

# **Table of Contents & Executive Summary**

## Building Information Modeling & Facilities Management Data (BIM&FM) Requirements

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### ***Section 1 – Strategy and Objectives***

The University has reached clear strategy and objectives leading to the development of BIM&FM requirements; properly understood, project teams will be well informed to meet owner expectations. The BIM&FM Requirements provide direction and best practices to project teams for specification, collection, validation, and ultimately handover of BIM&FM elements to the University. BIM&FM deliverables will contribute to project success, support University project records, and allow for the import of FM data to operational systems. Main project deliverables include: the design intent model, the construction coordination model, and the facilities management data. Teams are not required nor encouraged to embed and maintain FM data in project BIM models.

### ***Section 2 - BIM Execution Plan (BEP)***

Developing and communicating a clear plan for carrying out BIM&FM process is necessary for each project team. The BIM Execution Plan (BEP) section provides an outline and framework for how BIM&FM is to be accomplished at the project level. The overall intent of the BEP is to require project team members to map out how they intend to work together to meet the BIM&FM requirements and BIM functions of the project. This plan outlines items such as: company roles, contact information, AEC team collaboration procedures, information exchange schedules, quality control procedures, etc. All AEC team members must work in coordination to produce a project plan for approval by the Owner BIM Manager. Submitted execution plans enable the owner to better guide and manage teams in accomplishing BIM&FM deliverables. The BEP allows teams to demonstrate how they will comply with the prescriptive requirements as well as the performance based requirements. This leaves room for project delivery teams to impose their own means and methods where prescriptive requirements do not exist. The BEP framework indicates the minimum expected areas for the team to address, and is not a required format in itself. There is no required format for BEP as long as the team can show they have addressed information requested in this section.

### ***Section 3 –BIM&FM Deliverable Criteria***

The Deliverables Criteria is a detailed specification and guide to understanding how project BIM&FM deliverables shall be organized and delivered to the University. This is the most prescriptive part of the BIM&FM requirements due to the unique configuration of information for operational systems. This section outlines what data is to be collected (i.e., what do we need), in what format (i.e., how do we need it delivered), division of responsibility (i.e., who is to collect specific information), and deliverable schedules (i.e., when are the milestone deliverables over the project’s duration). Also provided here is a sample FM data deliverable for project reference. Two sets of appendices are included in this section; one set pertains to Residential Life (RL) projects and the other for all other (non RL) projects.

## **E.1 - Section 1: Strategy and Objectives**

### ***Explanation of the BIM Strategy and Objectives***

The intent of these requirements is not to add unreasonable scope upon individual project team members, but rather to provide a method and format for capturing useful project information that is already being managed throughout the planning, design, construction, and commissioning phases. In some cases, project team members will realize efficiencies by following these guidelines and having a consistent project repository of facility data and associated documents. For other team members that already use a thorough system for tracking project spaces, equipment, and documents, this guideline will have little impact upon their current project workflows other than to specify the owner's requirements. By investing in the development of this process, the University will be able to contract for these requirements in the course of the normal project delivery process, reduce change orders, reduce rework, and allow project team members the opportunity to align their project delivery processes and data management processes in advance of the performance of work. This alignment is intended to eliminate rework situations and streamline the project delivery process for digital data and documents for handover and integration into the owner's operations and maintenance systems.

### ***Description of Existing Infrastructure and other Operational Interfaces***

The University currently uses 360 by FAMIS (at Facilities) and School Dude (Residential Life) as its computerized maintenance management systems (CMMS). 360 & School Dude supports the import of FM Data spreadsheet files. Both 360 & School Dude have clear rules for structuring data in their respective systems. The BIM&FM requirements were created with each interfaces' rules in mind and, when followed correctly, will ensure project teams have built the FM Data spreadsheet in a manner that enables a seamless import by the owner into operational systems.

The University anticipates using 3D models as a tool in facilities management. By requiring project teams to coordinate and share building models, allowance is made for immediate and future needs of the university. Therefore, all 3D Facilities Models (i.e., models from the AE (design intent) and the CM (construction coordination)) shall be provided in specified format and not in any other proprietary or subscription based software. Additional requirements can be found in the BIM&FM deliverable criteria section.

### ***Explanation of University Expectations***

The University expects that all large scale projects will use the current BIM&FM requirements and produce the deliverables outlined. However, the Director of Facilities Management will determine expectations in regard to these requirements on projects under five million (\$5M) dollars.

The BIM&FM specifications are an evolving guideline. However, a specific set of requirements does apply to this contract per the identified Exhibit. With each new building, this specification may require the attention of the Owner BIM Manager to ensure current requirements are appropriate and/or are updated for additional scope that was unforeseen at the writing of the current publication. This updating process will continue to "build-out" and enhance the overall specifications in a way that creates a more robust specification based upon project scopes and building/project types at the University. The current specifications have been formulated to capture as much institutional information as possible based on previous projects. Thus, these requirements are likely to evolve with lessons learned, future technologies emerge, and operational workflow changes over time. However, future changes must be evaluated by the University in light of how FM work is done and how project information is received.

BIM&FM deliverables that the project team will be required to support include: 1) record set 3D design intent model by the Architect, 2) 3D construction coordination models with associated native files by the Contractor, and 3) FM data spreadsheet with associated digital documents by the Architect and Contractor. Specific information regarding responsibility and accountability are detailed in other sections of this specification. However, some of the general expectations associated with FM data include but are not limited to the following: 1) the A/E in the design phase will be expected to provide square footage information, equipment locations, scheduled equipment design information, and associated drawings 2) the construction contractor will be responsible for providing equipment manufacturer, model, asset attribute information, and associated documents as the submittal process is completed. Also, the construction contractor will be expected during construction to assign documents (drawings, submittals, O&M's, and others) and serial numbers to equipment. It is important to understand that teams are not required nor encouraged to embed and maintain FM data in project BIM models.

BIM&FM project deliverable details will be documented in the BIM Execution Plan (BEP) for each team member and confirmed by the approval of the Owner BIM Manager. BEP revisions may be required as team members are added and as the overall plan evolves for the project team members. The BIM Execution Plan (BEP) will outline and document the project specific processes to be employed and will provide a mechanism for owner review and approval of the BIM&FM deliverables via submittals for review and approval by the Owner BIM Manager. The Owner BIM Manager will manage the overall BIM&FM process and perform project archival and recording procedures, such as importing FM data and documents to the asset management systems.

The process does not require each project delivery team member to be a 3D modeling subject matter expert, an FM data subject matter expert, or produce information that the project team doesn't already manage. In this manner, additional services are not expected from the project delivery team members because the University is not asking for new deliverables but rather, the same information in a modified format in advance of contracting and work production to eliminate the occurrence of rework.

## **Section 2 - BIM Execution Plan (BEP)**

### ***Owner Expectations***

The expected deliverable resulting from this section is a project specific plan on how the BIM&FM requirements and deliverables will be accomplished. The AEC team shall submit a plan to the Owner BIM Manager conforming to the requirements set forth in this section and other parts of the BIM specifications. The intent is for the BIM Execution Plan (BEP) to clearly identify how the project team members will comply with the BIM&FM Data requirements as well as how they will cooperate and coordinate with the other team members in a BIM process and work flow.

The submittal process is employed to allow team members to respond to the requirements on two main fronts. First, the BIM&FM requirements have certain aspects that are prescriptive. That is, the University requires certain elements of the requirements in a particular content, format, and timeframe from specific team members. See the Deliverable Criteria section for further details. Secondly, the BIM&FM requirements have certain aspects that are performance based. That is, the owner requires certain outcomes and results to be achieved. However, the owner does not want to impose means and methods of deliverables. Thus, the team member, for these elements of the BEP, is allowed to propose and describe their plan, approach, and means/methods for achieving the requirements and desired outcome. This is intended to provide reasonable flexibility for the team members in order to allow for workflow and deliverable production efficiency when and where an owner's need for a prescriptive requirement does not exist.

