standards.

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 01 07 00.01.

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/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.

Record Drawing
The required views from a Record Model in 2D format that documents the published contract drawings for construction, updated at the end of the project construction phase to reflect changes due to Construction Change Orders and document As-Built conditions.

.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 it’s 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 it’s 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 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 sub-contractors 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 project team integrated delivery coordination and planning.

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. Close-out 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 commissioning agent, 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, Owners representatives, Structural & MEP Engineers,
Contractor, major Sub Contractors, and Commissioning Agent 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 sustainable 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. 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).

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 insure 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 his Sub-Contractors. 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 Sub-contractors. 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 UGA OUA and UGA 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 Closeout Spec #.

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:
   - **COBie Table 6-20 Worksheet 01**: Contact (People/Offices/Companies)
   - **COBie Table 6-21 Worksheet 02**: Facility (Identification of facility (ies))
   - **COBie Table 6-22 Worksheet 03**: Floor (description of vertical levels)
   - **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.
   - **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 – MODEL OWNERSHIP & INSTRUMENTS OF SERVICE

5.1 – MODEL OWNERSHIP

1. The BIM model constitutes an Instrument of Service as defined by the Board of Regents Design Professional Contract (CM) section 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. This means that as the building Owner; Board of Regents shall also have ownership of the model and can make it available to the using agency (UGA) at any time as required by the UGA.

5.2 – INSTRUMENTS OF SERVICE

Instruments of Service are those drawings, specifications, and other documents, including those in electronic form, prepared specifically for this Project by the Design Professional and its consultants. In recognition of the public ownership of the Project, the Design Professional and its consultants agree and shall be deemed to have prepared their respective Instruments of Service as architectural and engineering works and as works for hire as defined in 17 U.S.C. §§1029a)(8) and 201(b), thereby transferring and vesting in the Owner, pursuant to 17 U.S.C. §201(d), all common law, statutory, and other reserved rights, including copyrights in the Instruments of Service and in the buildings, improvements, and structures constituting the Project.

1. **Copyright.** Upon execution of this Contract, the Design Professional expressly grants, assigns, transfers, and otherwise quitclaims to the Owner, its successors, and assigns, pursuant to 17 U.S.C. §201(d), all common law, statutory, and other reserved rights, including copyrights in both the Instruments of Service and in the buildings, improvements, and structures embodying the architectural and engineering works that constitute the Project, provided that the owner shall comply with all obligations, including prompt payment of all sums, when due, under this Contract.

   A. The Design Professional shall obtain similar grants, assignments, transfers, and quitclaims from its consultants consistent with this Contract. The Design Professional warrants (and shall cause each of the Design professional’s consultants to warrant also) that this transfer of copyright and other rights is valid against the world.

2. **License to the Design Professional.** Notwithstanding the rights, ownership, grants, assignments, transfers, and quitclaims set forth in Paragraphs 2.1.2.1 in CM Contract, 2.1.2.2 in DB Contract, and, 2.1.2.1 in DBB Contract, the Owner expressly grants, assigns, and transfers a permanent and exclusive license to the Design Professional, its successors, and assigns, for the Design professional’s Instruments of Service, and to each consultant (including the consultant’s successors and assigns) of the Design Professional for such consultant’s Instruments of Service, to use, reproduce, sell, transfer, and accomplish derivative works there from, for any and all purposes.

3. **Release of Liability.** The Owner agrees and hereby forever releases the Design Professional from all liabilities that might arise from the owner’s use of the Instruments of Service or other licensed portions of the Construction. Documents for any alterations, additions, subtractions, or modifications of the Instruments of Service or of the buildings, improvements, and structures of the Project resulting there from, or for use in other Projects; provided, however, that this
release does not apply to liabilities arising from the original Instruments of Service and the buildings, improvements, and structures of the Project that have not been altered, added to, subtracted from, or modified subsequent to completion of construction of the Project by the owner, its successors, or assigns.

4. **Use of Instruments of Service.** Except for the rights and licenses granted in this Article, no other license or right shall be deemed granted or implied under this Contract. The Owner permits and authorizes the Contractor, Subcontractors, Sub-Subcontractors, and material or equipment suppliers to reproduce applicable portions of the Instruments of Service appropriate to and for use in their execution of the Work.

5. **Documents in Electronic Format.** Within forty-five calendar days of the receipt of the marked-up Construction Documents that are required to be furnished by the Contractor pursuant to the Contract Documents, the Design Professional shall provide the owner with Record Drawings and Final Documents as specified in Article 2.2.14 in CM Contract (2.1.20.1 in DB Contract; 2.2.11 in DBB Contract). In the event that the Project is terminated prior to construction, the Design Professional, upon the Owner’s request, shall provide on CD ROM’s two copies of all drawings and Project manual content then existent. Electronic drawings shall be made available for viewing in PDF, Autodesk DWF, or other approved format.

6. **Acknowledgement of Risks Concerning Electronic Media.** The Owner acknowledges that the automated conversion or transfer of electronic documents may introduce inexactitudes, anomalies, or errors. Copies of documents that may be relied upon by the Owner are limited to printed copies (also known as hardcopies) that are signed or sealed by the Design Professional and its consultants. Files in electronic media format or text, data, graphic, or other types that are furnished by the Design Professional to the Owner, are only for the convenience of the owner. Any conclusion or information obtained or derived from such electronic files will be at the user’s sole risk. When transferring documents in electronic media format, the Design Professional makes no representations as to long-term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware different from those in use by the Design Professional and its consultants at the beginning of this assignment.

### 6.0 – 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.

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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 an amendment to the Contractor Agreement, and as an amendment to other separate consulting and commissioning agent 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 Representatives:

UGA Office of University Design Professionals

_____________________________  ______
Name                     Date

UGA Physical Plant

_____________________________  ______
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 Agent:

_____________________________
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

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3.2 – PROJECT GOALS AND OBJECTIVES

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<th>Achieved if</th>
<th>Project Timeframe</th>
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<td>Provide UGA Office of University Design Professionals with a useful BIM model</td>
<td>Model is accurate and contains all major components and systems in Revit format, updated to reflect as-built</td>
<td>Completion of Project</td>
</tr>
<tr>
<td>that can assist in future renovations, additions and space management.</td>
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<tr>
<td>Provide UGA Physical Plant with useful COBie data for the facilities management of the building.</td>
<td>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.</td>
<td>Completion of Project</td>
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### 3.3 – TEAM INFORMATION

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### 3.4 – PROJECT PHASES / MILESTONES

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<td>MM/DD/YEAR</td>
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<td>(Refer to schedule for early bid packages)</td>
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<td>MM/DD/YEAR</td>
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<td>MM/DD/YEAR</td>
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<td>Close-Out (Contractor)</td>
<td>MM/DD/YEAR</td>
<td>MM/DD/YEAR</td>
<td>Owner, Contractor, Commissioning agent</td>
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4.0 – MODEL PLANNING

Identify BIM Models that will be created (i.e. 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 sub-consultants—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

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Model Manager</th>
<th>Email</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>company name</td>
<td>name</td>
<td><a href="mailto:name@name.com">name@name.com</a></td>
<td>p.555-555-5555</td>
</tr>
<tr>
<td>company name</td>
<td>name</td>
<td><a href="mailto:name@name.com">name@name.com</a></td>
<td>p.555-555-5555</td>
</tr>
<tr>
<td>company name</td>
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<td>p.555-555-5555</td>
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</tr>
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</tr>
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<td>p.555-555-5555</td>
</tr>
<tr>
<td>company name</td>
<td>name</td>
<td><a href="mailto:name@name.com">name@name.com</a></td>
<td>p.555-555-5555</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Model Content</th>
<th>Project Phase</th>
<th>Authoring Company</th>
<th>Authoring Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Professional Model</td>
<td>Design Professional building and component objects, code information, Room area information</td>
<td>SD, DD, CD, Construction, Close-out</td>
<td>Design Professional company name</td>
<td>Autodesk Revit Design Professional</td>
</tr>
<tr>
<td>Lab Furnishings Model</td>
<td>Design Professional Casework and Fixed Furnishings</td>
<td>DD, CD, Construction, Closeout</td>
<td>Consultant company name</td>
<td>Autodesk Revit Design Professional</td>
</tr>
<tr>
<td>Survey/Civil Model</td>
<td>Topography, site utilities to within 5 feet of perimeter, hard and soft surfaces, other site objects</td>
<td>SD, DD, CD Construction, Closeout</td>
<td>Survey Engineer company name</td>
<td>Autodesk Civil 3D</td>
</tr>
<tr>
<td>Structural Model</td>
<td>Structural column and beam members, bearing and shear walls, foundations, analytical structural model, lintels</td>
<td>DD, CD, Construction, Close-out</td>
<td>Structural Engineer company name</td>
<td>Autodesk Revit Structure</td>
</tr>
<tr>
<td>Mechanical Model</td>
<td>Mechanical systems, equipment, load information, utilities within 5 feet of building perimeter, Space/ Zone objects</td>
<td>DD, CD, Construction, Closeout</td>
<td>Mechanical Engineer company name</td>
<td>Autodesk Revit MEP</td>
</tr>
<tr>
<td>Electrical Model</td>
<td>Electrical systems, equipment, load information, utilities within 5 feet of building perimeter</td>
<td>DD, CD, Construction, Closeout</td>
<td>Electrical Engineer company name</td>
<td>Autodesk Revit MEP</td>
</tr>
<tr>
<td>Model Name</td>
<td>Model Content</td>
<td>Project Phase</td>
<td>Authoring Company</td>
<td>Authoring Tool</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>---------------------</td>
<td>--------------------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Plumbing Model</td>
<td>Plumbing systems, equipment, load information, utilities within 5 feet of building perimeter</td>
<td>DD, CD, Construction, Closeout</td>
<td>Plumbing Engineer company name</td>
<td>Autodesk Revit MEP</td>
</tr>
<tr>
<td>Energy Model</td>
<td>Energy data, run iterations, lifecycle costing, peak loads</td>
<td>DD, CD</td>
<td>Company name</td>
<td>??</td>
</tr>
<tr>
<td>Construction Model</td>
<td>Scheduling information, sequencing information Fabrication models</td>
<td>Construction, Closeout</td>
<td>Construction company name</td>
<td>Autodesk Revit, NavisWorks</td>
</tr>
<tr>
<td>Estimate Model</td>
<td>Costing data, quantity takeoffs to be derived from design professionals design intent model utilized and further developed by Contractor</td>
<td>SD, DD, CD</td>
<td>Construction company name</td>
<td>Quantity Takeoff and Onscreen Take off.</td>
</tr>
<tr>
<td>Coordination Model</td>
<td>Design Intent Models, Construction models, and Fabrication information</td>
<td>Construction</td>
<td>Design intent models by Design team. Construction and Fabrication models by Construction team</td>
<td>Autodesk NavisWorks / (Revit TBD)</td>
</tr>
</tbody>
</table>
4.3 – BIM FILE NAMES