The following outline is a "framework" only and the team members are encouraged to add additional sections and subsections to the plan as needed, or even use your own format of BEP (as long as the information in this section is addressed). The framework below is intended to communicate the minimum content required. We recognize that many project delivery team members have prepared and executed multiple BEP's in the past. We also expect that lessons learned from previous projects be incorporated into your project BEP, so please do not limit the BEP contents to what is addressed in this section alone.

Team members are encouraged to add information to the extent needed to clearly communicate their implementation intent and plans. Several different BEP formats have been developed in the industry and this specification and framework is not intended to be a limiting factor nor a specific format in the team members' efforts to communicate their plans. As the BEP is incrementally developed by the team members, additional details and clarifications are expected to be required to clarify how team members will interact and deliver on the entire set of requirements. It is expected that the BEP will have multiple revisions as the team iterates to a completed project and meets the overall requirements. The intent is also to eliminate rework on elements of the BEP that are approved. Team members are expected to consider downstream team members in the process and take every reasonable measure to minimize and eliminate rework. The Owner BIM Manager will assist in this determination and will be the primary party representing the owner in the BEP approval process.

## Section A: Project Information

### Project Data

1. Project Owner:
2. Project Name:
3. Project Location & Address:
4. Contract Type/Delivery Method:
5. Concise Project Description: [number of facilities, general size, etc.]
6. Additional Project Information: [unique BIM project characteristics and requirements]
7. Project / Contract Numbers: [Contract Number, Task Order, Project Number, etc.]
8. Project Schedule / Phases / Milestones: [include BIM milestones, pre-design activities, major design reviews, stakeholder reviews, and other major events which occur during project lifecycle]

### Project Schedule

Project Phase / Milestone	Estimated Start Date	Estimated Completion Date	Project Stakeholders Involved
X% Schematic Design			
X% Design Development			
X% Construction Documents			
Buy-out			
Submittals			
Install			
Close-Out			
Handover			

### Key Project Contacts

List of lead BIM contacts for each organization on the project.

Role	Organization	Contact Name	Location	E-Mail	Phone
Project Manager(s)					
BIM Manager(s)					
Discipline Leads					
Other Project Roles					

## ***Section B: Project Goals***

### **Acknowledgment of BIM&FM Data Requirements**

1. Identify Major BIM&FM Data Goals / Objectives: [state major BIM & FM data goals, actions to implement, evidence the goal has been achieved, and participants involved]

## ***Section C: BIM Uses***

### **Acknowledgment of BIM&FM Data Requirements**

1. Identify Major BIM uses on the project: [state major BIM use cases & their author]
2. Identify project assets: [see 'Asset Group Requirements' and indicate project assets]
3. Identify elements to be modeled and the responsible party to model such elements in an LOD Matrix
4. Identify other areas of particular interest in BIM that require clarity: [origin point, scale, model maintenance, other CAD/BIM Guidelines applicable, etc.]

## ***Section D: BIM Use Staffing***

### **Organizational Roles / Staffing**

1. BIM&FM Roles and Responsibility:
2. BIM Use Staffing: [for each BIM&FM use selected, identify the team within the organization(s) who will staff and manage that use and estimate the personal time required. This helps the owner understand the level of effort (i.e., staffing plan) expected by the team members in delivery of the requirements.

BIM&FM Use	Organization	Number of Total Staff for Use	Estimated Worker Hours	Location(s)	Lead Contact
Design Intent Model					
Construction Coordination Model					
Design FM Data					
Construction FM Data					

## Section E: Collaboration Procedures

1. Collaboration Strategy: [describe how the project team will collaborate. Include items such as communication methods, document management and transfer, file naming structure, and record storage, etc.]
2. Meeting Procedures: [the following are examples that should be considered]

Meeting Type	Project Stage	Frequency	Participants	Location
BIM&FM Requirements Kick-Off				
BIM&FM Execution Plan				
Design Intent Model Coordination Reviews				
Design FM Data Review				
Construction Coordination Model Reviews				
Construction FM Data Reviews				
Other BIM meetings that occur with multiple parties				

3. BIM&FM Delivery Schedule of Information Exchanges for Submission & Approval: [document the exchange of FM Data and Model data that occurs during the project:]

Information Exchange	File Sender	File Receiver	One-Time or Frequency	Due Date or Start Date	Native File Type
Design Intent Models					
Design FM Data					
Construction Coordination Models					
Construction FM Data					

## ***Section F: Process for Data Verification – QA/QC***

1. Overall Strategy for Quality Control: [describe the strategy to control the quality of the data and model delivered]
2. Quality Control Checks:[the following check should be performed to assure quality]

Checks	Definition	Responsible Party / Parties	Software Program(s)	Frequency
Visual Check Design Intent Model	Ensure that the model has not excluded LOD items and requirements have been followed			
Visual Check Construction Coordination Model	Ensure that the model has not excluded LOD items and requirements have been followed			
Standards Check	Ensure that the BIM&FM Format Requirements have been followed (naming standards, all data points collected, etc.)	Owner BIM Manager		
Accuracy	Ensure that all Facilities Data provided is 100% accurate			

## ***Section G: Technological Infrastructure Needs***

1. Software [List software that FM data and Model will be created and maintained in]
2. Modeling Content (conforming to Asset Group Requirements)



## ***Section H: Project Deliverables***

1. List the BIM&FM deliverables for the project and the delivery format

BIM&FM Submittal Item	Stage	Approximate Due Date	Format	Notes
Design Intent Model				
Design FM Data				
Construction Coordination Model				
Construction FM Data				
Docs Associated with FM Data				

## ***Section J: Process for Data Collection***

1. (CM) Describe methods for collecting Construction FM Data during the project and how the team member intends to coordinate and collaborate with the Owner BIM Manager.

## ***Section K: Field Coordination***

1. (CM) Describe methods to be used for managing field coordination during the project and how the Contractor intends to coordinate and collaborate with subcontractors and their models in field installation.
2. (CM) Attach documents intended for use in guiding coordination efforts. Guidelines should be at a minimum to the detail of BIM Forum MEP Spatial Coordination Requirements for BIM and have 1inch and above conduit modeled.

## ***Section L: Update of the BEP***

1. Provide Plan for revising BIM Execution Plan at major milestones.

## ***Section M: Attachments***

These BIM&FM attachments to the project BEP are critical parts of the BEP for team consideration and planning during the development and update of the BEP.

- Section 3, Appendix A – Responsibility Matrix
- Section 3, Appendix B – Asset Group Requirements

Coordinate the BEP development with all parts of the Deliverable Criteria section.

## **Section 3 – BIM&FM Deliverable Criteria**

### **FM Data Criteria**

The University has various groups that operate and maintain the campus, such as Facilities and Residence Life (RL). These groups require specific facility information (FM Data) to inform their operations and maintenance functions. The intent of this criteria section is to have projects produce deliverables (FM data spreadsheets and related documents) that will be used by the owner to import / upload to operational systems. This section will specify the content, format, schedule, and responsibility related to the FM Deliverables. These requirements do not replace nor lessen requests for facilities information or documents in other sections of University specifications or contract requirements.

#### **Accuracy and Tolerances:**

At any time during the project where the FM data errors grow to a point above 10% of the entire data set, the owner reserves the right to take appropriate corrective action such as having another party finish the BIM&FM deliverables at the expense of the responsible party in error. The Owner BIM Manager role is to take preliminary steps to preclude this action. However, if timely completion of the FM data process is delayed by an unreasonable amount of time, the owner may direct such corrective actions be taken.

#### **RL Projects**

It is important to note that RL projects will produce a different FM Data Spreadsheet than projects not working with RL, as can be seen below.

- Projects not involving RL should use: Section 3, Appendix A - C
- Projects for RL should replace the above stated Appendices with: Section 3, Appendix A – C (RL)

#### **Section 3, Appendix A – Responsibility Matrix**

This appendix describes what data fields are required on facilities data, who is responsible for providing the information, general format for data fields, and an approximate schedule.

#### **Section 3, Appendix B – Asset Group Requirements**

This appendix describes what assets are required to collect facilities data on and their associated attributes / specific data fields. If the asset group indicated in this appendix is represented on the project, it should be included in the FM Data Spreadsheet.

#### **Section 3, Appendix C – FM Data Spreadsheet**

This appendix provides a sample for teams to better understand what is expected for the FM Data Spreadsheet. Every project will have unique assets in the FM Data, however, this sample should help teams ‘begin with the end in mind’.

## **BIM Model Criteria**

The intent of this section is to include the minimum criteria for 3D models as they relate to the BIM Deliverables. This section does not replace or lessen modeling criteria in other sections of University specifications or contract requirements related to other BIM expectations.

### ***Design Intent Model***

The Architect shall engage in 3D modeling with their consultants to produce a coordinated design intent model to be used in the production of construction drawings. Requirements pertaining to software, minimum LODs, integration with construction activities and updates are purposely ignored in this document to allow the team to best decide what is most appropriate for their project. However, the University expects the project team to document all necessary decisions and plans in the project BIM Execution Plan and be able to justify decisions with industry best practices and personal experience.

The Architect shall provide design intent models that includes the following design disciplines: Architectural, Structural, Mechanical, Plumbing, and Electrical. A three-dimensional Civil model shall be provided for all building tie in locations (at the very least). Other design disciplines and consultants are required to provide working design authoring files as well.

One version of design intent files shall be in the native format saved from the design software it was created in (ex: Revit, ArchiCAD, etc.). The other version shall be an interoperable / sharing formats from the design software it was created in. Examples of interoperable formats include: IFC, LandXML, gbXML, DWG, ASCII, etc. The intent for interoperable formats is to allow opportunities for integration in future design work, allowing for record update with redesigns.

The design intent model files shall be provided at project closeout, with an as-built LOD matrix. The design intent model files shall also be made available to the Contractor for use in Construction Coordination efforts at their request.

### ***Construction Coordination Model***

The Contractor shall engage in 3D modeling with their trades / sub-contractors to produce a construction coordination model to be used to direct field installation. Guidelines for what should be modeled shall be at a minimum to the detail described in the 2009 issuance of BIM Forum's MEP Spatial Coordination Requirements for BIM while also having all conduit 1 inch and above modeled. The University expects the contractor to document all necessary decisions and plans for construction coordination in the project BIM Execution Plan and be able to justify decisions with industry best practices and personal experience.

The construction coordination model shall be provided in re-savable NWD formats at multiple times before close-out (per the BIM Execution Plan) and at substantial completion of the project. One version of the NWD provided model shall be the final model per the field coordination effort. The second version of the NWD model shall be optimized for Facilities Management use. Optimization shall allow for easy navigation and viewing of assets. Particular optimization shall include, ceilings at fifty percent transparency and the hiding of all doors and access block outs. Also included, shall be the unique color-

coding of all building systems (electrical, chilled water, heating water, domestic water, etc.) per the current University coloring schema, seen below.

Native files that support the coordinated model shall also be provided with NWD files. These files are the model instances that build the federated coordination models. One version shall be the native files saved from the trade software it was created in. The other version shall be the interoperable / sharing formats from the trade software it was created in. Examples of interoperable formats include: IFC, LandXML, gbXML, DWG, ASCII, etc. The intent for trade files and interoperable formats is to allow opportunities for integration in future design work, allowing for record update with field changes, and much more. There is no color-coding schema required with trade model files.

Each component in the FM Data spreadsheet shall have an associated object in the model and a minimum of one saved viewpoint in the model. Exception to this rule shall be all building level / group assets (seating, faucets, drains, etc.), fire alarm devices, and BAS devices. Objects in the model shall be named according to equipment tags seen in the construction drawings and that of the FM data; these three areas (model, drawings, FM data) shall all match equipment names.

#### UNIVERSITY COLOR SCHEMA

Selection Set	Color / RGB	Selection Set	Color / RGB
Lighting	Yellow - 255;255;0	Electrical	Orange - 255;127;0
HVAC Equipment	Magenta - 255;0;255	HVAC Exhaust	Dark Green - 0;100;0
HVAC Supply Duct	Purple - 148;0;211	HVAC Return	Light Purple - 171;130;255
Chilled Water Supply	Blue - 0;0;205	Chilled Water Return	Light Blue - 176;226;255
Ceilings	White - 255;255;240	Framing	Purple - 147;112;219
Steel	Maroon - 176;48;96	Concrete	Grey - 190;190;190
Sanitary	Black - 0;0;0	Storm Drain / Rain Water	Peach - 255;218;185
Domestic Water	Turquoise - 64;224;208	Domestic Hot Water	Teal - 0;128;128
Condenser Water Supply	Green - 0;205;0	Condenser Water Return	Light Green - 152;251;152
Fire Protection	Red - 255;0;0	Gas	Gold - 255;185;15
O&M Clearance	Peach- 255;218;185		

# Close-Out Procedures

## ***End User Review & Acceptance***

Test imports of the FM data and documents may be performed leading up to final acceptance and review. However, once the FM Data file has been successfully test imported into 360, the Owner shall notify each end user to review assets identified as belonging to their respective department (organization). Areas of particular interest in review shall include those items that are shared between multiple end users/departments; ex: large site utility valves should be reviewed by both Facilities Plumbing and Utilities Water Distribution. This review exercise will ensure that all assets are accepted and are being maintained after handover. This also provides the owner's personnel an opportunity to become familiar with the new assets being added to their stewardship and to establish preventive maintenance (PM) procedures and/or to apply standing PM's to these newly uploaded assets.

Following successful import of FM data, each end user shall have thirty (30) calendar days to review assets and schedule a meeting with the Owner BIM Manager and Owner to address any concerns and/or corrective actions that may be needed. If data concerns/issues have not been provided in writing to the Owner BIM Manager within this 30 day period, acceptance by the end user shall be considered to be confirmed. The Owner BIM Manager will be responsible to develop and submit a schedule to the Owner for how end user concerns (if any) will be resolved.

## ***Owner Review and Acceptance***

The Owner BIM Manager is responsible to review and provide final comments for the BIM&FM Deliverables to address with AEC team. If no comments have been received by the Owner within forty-five (45) calendar days of end user acceptance AND completion of final punch list items, Owner acceptance shall be assumed. This process should generally follow overall project substantial and final completion to ensure that all team members remain engaged in the FM data process.

## ***AEC Team Final Handover***

Per the BIM Execution Plan, regularly scheduled BIM&FM deliverable submissions will be reviewed and reported on by the Owner BIM Manager at the agreed upon review intervals.

At the final scheduled FM Data report, the Owner BIM Manager shall provide the AEC team and Owner Project Manager a final punch list to address all outstanding items in the FM data to be corrected. If all outstanding items have not been completed within the subsequent twenty-one (21) calendar days, the owner may elect to take reasonable corrective actions as outlined in other parts of these specifications.