<table>
<thead>
<tr>
<th>Discipline</th>
<th>File Name Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Professional</td>
<td>ARCH-****-*****.rvt (final model name)</td>
</tr>
<tr>
<td>Lab Furnishings Model</td>
<td>LABF-****.rvt</td>
</tr>
<tr>
<td>Survey/Civil Model</td>
<td>CIVL-****-*****.dwg (2010)</td>
</tr>
<tr>
<td>Structural Model</td>
<td>STRC-****-*****.rvt</td>
</tr>
<tr>
<td>Mechanical Model</td>
<td>MEP-****-*****.rvt (note all MEP models will be contained in a single model)</td>
</tr>
<tr>
<td>Electrical Model</td>
<td>MEP-****-*****.rvt (note all MEP models will be contained in a single model)</td>
</tr>
<tr>
<td>Plumbing Model</td>
<td>MEP-****-*****.rvt (note all MEP models will be contained in a single model)</td>
</tr>
<tr>
<td>Energy Model</td>
<td>ENRG-****-*****.pd2</td>
</tr>
<tr>
<td>Construction Model</td>
<td>CNST-****-*****.nwf/.dwg</td>
</tr>
<tr>
<td>Estimate Model</td>
<td>COST-****-*****.rvt</td>
</tr>
<tr>
<td>Coordination Model</td>
<td>COORD-<em><strong>-</strong></em>**.nwf/.nwd</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Items that Will Not Be Considered Accurate for Dimensioning or Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Professional –</td>
</tr>
<tr>
<td>Structural –</td>
</tr>
<tr>
<td>Civil –</td>
</tr>
<tr>
<td>MEP –</td>
</tr>
<tr>
<td>Lab Furnishings –</td>
</tr>
<tr>
<td>Construction –</td>
</tr>
</tbody>
</table>
4.5 – MODEL ATTRIBUTE DATA / COBIE DATA PLANNING

Specify model component COBie data. The 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 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/Structure/ 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 sub-consultants 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/Structure/ 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 Owners end user parties.

### 4.7.7 – CLOSE-OUT (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-Build 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.
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 this 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: The Design-Builder 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.
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. 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.
REQUEST FOR  
TEMPORARY ID CARD  
CONTRACTOR  

<table>
<thead>
<tr>
<th><strong>Sponsor Name:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sponsor Department:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Department Address:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Sponsor Telephone:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Sponsor MyID:</strong></td>
<td>@uga.edu</td>
</tr>
</tbody>
</table>

**RETURN TO:**  
UGACard Office  
309 Tate Student Center  
FAX: 706 542-0070

**REQUIRED SPONSOR INFORMATION**

Contractors for the University campus whose stay is for an extended but defined period of time, generally from one month to one year, and for a specific academic or administrative purpose, similar to work being performed by regular UGA faculty or staff, will be eligible for a sponsored Contractor ID badge.

Included in this category would be individuals whose work is based on campus but who are not part of the UGA master payroll/ personnel data base. (Those excluded from this category would include students, conference participants, entertainers, law enforcement agencies, and most state and federal employees.) Individuals in this category are not eligible for University services (Contractors are not eligible for discounted athletic tickets). Contact the specific service provider if there are any questions concerning the use of this card. Some University services require a participation fee.

**UGACard DATABASE INFORMATION**

<table>
<thead>
<tr>
<th><strong>Full Name of Contractor:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date of Birth:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Gender:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Social Security Number:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Assigned Number:</strong></td>
<td></td>
</tr>
</tbody>
</table>

*For foreign contractors:*

Country of citizenship:  
Has a social security number been applied for?  
*The UGACard Office will assign special identification numbers to foreign visitors who do not apply for social security numbers.*  

**Purpose of work on UGA Campus:**

**Job title or position:**

**Contractor Company Name:**

**Dates Contractor Will Be On Campus:**

Beginning Date  
Ending Date  
*Individuals in the Contractor Database may be renewed annually from July 1 through June 30.*

**UGA Campus Address**

**Campus Phone #**

**Department Head Approval:**

Phone:  
Date:  

**Dean or Vice President Approval:**

Phone:  
Date:  

>>>Submit this request at least five days prior to coming to UGACard Office to have card made<<<

>>>Application will NOT be accepted without Sponsor MyID and Approving Signatures<<<

**UGACard Office Use Only**

Reviewed and Approved by:  
Date:  

Entered in Database by:  
Date:  

UGA DESIGN & CONSTRUCTION STANDARDS  
DRAFT MAY 17, 2013  
ACCESS TO SITE – RIGHT OF ENTRY  
01 14 13-2
1. GENERAL

A. Related sections:
   i. 01 29 73 – Schedule of Values

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 form and be current in the UGA system. The new vendor form is available at https://webapps.ais.uga.edu/UVDB-VP/home.seam.