## ***Final Handover Deliverables Include (but may not be limited to):***

1. FM Data spreadsheet file (latest approved version) along with all documents in one folder.
2. Record Set Design Intent Model (native files and interoperable formats)
3. Construction Coordination Model (including all native files/models and federated NWD files)

Section 3, Appendix A - Responsibility Matrix		Architect will be responsible to provide information for all green cells indicated with "X" per Section 3 (FM Data Requirements). See below for scheduled delivery milestone.		Contractor will be responsible to provide information for all orange cells indicated with "X" per Section 3 (FM Data Requirements). See below for scheduled delivery milestone.			
		(100% Design) Design Development	(100% Design) Construction Document	Submittals	Install	Close Out	
		Architect / Engineer	Architect / Engineer	Contractor	Contractor	Contractor	
<b>Space</b>							
	Name	x					Provide a unique "space" name. This field will be the room numbers indicated on the final way finding. For exterior spaces, provide location in reference to the building name (ex: 999-South, 999-East, 999-North, 999-West)
	Floor	x					Provide the floor that the space is located on.
	Category		x				Note: Space categories will be confirmed by Owner and chosen from Texas Higher Education Coordinating Board (THECB) space use codes. For list of space code obtain latest approved list from the THECB. At the writing of this document, the latest list could be obtained from the link below (page 71): <a href="http://www.thecb.state.tx.us/reports/PDF/2520.PDF?CFID=10580093&amp;CFTOKEN=21211486">http://www.thecb.state.tx.us/reports/PDF/2520.PDF?CFID=10580093&amp;CFTOKEN=21211486</a>
	SF		x				Provide usable Square Footage in each space, which shall be measured from edge of finish wall to edge of finish wall. This unit of measure is "square feet". Use decimal format to two places (i.e., one hundred fifty six square feet would be 156.00).
	Ceiling Height		x				Provide the ceiling height for the room. This unit of measure is "feet". Use decimal format (i.e., 10 feet 6 inches of height would be 10.5, and 8 feet 4 inches of height would be 8.33).
	Description	x					Provide space description, as applicable. Note: IF way finding space name differs from name on construction document then following the space description, provide the space name as indicated on the contract documents / drawing which shall be used with ": PLAN-" proceeding. (ex: "Mens Restroom : PLAN-104")
	Drawings		x				Provide the corresponding Architectural, Mechanical, Electrical, and Plumbing floorplan documents
<b>Contact (Manufacturer &amp; Installer)</b>							
	Company Name			x			Provide the name of the company is manufacturing or installing equipment. Note: Use owner-provided vendor names
	Phone Number			x			Provide the contact's phone number or a main company phone number. Format in the United States shall be 123-456-7890. For international phone numbers, include the international exchange, as applicable, before the local number.
	Website			x			Provide the website URL of the Manufacturer or Installer
	Email			x			Provide the contact email of the Manufacturer or Installer
	Description			x			Provide a description of the Manufacturer or Installer
<b>Equipment</b>							
	Name	x					Provide the name of the equipment that matches the drawings. If no name is provided on the drawings follow the naming standard below. <b>SEE NOTE 2</b>
	Location	x					Provide the name of the space the equipment is located in.
	Asset Group	x					Provide the category of the piece of equipment.
	Description	x					Provide a brief description of the equipment. If the equipment is located in a large common area provide a location descriptor too. Example: south east smoke detector
	Manufacturer			x			Provide the manufacturer who is responsible for this piece of equipment.
	Installer			x			Provide the installer who is responsible for this piece of equipment.
	Model			x			Provide the model number. NOTE: Model number is not necessary for Asset Groups that are marked "Group". See Asset Group Requirement for more details.
	Warrenty Term			x			Provide the warranty duration in years for the product
	Life Expectancy			x			Provide the life expectancy in years. NOTE: life expectancy is not necessary for Asset Groups that are marked "Group". See Asset Group Requirement for more details.
	Original Cost			x			Provide the approximate original cost of the asset. NOTE: original cost is not necessary for Asset Groups that are marked "Group". See Asset Group Requirement for more details.
	Serial				x		Provide the Serial number. NOTE: Serial number is not necessary for Asset Groups that are marked "Group". See Asset Group Requirement for more details.
	Barcode				x		Provide the Barcode. NOTE: Barcode is not necessary for Asset Groups that are marked "Group". See Asset Group Requirement for more details.
	Submittals			x			Attach the PDF submittal document.
	O&M Files					x	Attach the PDF Operations & Maintenance document.
	Cx Files					x	Attach the PDF Commissioning document.
	Attributes				x		Only provide the below fields on equipment as noted in Asset Group Requirements
	Parent/Child		x				Provide relationships within HVAC Equipment and Electrical Panels. Example: AHU-1 is the parent of VAV-1-4, and 4PHR panel is the child of 2DHL panel
	Support Locations		x				Provide the spaces that HVAC assets serve. Example VAV-1-4 supports space 105

**\*Note 1: Equipment Naming****Mechanical, Electrical, and Plumbing Components**

All MEP equipment's names shall match the names on the drawings.  
All equipment (ex: valves) that have a unique name and/or is tagged (i.e., labeled or brass tagged) shall be named consistently.

**Scientific Equipment****Naming Standard:**

Equipment Name-A-B-C

**Where:**

Name = Short general name of equipment

A = Equipment code that matches the specifications

B = Space name

C = Modifier to identify multiples of the same device in the same room. (a,b,c,d,etc.)

**Security Components**

Description	Device Function	Naming Standard
Camera	Monitoring/Input	Sec-Camera-B
Card Reader	Access/Input	Sec-CR-B
Emergency Phone	Monitoring/Input	Sec-Phone-B
Door Contact	Access/Input	Sec-Pos-B

**Where:**

B = Space name identified in Tab 4 (Space) Column A

For multiple components in one Space, coordinate with Security Staff and include information Column F (Description) as need

**Examples:**

Sec-CR-1001	
Sec-Camera-B	
Sec-Pos-1001	
Sec-Panel-1001	
Sec-Phone-B	ALSO NOTE THAT THIS PHONE APPLIES TO A SECURITY OBJECT AND NOT A REGURAL OFFICE PHONE.

**Valve Components**

All brass tagged valves 1 inch and above and any isolation valves of specialty systems which are

Description	Isolation Level & Area	System	Naming Standard
1" Hot water	Level 2 - North	Hot Water	HVAC-VLV-A-B-C-D-E
4" Chilled Water	Level 1 - South	Chilled Water	HVAC-VLV-A-B-C-D-E

**Where:**

A = Abbreviation for the system served by the valve (HVAC, Fire, etc.)

B = Sub-System Type (HWS&R and CHS&R)

C = Unique Identifier (A, B, C, etc. for multiple components in same space)

Description	Isolation Level & Area	System	Naming Standard
1" Hot water	Level 2 - North	Hot Water	HVAC-VLV-HWS-A
4" Chilled Water	Level 1 - South	Chilled Water	HVAC-VLV-CHR-A

## Section 3, Appendix B - Asset Group Requirements

System	Asset Group	Description	Asset Type	Comments
ACCESS	DOOR POSITION SWITCH	Door Position Switch	Group	One Per Building
ACCESS	EXT RDR	Exterior Card Reader		
ACCESS	EXTERIOR DOORS, KEYED	Exterior Doors		
ACCESS	INT RDR	Interior Card Reader		
ACCESS	LOCK	Locks	Group	One Per Building
ACCESS	LOCKBOX	Lock box		
ACCESS	OPENER	Door Opener/Closer		
ACCESS	SPECIAL ACTION DOORS	Special Action Doors		
ALL	MANHOLE	Manhole		
ALL	METER	Meter (WAGES)		
ALL	TANKS	Tanks		
ARCHITECTURAL	CABINET	Cabinetry		
ARCHITECTURAL	CEILINGS	Ceilings	Group	One Per Building
ARCHITECTURAL	EXT WALLS	Exterior Walls	Group	One Per Building
ARCHITECTURAL	FIXED PARTITIONS	Fixed Partitions		
ARCHITECTURAL	FIXED SEATING	Fixed Seating	Group	One Per Building
ARCHITECTURAL	FLOORS	Architectural Floors	Group	One Per Building
ARCHITECTURAL	INT WALLS	Interior Walls	Group	One Per Building
ARCHITECTURAL	MISC ARCHITECTURAL	Misc Architectural		
ARCHITECTURAL	OPERABLE PARTITIONS	Operable Partitions		
ARCHITECTURAL	ROOF	Insulated Metal Deck Roof		
ARCHITECTURAL	WINDOW COVERING	Window Coverings	Group	One Per Building
ARCHITECTURAL	WINDOWS	Exterior Windows	Group	One Per Building
CONVEYING	ELEVATOR	Elevator		
CONVEYING	HOISTS & CRANES	Hoists & Cranes		
CONVEYING	LIFTS	Lifts		
EH&S	ESCAPE PPE	Escape Ppe		
EH&S	FIRST AID DEVICES	First Aid Devices		
EH&S	SPILL EQUIPMENT	Spill Equipment		
ELEC	AUTOMATIC TRANSFER SWITCH	Automatic Transfer Switch		
ELEC	BATTERY SYSTEMS	Battery Systems		
ELEC	BUILDING GROUNDING SYSTEMS	Facility Electrical Grounding System	Group	One Per Building
ELEC	DP	Main Distribution Panel		DISTRIBUTION PANEL
ELEC	EQUIPMENT DISCONNECTS	Equipment Disconnects	Group	One Per Building
ELEC	EXIT LIGHT	Exit Lights	Group	One Per Building
ELEC	EXTERIOR LIGHT FIXTURES	Exterior Building Lights	Group	One Per Building
ELEC	GENERATOR	Generator		
ELEC	HV SWITCH	High Voltage Switch		
ELEC	INTERIOR LIGHT FIXTURES	Interior Building Lights	Group	One Per Building
ELEC	LC	Lighting Control		LOAD CENTER
ELEC	LIGHTING CONTROL EQUIPMENT	Dimmers, Occupancy Sensors, Light Sensonsr, etc.		
ELEC	LIGHTNING PROTECTION	Lightning Protection	Group	One Per Building
ELEC	MCC	Motor Control Center		MOTOR CONTROL CENTER
ELEC	MDP	Main Distribution Panel		MAIN DISTRIBUTION PANEL
ELEC	MOTOR	Motors		
ELEC	PKL LIGHT	Parking Lot Light	Group	One Per Building
ELEC	POWER EQUIPMENT	Power Equipment		
ELEC	PULL BOX	Pull Box		SITE DUCT BANK PULLS
ELEC	SOLAR/PV EQUIPMENT	Solar/PV Equipment	Group	One Per Building
ELEC	SURGE PROTECTORS	Surge Protection Device		
ELEC	UPS SYSTEM	Ups System		
ELEC	XFMR	Transformer		TRANSFORMER
EMERGENCY	DEFIBRILLATOR	Defibrillator		
EMERGENCY	EMG LIGHT	Emergency Lights	Group	One Per Building
EMERGENCY	EMG PHONE	Emergency Phone		



EMERGENCY	EYEWASH	Eyewash		
EMERGENCY	FIRST AID	First Aid		
EMERGENCY	FUME HOOD	Fume Hood		
EMERGENCY	MISC EMERGENCY EQUIPMENT	Misc Emergency Equipment		
EMERGENCY	SF SHOWER	Safety Shower		
FIRE ALARM	ANNUNCIATORS	Fire Alarm Annunciator Panel		
FIRE ALARM	DAMPERS	Dampers		
FIRE ALARM	FIRE ALARM DEVICES	Fire Alarm		INDICATING DEVICES
FIRE ALARM	FIRE ALARM PANEL	Fire Alarm Control Panel		
FIRE ALARM	FIRE INITIATING DEVICES	Fire Alarm Pull Station		
FIRE SUPPRESSION	FIRE DEPARTMENT CONNECTIONS	Fire Department Connections		
FIRE SUPPRESSION	FIRE EXTINGUISHERS	Fire Extinguishers		
FIRE SUPPRESSION	FIRE HYDRANTS	Fire Hydrants		
FIRE SUPPRESSION	FIRE SUPPRESSION SYSTEM	Fire Suppression System	Group	One Per Building
FIRE SUPPRESSION	SPRINKLERS	Fire Suppression Sprinklers	Group	One Per Building
FOOD SERVICE	APPLIANCE	Appliance		
FOOD SERVICE	COLD TABLE	Cold Table		
FOOD SERVICE	CONVEYER	Conveyer		
FOOD SERVICE	COOK TOP	Cook Top		
FOOD SERVICE	COOLER	Cooler		
FOOD SERVICE	FREEZER	Freezer		
FOOD SERVICE	ICE MAKER	Ice Maker		
FOOD SERVICE	MISC	Misc Food Service		
FOOD SERVICE	OVEN	Oven		
FOOD SERVICE	VENT HOOD	Vent Hood		
FOOD SERVICE	WASH STATIONS	Wash Stations		
HVAC	AHU	Air Handling Unit		
HVAC	AIR VALVE	Air Valves		
HVAC	ATU	Air Terminal Unit		AIR TERMINAL UNIT
HVAC	BOILERS	Boiler		
HVAC	CHILLERS	Chillers		
HVAC	COMPRESSORS	Compressors		
HVAC	CONTROL DEVICES	Control Device		
HVAC	CONTROLLER	Pump Controller		
HVAC	COOLING TOWER	Cooling Tower		
HVAC	DHUM	Dehumidifier		DEHUMIDIFIER
HVAC	DXU	Direct Expansion Unit		DIRECT EXPANSION UNIT
HVAC	ERU	Energy Recovery Unit		
HVAC	FAN	Fan		
HVAC	FCU	Fan Coil Unit		
HVAC	FILTERS	Filters	Group	One Per Building
HVAC	GRILLS	HVAC Grills	Group	One Per Building
HVAC	HEAT EXCHANGERS	Heat Exchangers		
HVAC	HEATERS	Heaters		
HVAC	HUMIDIFIER	Humidifier		
HVAC	OAHU	Outside Air Handling Unit		OUTSIDE AIR HANDLING UNIT
HVAC	PKG UNIT	Pkg Unit AC		
HVAC	PUMP	Pump		
HVAC	SENSORS	Thermostats		
HVAC	SEPERATORS	Separators		
HVAC	STRAINER	Strainers		
HVAC	UNIT HEATER	Unit Heater		
HVAC	VFD	Variable Frequency Drive		VARIABLE FAN DRIVE
HVAC	WATER VALVES	Valves		
IRRIGATION	HAND BOXES	Hand Boxes		
IRRIGATION	IRRIGATION SYSTEM	Irrigation System	Group	One Per Building
PLUMB	CLEAN OUT	Clean Out	Group	One Per Building
PLUMB	DISPOSAL	Disposal		