C. Application for Payment Procedure for Construction Manager, Design-Build, and Design-Bid-Build project delivery methods:
   i. Contractor shall submit a draft version of the Exhibit K Application for Payment (either electronically or in hard copy), 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 draft version of the Application for Payment, the Design Professional and the Project Manager will either approve the Application for Payment 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, three originals of the approval copy of the Application for Payment will be sent by the Contractor to the Design Professional for signature. The Design Professional will retain one copy and forward two originals to the Project Manager. (Note: For Construction Manager or Design-Builder projects, the approval version of the Application for Payment only needs to include the Exhibit K coversheet and schedule of values in addition to the AIA Application and Certification of Payment form. The detailed back-up and copies of the invoices and subcontractor pay requests do not need to be re-submitted with the final Application for Payment forms.) The Design Professional will then sign and forward two originals of the Application for Payment to the Project Manager for processing and payment.

D. Application for Payment Documentation for Construction Manager 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

   iii.
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.

E. **UGA Athletic Association projects only**: Exhibit K Application for Payment is not required. Form of Application for Payment shall be per the form of agreement between the Contractor and the UGA Athletic Association. Application for Payment documentation as listed in this section 01 29 00 applies.

F. **UGA Real Estate Foundation projects only**: Exhibit K Application for Payment is not required. Form of Application for Payment shall be per the form of agreement between the Contractor and the UGA Real Estate Foundation. Application for Payment documentation as listed in this section applies 01 29 00 applies.
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 Construction Manager 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 Construction Manager 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 Construction Manager 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.
1. GENERAL
   A. To access previous records of as-built and construction drawings for existing buildings on the UGA Campus:
      i. Link: https://plansroom.fmd.uga.edu/
         a. This secure website requires a username and password to access the files. A UGA MyID username and password is required to access this secure website. A visitor username (ppdvis) and password are available for access by non-UGA personnel. To request a password for a visitor username, send an e-mail inquiry to: plansroom@uga.edu.
   B. To access Facilities Inventory drawings (simple building floor plan drawings that include room names, room numbers, and square footage):
      i. Adobe Acrobat PDF Files
         a. Link: https://pdfdrawings.fmd.uga.edu/
            1) This secure website requires a username and password to access the files. A UGA MyID username and password is required to access this secure website. A visitor username (ppdvis) and password are available for access by non-UGA personnel. To request a password for a visitor username, send an e-mail inquiry to: plansroom@uga.edu.
      ii. AutoCAD Files
         a. Link: https://drawings.fmd.uga.edu/
            1) This secure website requires a username and password to access the files. A UGA MyID username and password is required to access this secure website. A visitor username (ppdvis) and password are available for access by non-UGA personnel. To request a password for a visitor username, send an e-mail inquiry to: plansroom@uga.edu.
01 31 00.02
DESIGN PROFESSIONAL DOCUMENTATION REQUIREMENTS & DELIVERABLES

1. GENERAL
   A. Related sections:
      i. 01 00 07 – BIM Standards
      ii. 01 31 23 – Project Website
      iii. 01 31 26 – Electronic Communication Protocols
      iv. 01 33 00 – Submittal Procedures
      v. 01 78 00 – Closeout Submittals
   B. These are minimum requirements for consistent documentation for the review, construction, and archiving for all Projects.
   C. Document Minimum Requirements
      i. Project title consistent with Design Professional Contract title and current date on all sheets.
      ii. 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 index with any revised sheets noted as revised, UGA location map showing at least one major road or intersection on cover sheet (campus maps are available for download at http://www.architects.uga.edu/maps/current).
      vi. Building key plan with graphic scale and north arrow on each drawing sheet.
      vii. Sheet size preference is Standard Arch D (24x36). Larger sheet size Arch E1 (30x42) or Arch E (36x48) is acceptable only when necessary.
      viii. Font size shall be minimum of 12pt when printed to scale.
      ix. Microsoft Word files shall be 2007 or later.
      x. Electronic file names shall be no longer than 15 characters using only Microsoft acceptable file names and shall be delivered by CD-Rom (s), flash drive, file download, or other acceptable deliverable.
      xi. For projects that do not require BIM, AutoCAD files shall be version 2007 or later and be whole and complete with NO Xrefs to symbols or other drawings.
      xii. Hard copy drawings shall be full size black line on white bond reproductions and be bound. Specifications shall be 8.5”x11” and bound.
   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 (.doc), and Adobe PDF (.pdf) formats. All PDF files shall be searchable.
      iii. Drawings and specifications shall each be submitted as one PDF binder set and as separate files for each drawing sheet/specification section.
iv. Internal UGA Milestone Deliverables: The following chart documents minimum internal UGA deliverable drawing sets for OUA and FMD use in reviewing milestone submissions. All deliverables shall be submitted to the Project Manager, who will then distribute contents to the entities detailed in the chart below.