PLUMB	DRAIN	Facility Drains	Group	One Per Building
PLUMB	FAUCETS	Sink Faucets	Group	One Per Building
PLUMB	FLUSH VALVES	Plumbing Flush Valves	Group	one per building
PLUMB	PURIFIERS	Purifiers		
PLUMB	RPZ	Backflow Preventer		PRESSURE REDUCING VALVE
PLUMB	SINKS	Sinks	Group	One Per Building
PLUMB	TRAPS	Plumbing Traps		
PLUMB	URINALS	Urinals	Group	One Per Building
PLUMB	WATER CLOSET	Toilets	Group	One Per Building
PLUMB	WATER FOUNTAIN	Water Fountain		
PLUMB	WATER HEATER	Water Heater		
RESEARCH	ANIMAL EQUIPMENT	Misc. Animal Equipment		
RESEARCH	BIO HAZARD EQUIPMENT	Misc. Bio Hazard Equipment		
RESEARCH	INCUBATORS	Incubators		
RESEARCH	LAB EQUIPMENT	Misc. Lab Equipment		
RESEARCH	LAB STERILIZER	Misc. Lab Sterilizer		
RESEARCH	RESEARCH EQUIPMENT	Misc. Research Equipment		
RESEARCH	SECURITY CAMERAS	Security Cameras		
RESEARCH	SECURITY PANEL	Security Panel		
SITE	BOLLARDS	Site Bollards	Group	One Per Building
SITE	LIGHTING POLES	Lighting Poles	Group	One Per Building
SITE	SIGN	Signage	Group	One Per Building
SITE	TRAFFIC CONTROL	Misc. Traffic Control Equipment	Group	One Per Building
SITE	WASTE EQUIPMENT	Misc. Waste Equipment		

System	Asset Group		Attributes
ACCESS	LOCKBOX		location
ACCESS	LOCKBOX		asset number
ACCESS	Special Action Doors		Door Type
ALL	MANHOLE		GPS coordinate
ALL	METER		meter type
ALL	METER		remote reading
ALL	METER		reading ranges
ALL	METER		temp range
ALL	METER		Instrumentation tag number
ALL	Tanks		capacity*
ALL	Tanks		tank volume
ALL	Tanks		max system temp
ALL	Tanks		max system pressure
ARCHITECTURAL	Cabinet		paint finish
ARCHITECTURAL	Cabinet		color
ARCHITECTURAL	Cabinet		hardware type
ARCHITECTURAL	Cabinet		part number
ARCHITECTURAL	Fixed Partitions		color
ARCHITECTURAL	Misc Architectural		any associated finishes
ARCHITECTURAL	Operable Partitions		color
CONVEYING	ELEVATOR		power*
CONVEYING	ELEVATOR		electrical panel name*
CONVEYING	ELEVATOR		weight limit
CONVEYING	ELEVATOR		speed
CONVEYING	ELEVATOR		src hp rating
CONVEYING	ELEVATOR		mg motor power
CONVEYING	ELEVATOR		starting amps
CONVEYING	ELEVATOR		accelerating amps
CONVEYING	Hoists & Cranes		power*
CONVEYING	Hoists & Cranes		electrical panel name*
CONVEYING	Hoists & Cranes		weight limit
CONVEYING	Hoists & Cranes		speed

CONVEYING	Hoists & Cranes		src hp rating
CONVEYING	Hoists & Cranes		mg motor power
CONVEYING	Hoists & Cranes		starting amps
CONVEYING	Hoists & Cranes		accelerating amps
CONVEYING	Lifts		power*
CONVEYING	Lifts		electrical panel name*
CONVEYING	Lifts		weight limit
ELEC	Automatic Transfer Switch		power*
ELEC	Automatic Transfer Switch		electrical panel name*
ELEC	Automatic Transfer Switch		capacity*
ELEC	Battery Systems		power*
ELEC	Battery Systems		electrical panel name*
ELEC	Battery Systems		capacity*
ELEC	Battery Systems		supply voltage
ELEC	Battery Systems		supply voltage offset
ELEC	DP		power*
ELEC	DP		electrical panel name*
ELEC	DP		capacity*
ELEC	DP		main bus current
ELEC	DP		aic rating
ELEC	GENERATOR		power*
ELEC	GENERATOR		electrical panel name*
ELEC	GENERATOR		capacity*
ELEC	GENERATOR		electric generator efficiency
ELEC	GENERATOR		gfcı capable
ELEC	GENERATOR		number of sources
ELEC	GENERATOR		maximum power output
ELEC	GENERATOR		start current factor
ELEC	GENERATOR		fuel type
ELEC	GENERATOR		fuel storage
ELEC	GENERATOR		fuel capacity
ELEC	GENERATOR		operating rpm limits
ELEC	GENERATOR		engine cooling type
ELEC	GENERATOR		engine size
ELEC	GENERATOR		number of batteries
ELEC	GENERATOR		battery capacity
ELEC	HV SWITCH		power*
ELEC	LC		power*
ELEC	LC		electrical panel name*
ELEC	LC		capacity*
ELEC	LC		main bus current
ELEC	LC		aic rating
ELEC	Lighting Control Equipment		power*
ELEC	Lighting Control Equipment		electrical panel name*
ELEC	MCC		power*
ELEC	MCC		electrical panel name*
ELEC	MCC		capacity*
ELEC	MCC		operating weight
ELEC	MCC		type of support
ELEC	MCC		horizontal bus current
ELEC	MCC		vertical bus current
ELEC	MCC		short circuit interrupting rating (KAIC)
ELEC	MCC		minimum bus bracing (KAIC)
ELEC	MDP		power*
ELEC	MDP		electrical panel name*
ELEC	MDP		capacity*
ELEC	MDP		operating weight
ELEC	MDP		type of support

ELEC	MDP		horizontal bus current
ELEC	MDP		vertical bus current
ELEC	MDP		short circuit interrupting rating (KAIC)
ELEC	MDP		minimum bus bracing (KAIC)
ELEC	MOTOR		power*
ELEC	MOTOR		electrical panel name*
ELEC	MOTOR		capacity*
ELEC	MOTOR		HP
ELEC	MOTOR		efficiency
ELEC	MOTOR		drive line (horizontal, etc.)
ELEC	MOTOR		break horse power in bhp
ELEC	Power Equipment		power*
ELEC	Power Equipment		electrical panel name*
ELEC	Power Equipment		capacity*
ELEC	PULL BOX		location in space (ex: south wall, near parking lot)
ELEC	PULL BOX		power*
ELEC	Solar/PV Equipment		power*
ELEC	Solar/PV Equipment		electrical panel name*
ELEC	Solar/PV Equipment		capacity*
ELEC	Solar/PV Equipment		cell type
ELEC	Solar/PV Equipment		power tolerance
ELEC	Solar/PV Equipment		number of cells
ELEC	Surge Protectors		power*
ELEC	Surge Protectors		electrical panel name*
ELEC	Surge Protectors		max allowed voltage drop
ELEC	Surge Protectors		net impedance
ELEC	UPS System		power*
ELEC	UPS System		electrical panel name*
ELEC	UPS System		supply voltage
ELEC	UPS System		supply voltage offset
ELEC	UPS System		connected conductor function
ELEC	XFMR		power*
ELEC	XFMR		electrical panel name*
EMERGENCY	Defibrillator		location in space (ex: south wall, near bathrooms)
EMERGENCY	EMG PHONE		location in space (ex: south wall, near parking lot)
EMERGENCY	FIRST AID		location in space (ex: south wall, near bathrooms)
EMERGENCY	FUME HOOD		power*
EMERGENCY	FUME HOOD		electrical panel name*
EMERGENCY	FUME HOOD		capacity*
EMERGENCY	FUME HOOD		maximum air flow rate
EMERGENCY	FUME HOOD		temperature range
EMERGENCY	FUME HOOD		maximum working pressure
EMERGENCY	FUME HOOD		temperature rating
EMERGENCY	FUME HOOD		nominal air flow rate
EMERGENCY	FUME HOOD		open pressure drop
EMERGENCY	FUME HOOD		leakage fully closed
EMERGENCY	SF SHOWER		temper water
EMERGENCY	SF SHOWER		flow rate
FIRE ALARM	Dampers		capacity*
FIRE ALARM	Dampers		maximum air flow rate
FIRE ALARM	Dampers		nominal air flow rate
FIRE ALARM	Dampers		open pressure drop
FIRE ALARM	Dampers		leakage fully closed
FIRE ALARM	Dampers		IP address
FIRE ALARM	Dampers		BAS address
FIRE ALARM	Dampers		Parent DDC Panel Name
FIRE ALARM	Fire Alarm Panel		power*
FIRE ALARM	Fire Alarm Panel		electrical panel name*

FIRE SUPPRESSION	Fire Hydrants		PSI
FIRE SUPPRESSION	Fire Hydrants		GPM
FIRE SUPPRESSION	Fire Hydrants		line tap size
FIRE SUPPRESSION	Fire Hydrants		GPS coordinates
FOOD SERVICE	COOLER		power*
FOOD SERVICE	COOLER		electrical panel name*
FOOD SERVICE	COOLER		capacity*
FOOD SERVICE	COOLER		compressor oil type
FOOD SERVICE	COOLER		refrigerant type
FOOD SERVICE	COOLER		compressor type
FOOD SERVICE	FREEZER		power*
FOOD SERVICE	FREEZER		electrical panel name*
FOOD SERVICE	FREEZER		capacity*
FOOD SERVICE	FREEZER		compressor oil type
FOOD SERVICE	FREEZER		refrigerant type
FOOD SERVICE	FREEZER		compressor type
FOOD SERVICE	ICE MAKER		power*
FOOD SERVICE	ICE MAKER		electrical panel name*
FOOD SERVICE	ICE MAKER		capacity*
FOOD SERVICE	ICE MAKER		compressor oil type
FOOD SERVICE	ICE MAKER		refrigerant type
FOOD SERVICE	ICE MAKER		compressor type
HVAC	AHU		power*
HVAC	AHU		electrical panel name*
HVAC	AHU		capacity*
HVAC	AHU		air filter type
HVAC	AHU		return fan capacity
HVAC	AHU		supply fan capacity
HVAC	AHU		fan ext pressure drop
HVAC	AHU		chilled water rate
HVAC	AHU		coil flow
HVAC	AHU		coil velocity
HVAC	AHU		coil capacity
HVAC	AHU		coil pressure drop
HVAC	AHU		entering air temp db/wb
HVAC	AHU		leaving air temp db/wb
HVAC	AHU		entering water temp
HVAC	AHU		leaving water temp
HVAC	Air Valve		capacity*
HVAC	Air Valve		maximum operating pressure
HVAC	Air Valve		valve operation
HVAC	Air Valve		type of valve
HVAC	Air Valve		location in space
HVAC	ATU		power*
HVAC	ATU		electrical panel name*
HVAC	ATU		capacity*
HVAC	ATU		air flow min
HVAC	ATU		air flow max
HVAC	ATU		pressure drop
HVAC	Boilers		power*
HVAC	Boilers		electrical panel name*
HVAC	Boilers		capacity*
HVAC	Boilers		energy source
HVAC	Boilers		partial load efficiency curves
HVAC	Boilers		outlet temperature range
HVAC	Boilers		nominal energy consumption
HVAC	Boilers		nominal efficiency
HVAC	Boilers		heat output

HVAC	Boilers		pressure rating
HVAC	Boilers		normal operating pressure set point
HVAC	Boilers		maximum allowable pressure
HVAC	Boilers		maximum boiler temperature
HVAC	Boilers		boiler design temperature
HVAC	Boilers		water storage capacity
HVAC	Boilers		type of boiler
HVAC	Boilers		number of passes
HVAC	Chillers		power*
HVAC	Chillers		electrical panel name*
HVAC	Chillers		capacity*
HVAC	Chillers		chiller cooling capacity
HVAC	Chillers		chilled water inlet/outlet temp
HVAC	Chillers		chilled water flow rate
HVAC	Chillers		chilled water pressure drop
HVAC	Chillers		cooling water inlet/outlet temp
HVAC	Chillers		cooling water flow rate
HVAC	Chillers		cooling water pressure drop
HVAC	Chillers		hot water inlet/outlet temp
HVAC	Chillers		hot water flow rate
HVAC	Chillers		hot water pressure drop
HVAC	Compressors		power*
HVAC	Compressors		electrical panel name*
HVAC	Compressors		capacity*
HVAC	Compressors		has hot gas bypass
HVAC	Compressors		ideal capacity
HVAC	Compressors		nominal capacity
HVAC	Compressors		max pressure
HVAC	Compressors		compressor type
HVAC	Control Devices		IP address
HVAC	Control Devices		BAS address
HVAC	Control Devices		Parent DDC Panel Name
HVAC	CONTROLLER		analog inputs
HVAC	CONTROLLER		digital inputs
HVAC	CONTROLLER		IP address
HVAC	CONTROLLER		BAS address
HVAC	CONTROLLER		Parent DDC Panel Name
HVAC	Cooling Tower		power*
HVAC	Cooling Tower		electrical panel name*
HVAC	Cooling Tower		capacity*
HVAC	Cooling Tower		nominal capacity
HVAC	Cooling Tower		flow arrangement
HVAC	Cooling Tower		capacity control
HVAC	Cooling Tower		control strategy
HVAC	Cooling Tower		number of cells
HVAC	Cooling Tower		basin reserve volume
HVAC	Cooling Tower		lift elevation difference
HVAC	Cooling Tower		operation temperature range
HVAC	Cooling Tower		ambient design dry bulb temp
HVAC	Cooling Tower		ambient design wet bulb temp
HVAC	Dampers		capacity*
HVAC	Dampers		maximum air flow rate
HVAC	Dampers		nominal air flow rate
HVAC	Dampers		open pressure drop
HVAC	Dampers		leakage fully closed
HVAC	Dampers		IP address
HVAC	Dampers		BAS address
HVAC	Dampers		Parent DDC Panel Name

HVAC	DHUM		power*
HVAC	DHUM		electrical panel name*
HVAC	DHUM		capacity*
HVAC	DHUM		nominal moisture gain
HVAC	DHUM		internal control
HVAC	DHUM		water requirement
HVAC	DHUM		saturation efficiency curve air pressure drop curve
HVAC	ERU		power*
HVAC	ERU		electrical panel name*
HVAC	ERU		capacity*
HVAC	ERU		supply fan ext. static pressure
HVAC	ERU		supply fan max hp
HVAC	ERU		exhaust fan ext static pressure
HVAC	ERU		exhaust fan total hp
HVAC	ERU		cfm range
HVAC	ERU		weight
HVAC	FAN		power*
HVAC	FAN		electrical panel name*
HVAC	FAN		capacity*
HVAC	FAN		air flow - maximum
HVAC	FAN		nominal pressure drop
HVAC	FAN		efficiency rating
HVAC	FAN		belt type
HVAC	FAN		drive line (horizontal, etc.)
HVAC	FAN		interlock
HVAC	FAN		pressure
HVAC	FCU		power*
HVAC	FCU		electrical panel name*
HVAC	FCU		capacity*
HVAC	FCU		exit static pressure
HVAC	FCU		entering air temp db/wb
HVAC	FCU		leaving air temp db/wb
HVAC	FCU		entering water temp
HVAC	FCU		leaving water temp
HVAC	FCU		total capacity
HVAC	FCU		sensible capacity
HVAC	FCU		chilled water flow
HVAC	FCU		cooling coil delta P
HVAC	FCU		fan motor hp
HVAC	FCU		filter type
HVAC	FCU		fan type
HVAC	FCU		type of fan drive
HVAC	FCU		fan size (inches)
HVAC	FCU		fan efficiency in % or pf
HVAC	FCU		static pressure in "inches"
HVAC	Heat Exchangers		electrical panel name*
HVAC	Heat Exchangers		capacity*
HVAC	Heat Exchangers		exchanger type
HVAC	Heat Exchangers		dry weight
HVAC	Heat Exchangers		fluid volume
HVAC	Heat Exchangers		max temp
HVAC	Heat Exchangers		recommended coolant
HVAC	Heaters		power*
HVAC	Heaters		capacity*
HVAC	Heaters		entering air temp db/wb
HVAC	Heaters		leaving air temp db/wb
HVAC	Heaters		electrical panel name*
HVAC	Humidifier		power*