<table>
<thead>
<tr>
<th>PROJECT STAGE</th>
<th>DELIVERABLES</th>
<th>OUA Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Size Printed Drawing Set</td>
<td>Half Size Printed Drawing Set</td>
</tr>
<tr>
<td>Site Evaluation &amp; Planning Services</td>
<td>1 - For OUA 1 - For FMD 1 - For End-User</td>
<td>1 - For OUA 0 - For FMD 1 - For End-User</td>
</tr>
<tr>
<td>Schematic Design &amp; Design Development</td>
<td>1 - For OUA 1 - For FMD 1 - For End-User</td>
<td>1 - For OUA 0 - For FMD 1 - For End-User</td>
</tr>
<tr>
<td>50% - Construction Documents</td>
<td>1 - For OUA 1 - For FMD 1 - For End-User</td>
<td>1 - For OUA 0 - For FMD 1 - For End-User</td>
</tr>
<tr>
<td>75% - Construction Documents</td>
<td>1 - For OUA 1 - For FMD 1 - For End-User</td>
<td>1 - For OUA 0 - For FMD 1 - For End-User</td>
</tr>
<tr>
<td>95% - Construction Documents</td>
<td>1 - For OUA 1 - For FMD 1 - For End-User</td>
<td>1 - For OUA 0 - For FMD 1 - For End-User</td>
</tr>
<tr>
<td>100% - Construction Documents</td>
<td>1 - For OUA 1 - For FMD 2 - For Fire Safety*</td>
<td>1 - For OUA 0 - For FMD 0 - For Fire Safety*</td>
</tr>
<tr>
<td>Closeout</td>
<td>Refer to 01 78 00 - Closeout Submittals for Closeout</td>
<td></td>
</tr>
</tbody>
</table>

*If project will be permitted through UGA Fire Safety, then two sets are required for UGA Fire Safety. If permitted through State Fire Marshal, then one set is required for UGA Fire Safety.
## DELIVERABLES

<table>
<thead>
<tr>
<th>PROJECT STAGE</th>
<th>FMD Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Size Printed Drawing Set</td>
</tr>
<tr>
<td>Site Evaluation &amp; Planning Services</td>
<td>1 - For FMD 0 - For OUA</td>
</tr>
<tr>
<td>Schematic Design &amp; Design Development</td>
<td>1 - For FMD 0 - For OUA</td>
</tr>
<tr>
<td>50% - Construction Documents</td>
<td>1 - For FMD 0 - For OUA</td>
</tr>
<tr>
<td>75% - Construction Documents</td>
<td>1 - For FMD 0 - For OUA</td>
</tr>
<tr>
<td>95% - Construction Documents</td>
<td>1 - For FMD 0 - For OUA</td>
</tr>
<tr>
<td>100% - Construction Documents</td>
<td>1 - For FMD 0 - For OUA 2 - For Fire Safety*</td>
</tr>
<tr>
<td>Closeout</td>
<td>Refer to 01 78 00 - Closeout Submittals for Closeout</td>
</tr>
</tbody>
</table>

*If project will be permitted through UGA Fire Safety, then two sets are required for UGA Fire Safety. If permitted through State Fire Marshal, then one set is required for UGA Fire Safety.
v. 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.

<table>
<thead>
<tr>
<th>LAYER</th>
<th>DESCRIPTION OF ITEMS</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR-COLUMN</td>
<td>All columns</td>
<td>RED</td>
</tr>
<tr>
<td>AR-COLUMN LINE</td>
<td>All column centerlines</td>
<td>YELLOW</td>
</tr>
<tr>
<td>AR-DOOR</td>
<td>All doors</td>
<td>CYAN</td>
</tr>
<tr>
<td>AR-ELEVATOR</td>
<td>All elevators</td>
<td>GREEN</td>
</tr>
<tr>
<td>AR-FEATURE</td>
<td>Any permanent building feature (built in desk units that define an area, bathroom stalls, auditorium seating, overhang of roof, turn styles, exterior walkways, etc.)</td>
<td>BLUE</td>
</tr>
<tr>
<td>AR-STAIR</td>
<td>All stairs, handrails, and ADA ramps</td>
<td>254</td>
</tr>
<tr>
<td>AR-WALLS</td>
<td>All exterior and interior wall faces</td>
<td>RED</td>
</tr>
<tr>
<td>AR-WINDOW</td>
<td>All windows and store fronts in exterior and interior walls</td>
<td>YELLOW</td>
</tr>
<tr>
<td>AREA</td>
<td>All polylines that define rooms, hallways, or floor</td>
<td>WHITE</td>
</tr>
<tr>
<td>FI-TEXT</td>
<td>All relevant text for room numbers and room use</td>
<td>GREEN</td>
</tr>
</tbody>
</table>
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 authorized representatives. The Contractor shall invite the User, University utilities and infrastructure representatives as suggested by the Owner, Contractor, Contractor’s Sub-contractors 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.
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 emailed to the Project Manager as well as to others requested by the Project Manager.
   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 emailed to the Project Manager as well as to others requested by the Project Manager.
1. **GENERAL**
   
   A. For Construction Manager and Design-Build project delivery methods:
      
      i. The Contractor 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 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 insure that off-gassing is substantially complete prior to occupancy. Refer to 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 Project Manager.
   D. Schedule shall include final in place mock ups 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. 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.
   G. The schedule shall include 80% and 100% fire marshal inspections.
   H. The schedule shall include training which shall be completed prior to Material Completion.
   I. The schedule shall include preparation and review of closeout submittals. Closeout submittals shall be submitted at or prior to Material Completion.
1. **GENERAL**
   
   A. Refer to related sections:
      
      i. 01 31 00.02 – Design Professional Documentation Requirements & Deliverables
      ii. 00 73 00.03 – UGA Special Conditions for Contractor for Construction Manager Project section ‘Submittals’.
      iii. 00 73 00.02 – UGA Special Conditions for Contractor for Design-Bid-Build Project section ‘Submittals’
      iv. 00 73 00.05 – UGA Special Conditions for Design Build Project section ‘Submittals’
      v. 01 78 00 Closeout Submittals
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, chill 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:
      i. University of Georgia Environmental Safety Division, Fire Safety (706) 369-5706
      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:
         a. University of Georgia Environmental Safety Division, Fire Safety (706) 369-5706
         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.
1. GENERAL
   A. Roofing & Hot Work: 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 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 this 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 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. Control Of Combustibles
         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.

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 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 insure 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 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.

iv. Commercial Umbrella Liability Insurance: For General Requirements 1.5.3.5 the umbrella coverage shall be increased to $10,000,000 per Occurrence and $10,000,000 Aggregate.
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 Work 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. Associated costs shall be included in the Contractor Overhead Cost or Base Bid.
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. Smoking
      i. Smoking shall not be allowed in University of Georgia facilities.

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, in effect January 1, 2004.
      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, in effect January 1, 2004.
      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 per 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
1. **GENERAL**

PERMIT REQUIREMENTS- LOCAL SITE DEVELOPMENT PERMITS

1. GENERAL
   A. Related sections:
      i. 01 41 26.02 – Permit Requirements Local Utility Permits
      ii. 01 41 26.03 – Permit Requirements Construction Permits
   B. The Design Professional is responsible for identifying which various reviews and permits related to site development are required and meeting the design requirements of the entity having jurisdiction for the location of the project. The DP shall apply for and submit documents for all applicable permits and make design revisions as required until the permits can be obtained.
   C. Types of local site development permits and reviews may include, but are not limited to:
      i. Land Development / Land-Disturbing Activities (LDA) Permit
      ii. Stormwater Management Review
      iii. Driveway Permit
      iv. Traffic Impact Analysis
      v. Right of Way Encroachment
      vi. Traffic Control Review
      vii. Flood Plain Control Permit
      viii. Activity within Tree Protection Zone
   D. 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.
   E. 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 at the end of this section.
   F. Athens-Clarke County:
      i. Land Disturbance Activities Permit:
         a. The UGA main campus is in Athens, Georgia in Athens-Clarke County. An LDA is required for any activity that removes ground cover and exposes bare soil to erosion when the net disturbance covers one acre or more; or when the disturbance is within 200 feet of state waters such as creeks, streams, rivers, ponds, etc.
      ii. Stormwater Management Permit
         a. The University of Georgia main campus is in Athens, Georgia in Athens-Clarke County. A Stormwater Management Permit is needed for any land development that creates 10,000 square feet or more of impervious cover, or that replaces one acre or more of impervious cover, or that involves other land development activity of one acre or more.
b. The permit is obtained from the Transportation & Public Works Department and requires an application, fees, and a stormwater management plan prepared by a professional engineer or landscape architect licensed in Georgia. The plan must meet Athens-Clarke County requirements, and must be reviewed and approved by the department prior to permit issuance.

iii. Stream Buffer:
   a. The regulation in Athens-Clarke County is that stream buffers are protected for 75 feet on both sides of the stream bank. However, the agreement between the Board of Regents and Athens-Clarke County acknowledges that the stream buffer for a Board of Regents property located within Athens-Clarke County is to be reduced from a 75 feet buffer zone to a 25 feet buffer zone.
1. GENERAL
   A. Related sections:
      i. 01 41 26.01 – Permit Requirements Local Site Development Permits
   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. Types of local utility permits and reviews may include, but are not limited to:
      i. Stormwater Management Review (see section 01 41 26.02 Local Site Development Permit section).
1. **GENERAL**
   A. **Related sections:**
      i. 01 41 26.01 – Permit Requirements – Local Site Development Permits
      ii. 01 41 26.02 – Permit Requirements – Local Utility Permits
   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 variance with the written approval by the Associate Vice President of Facilities Planning.
   E. UGA Fire 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 projects.
      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.
      iii. Conduct field inspections when a project has reached 80% completion and 100% completion and conduct site consultative 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 CM/GC 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.
1. GENERAL
   A. The requirement for a temporary construction trailer varies. Refer to the UGA Special Conditions specific to the project.
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 at as part of the Contractor Overhead Cost or Base Bid. University toilet facilities shall NOT be made available to the Contractor's workforce.
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. The Contractor is 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. The University of Georgia Parking Services may require the purchase of parking permits for parking spaces within the project construction fence if an existing permitted parking lot has been fenced. 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.
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.
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 in or near an area to be planted shall be protected from soil compaction, equipment damage and stock piling 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 bed preparation.
   
   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.
   
   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 or new facility.
   
   **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, stockpile 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 Project Manager.

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 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 Project Manager.

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 Project Manager 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 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’ high chain link fencing. Support posts for chain link fencing shall be metal posts with a minimum of 2” 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 Project Manager.

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 sub-contractor. 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 Project Manager 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 Project Manager.

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 within 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 Project Manager.

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 and Fines

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 fined $500 per day for each day that the Owner and/or Design Professional photographically documents violation(s) of the requirements within this section. Payment of the fine will be received by the Owner through a unilateral deductive change order to the Contractor’s Contract.

iii. 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.

iv. 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.
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. The Owner may elect to include a full color rendering of the project and will provide the approved artwork to the Contractor. The Contractor shall provide a proof to the Owner for review and approval prior to fabrication. The official Project Construction Sign shall include the following information:

   THE UNIVERSITY OF GEORGIA
   The Board of Regents of the University System of Georgia
   Project Name
   (Project Number if it has a BOR number)
   Name of Contractor
   Name of Design Professional
   Administered by the Office of University Architects for Facilities Planning

   B. The Contractor may provide and install signage as required to direct deliveries. No additional Contractor, subcontractors 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, subcontractors, or suppliers.
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 equipment and materials and move them to the site of the Work.
1. GENERAL
   A. The University of Georgia has implemented strict recycling and waste management policies for all waste materials removed from its campus as a result of construction and demolition activity. These materials include:
      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
      v. Cement Fiber Products, including shingles, panels, siding
      vi. Paint
      vii. Glass
      viii. Plastics
      ix. Carpet and Pad
      x. Beverage Containers
      xi. Gypsum Wallboard
      xii. Ceiling Tiles
      xiii. Porcelain Plumbing Fixtures
      xiv. Fluorescent Light Tubes, per EPA regulations
      xv. Green materials (i.e. tree trimmings and land clearing debris)
      xvi. 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.
      xvii. Wood (non-pressure/chemically treated wood) including, clean dimensional wood, pallet wood, plywood, oriented strand board (OSB), particle board.
      xviii. Vinyl composition tile (VCT)
   B. The Contractor is required to account for all waste materials removed from the project, and to recycle, salvage, or reuse, to the maximum practicable extent, all of the materials listed above within 20 miles of the construction site. Upon request, Owner’s Representative will provide assistance to the Contractor in identifying markets for recyclable materials. The Contractor shall make provision as practical for the Owner’s Representative to utilize any recycled materials and processed waste materials on campus. If the Contractor believes that recycling, salvage, or reuse of any of these materials is impracticable, the Contractor must inform Owner before commencement of construction, and secure Owner’s written authorization for an alternative means of disposal.
   C. The Contractor will be required to supply to the Owner on or before the Pre-Construction Meeting a Waste Management Plan which documents procedures to recycle, salvage, or reuse the materials listed above, including 1) separation, hauling and recycling procedures, 2) material recovery facilities and their distance from job site; and 3) markets for each material recovered. This plan must also address training and communications, recordkeeping, and reporting requirements to assure that all waste
materials are accounted for properly. At the Material Completion, the Plan shall be updated and submitted to the Owner’ Representative with the total quantities of each waste material that was reused, salvaged, recycled, or disposed of, and the markets to which these materials were directed, so that it provides documentation in a single source of waste management performance on the project.

D. During construction, the Contractor shall maintain records of a) each type of material removed from the job site (including materials that are not recycled), b) the name(s) of specific end destinations for all materials removed (whether recycled or disposed of), and c) weights or measures of all types of materials removed. Every load of waste material that leaves the site must be documented (including receipts, pictures or tickets from material hauler or recovery facility) and reported to Owner’s Representative on a monthly basis.

E. The Owner 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 Owner.

F. The Contractor shall include administrative and recordkeeping costs associated with Construction and Water Management in the Contractor Overhead Cost and Base Bid. All other associated costs shall be included in the Cost of the Work as part of the Guaranteed Maximum Price.
1. **GENERAL**
   A. Related sections:
      i. 01 78 00 – Closeout Submittals
      ii. 23 25 00 – HVAC Water Treatment
   B. All 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, VSDs, 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.
1. GENERAL
   A. Related sections:
      i. 00 73 00.01 – UGA Special Conditions
      ii. 01 31 00.02 – Design Professional Documentation Requirements & Deliverables
      iii. 01 33 00 – Submittal Procedures
      iv. 01 75 00 – Starting and Adjusting
      v. 09 00 00 – General Finishes Requirements
   B. Included in this section is the sample Contractor & Project Manager Project Close-Out Checklist to be used as a reference for closing out the Project.
   C. At the close of the Project, for a Project not utilizing BIM, the Design Professional shall provide the Project Manager 3 sets of electronic files for both the drawings and specifications that incorporate all change orders and request for information.
   D. At the close of the Project, for a Project that utilized BIM, the Design Professional shall provide to the Project Manager 3 sets of electronic files for both the drawings and specification electronic that incorporate all change orders and request for information. The Design Professional and Contractor (if applicable) shall provide additional electronic files in formats as agreed upon in the BIM Execution Plan.
   E. Electronic Deliverables:
      i. Electronic file names shall be no longer than 15 characters using only Microsoft acceptable file names and shall be delivered by CD-Rom (s), flash drive, file download, or other acceptable deliverable.
      ii. For projects that do not require BIM, AutoCAD files shall be version 2007 or later and be whole and complete with NO Xrefs to symbols or other drawings.
      iii. All drawings and specifications shall be submitted in AutoCAD (.dwg), Revit (.rvt) (depending on if BIM is utilized), Microsoft Word (.doc), and Adobe PDF (.pdf) formats. All PDF files shall be searchable.
      iv. Drawings and specifications shall each be submitted as one PDF binder set and as separate files for each drawing sheet/specification section.
   F. For Closeout Submittals, both the hardcopies and electronic copies shall be organized using the Construction Specifications Institute (CSI) numbering system utilized in the project manual.
   G. O&M Manuals shall include (as applicable to the Project):
      i. Contact List
      ii. Emergency Shut off Plan
      iii. Finish Schedule
      iv. Lamp Schedule
      v. Schedule of all mesh size for all strainers used.
      vi. Factory or authorized agent completed and signed start-up certification documentation for...
      vii. As required by 14 20 00 Elevators
      viii. As required by 14 20 00 Elevators
H. The Contractor shall forward 1 set of closeout submittals to the Design Professional and Project Manager for review. If there is a Commissioning Agent related to the Project, the CxA shall simultaneously be issued a copy for review.

I. The comments generated by the Design Professional, Project Manager, and CxA (if applicable) shall be collected by the Design Professional and consolidated prior to returning to the Contractor for any required revisions.

J. Once the Contractor has addressed any closeout submittal comments, the Contractor shall make the electronic versions and prepare final copies per the Closeout Deliverables table in this section.

K. The Contractor shall provide to the Project Manager for a OUA Project:
   i. Contractor As-Built Construction Documents: 2 Full Size Printed Sets, 1 Half Size Set; 3 electronic files
   ii. Contractor As-Built Project Manual: 2 hard copies, 3 electronic files
   iii. Shop Drawings and Submittals: 1 hard copy; 3 electronic files
   iv. Operations and Maintenance Manuals: 1 hard copy; 3 sets electronic files
   v. Test & Balance Report: 1 hard copy, 3 sets electronic files
   vi. Contractor Training Videos: 3 sets electronic files
   vii. Drawings, specifications, submittals, equipment list, specifically related to data / telecommunications: 1 hard copy; 1 set electronic files
   viii. Drawings, specifications, submittals, equipment list, programming files, specifically related to audio-visual: 1 hard copy; 1 set electronic files

L. The Contractor shall provide to the Project Manager for a FMD Project:
   i. Contractor As-Built Construction Documents: 1 Full Size Printed Sets; 2 electronic files
   ii. Contractor As-Built Project Manual: 1 hard copies, 1 electronic files
   iii. Shop Drawings and Submittals: 1 hard copy; 1 electronic files
   iv. Operations and Maintenance Manuals: 1 hard copy; 1 sets electronic files
   v. Test & Balance Report: 1 hard copy, 1 sets electronic files
   vi. Contractor Training Videos: 1 sets electronic files
   vii. Drawings, specifications, submittals, equipment list, specifically related to data / telecommunications: 1 hard copy; 1 set electronic files
   viii. Drawings, specifications, submittals, equipment list, programming files, specifically related to audio-visual: 1 hard copy; 1 set electronic files
### Contractor & Project Manager Project Close-Out Checklist

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Scheduled Completion</th>
<th>Actual Completion</th>
<th>Copy in Closeout</th>
<th>Comments</th>
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<tbody>
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<td>1</td>
<td>Obtain Certificate of Material Completion</td>
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<td>✓</td>
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<td>2</td>
<td>Identify Start of Warranty Date</td>
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<td>Date:</td>
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<td>3</td>
<td>Verify Final Cleaning Satisfactory</td>
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<td>4</td>
<td>Obtain Operation &amp; Maintenance Manuals (two weeks prior to date of training session)</td>
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<td>5</td>
<td>Obtain Certificate of Final Completion</td>
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<td>6</td>
<td>Obtain Certificate of Occupancy from Fire Marshal</td>
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<td>Obtain Attic Stock</td>
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<td>Transfer of Utilities to UGA:</td>
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<td>Transfer Insurance to UGA</td>
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<td>Sign off on Punch list Completion</td>
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<td>11</td>
<td>Establish Warranty Documentation Log/Procedure</td>
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<td>Sign Roof/Wall Bond</td>
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<td>13</td>
<td>Obtain Keys/Key Cards</td>
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<td>14</td>
<td>Identify Maintenance Agreements</td>
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<td>15</td>
<td>Acceptance of Final Test &amp; Balance Report</td>
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<td>16</td>
<td>Acceptance of Final Commissioning Report</td>
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<td>Obtain As-built Documents;</td>
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<td>Obtain Special Inspection Report</td>
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<td>19</td>
<td>NPDES: Obtain Notice of Termination (NOT)</td>
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<td>20</td>
<td>Training Complete</td>
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<td>21</td>
<td>Obtain Training Videos</td>
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<td>22</td>
<td>Hold Close-out Meeting OUA/PPD for Transfer of Information/Documents</td>
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<td>23</td>
<td>Write Lessons Learned Memo and Modify Procedures Manual Accordingly</td>
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1. **GENERAL**
   
   A. UGA storing less attic stock.
   
   B. Design Professionals shall coordinate with the Project Manager on attic stock.
   
   C. For new and large facilities, Contractor to assist with locating attic stock material in specified room and building.
   
   D. Contractor shall label all attic stock with same nomenclature as in contract documents.
1. **GENERAL**

   **A. Related Sections:**
   
   i. 01 31 00.02 – Design Professional Documentation Requirements & Deliverables

   **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.

   **C. 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.**

   **D. Energy Performance:**
   
   i. The mechanical, electrical, and plumbing energy related design for all buildings shall comply with ASHRAE Standard 90.1 – 2010.
      
      a. Design Professional shall be held accountable for meeting the percentage energy savings.
   
   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.
   
   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).
   
   iv. 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.
      
      b. Design Professional shall not proceed with further development of mechanical systems until Project Manager has provided written approval of which system to incorporate into the project.

   **E. Water Conservation**
   
   i. For new construction, the project shall conserve 20% more water, not including irrigation, than the code requirement for the state of Georgia.

   **F. 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.

   **G. 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

H. Comfort Conditions:

i. Indoor design conditions shall suit the process and user requirements.

ii. For comfort conditions use 74 °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.