HVAC	Humidifier		electrical panel name*
HVAC	Humidifier		capacity*
HVAC	Humidifier		nominal moisture drop
HVAC	Humidifier		internal control
HVAC	OAHU		power*
HVAC	OAHU		electrical panel name*
HVAC	OAHU		capacity*
HVAC	OAHU		air filter type
HVAC	OAHU		return fan capacity
HVAC	OAHU		supply fan capacity
HVAC	PKG UNIT		power*
HVAC	PKG UNIT		electrical panel name*
HVAC	PKG UNIT		capacity*
HVAC	PKG UNIT		nominal condensing temp
HVAC	PKG UNIT		nominal evaporating temp
HVAC	PKG UNIT		nominal heat rejection rate
HVAC	PUMP		power*
HVAC	PUMP		electrical panel name*
HVAC	PUMP		capacity*
HVAC	PUMP		feet head
HVAC	PUMP		suction pressure
HVAC	PUMP		type (endsuction, inline, etc)
HVAC	PUMP		max temp
HVAC	PUMP		max pressure
HVAC	PUMP		suction size
HVAC	PUMP		discharge size
HVAC	Sensors		location in space
HVAC	Seperators		capacity*
HVAC	Seperators		tank volume
HVAC	Strainer		capacity*
HVAC	Strainer		tank volume
HVAC	Strainer		type
HVAC	Unit Heater		power*
HVAC	Unit Heater		electrical panel name*
HVAC	Unit Heater		capacity*
HVAC	Unit Heater		temp rise
HVAC	VFD		power*
HVAC	VFD		electrical panel name*
HVAC	VFD		minimum output frequency
HVAC	VFD		maximum output frequency
HVAC	Water Valves		capacity*
HVAC	Water Valves		maximum operating pressure
HVAC	Water Valves		valve operation
HVAC	Water Valves		type of valve
HVAC	Water Valves		location in space
IRRIGATION	Hand Boxes		GPS coordinate
PLUMB	Disposal		location
PLUMB	Disposal		voltage
PLUMB	Disposal		electrical panel name*
PLUMB	Purifiers		filter face velocity
PLUMB	Purifiers		media surface velocity
PLUMB	Purifiers		pressure drop
PLUMB	Purifiers		particle geometric mean diameter
PLUMB	Purifiers		water filter type
PLUMB	Purifiers		location
PLUMB	RPZ		inlet pressure
PLUMB	RPZ		outlet pressure
PLUMB	RPZ		minimum capacity



PLUMB	RPZ		valve size
PLUMB	RPZ		location
PLUMB	Traps		maximum operating pressure
PLUMB	Traps		water inlet temperature range
PLUMB	Traps		flow coefficient
PLUMB	Water Fountain		fountain type
PLUMB	Water Fountain		electrical panel name*
PLUMB	Water Heater		power*
PLUMB	Water Heater		electrical panel name*
PLUMB	Water Heater		capacity*
PLUMB	Water Heater		flow rate recovery at 100°
PLUMB	Water Heater		storage capacity
PLUMB	Water Heater		steam supply entering coil pressure
PLUMB	Water Heater		entering water temp
PLUMB	Water Heater		PSI
PLUMB	Water Heater		leaving water temp
PLUMB	Water Heater		gas
RESEARCH	Incubators		power*
RESEARCH	Incubators		electrical panel name*
RESEARCH	Incubators		capacity*
RESEARCH	Incubators		heating range
RESEARCH	Incubators		cooling range
RESEARCH	Incubators		type
RESEARCH	Incubators		compressor type
RESEARCH	Lab Sterilizer		steam temperature
RESEARCH	Lab Sterilizer		type

Equipment																	
Name	Location	Asset Group	Description	Manufacturer	Installer	Model	Warrenty Term	Life Expectancy	Original Cost	Serial	Barcode	Submittals	O&M Files	Cx Files	Parent	Support Locations	Attributes
GEN-1	155	GENERATOR	Generator	CUMMINS POWER GENERATION	MARATHON	DFEH-10354881	5 YEARS	15 YEARS	\$25,000	412943-1001	489931420806865	22 35 00.00	OM-Gener	Cx-Generator.PDF			Power: 7500 VL
GEN-2	155	GENERATOR	Generator	CUMMINS POWER GENERATION	MARATHON	DFEH-10354882	5 YEARS	15 YEARS	\$25,000	412943-1201	351442678164922	22 35 00.00	OM-Gener	Cx-Generator.PDF			Power: 7500 VL
GEN-3	155	GENERATOR	Generator	CUMMINS POWER GENERATION	MARATHON	DFEH-10354883	5 YEARS	15 YEARS	\$25,000	412943-1301	183776908266215	22 35 00.00	OM-Gener	Cx-Generator.PDF			Power: 7500 VL
AHU-1	146	AHU	Air Handling Unit	YORK	TD INDUSTRIES	ITF-BD20	5 YEARS	15 YEARS	\$30,000	FCJ121004-01	818557787731907	23 73 14.00	OM-32 - H	Cx-32 - HVAC	N1L1	100, 101, 102, 103, 104, 105,	air filter type: Pleated, capacity: 8030 CFM, chilled wa
FPB-10	101	ATU	Air Terminal Unit	JOHNSON CONTROLS	TD INDUSTRIES	GVL-OP-42	1 YEAR	5 YEARS	\$750	700120-12	700190248671991	23 36 00.00	OM-Air Ter	Cx-Air Termin	AHU-1	102	power*: 32 VL, capacity*: 150 CFM, air flow min: 35 C
FPB-11	101	ATU	Air Terminal Unit	JOHNSON CONTROLS	TD INDUSTRIES	S10-48-2A	1 YEAR	5 YEARS	\$750	700120-12	323127476194128	23 36 00.00	OM-Air Ter	Cx-Air Termin	AHU-1	154, 155	power*: 32 VL, capacity*: 150 CFM, air flow min: 35 C
VAV-10	131	ATU	Air Terminal Unit	JOHNSON CONTROLS	TD INDUSTRIES	K7304-5A-CP	1 YEAR	5 YEARS	\$500	2122403867	325917663689395	23 36 00.00	OM-Air Ter	Cx-Air Termin	AHU-1	101	power*: 32 VL, capacity*: 150 CFM, air flow min: 35 C
CHWP-1	146	PUMP	Pump	PENTAIR	TD INDUSTRIES	ES-6000-V	1 YEAR	10 YEARS	\$1,000	2122403934	648076430374908	23 73 14.00	OM-Chilled	Cx-Chilled Wa	N1L1		power: 55 VL, capacity: 70 GL, feet head: 15 Ft/Head,
CHWP-2	146	PUMP	Pump	PENTAIR	TD INDUSTRIES	126-DCD	1 YEAR	10 YEARS	\$1,000	2122403919	310291525087314	23 73 14.00	OM-Chilled	Cx-Chilled Wa	N1L2		power: 55 VL, capacity: 70 GL, feet head: 15 Ft/Head,
GWH-1	146	WATER HEATER	Water Heater	RECOUSA	TD INDUSTRIES	SE-50	1 YEAR	10 YEARS	\$1,000	AHJ121004-03	413571440397148	22 35 00.00	OM-Water	Cx-Water Hed	N1LDPK1		power*: 70 VL, capacity*: 350 GL, flow rate recovery
GWH-2	146	WATER HEATER	Water Heater	RECOUSA	TD INDUSTRIES	DE-45	1 YEAR	10 YEARS	\$1,000	AHJ121004-03	880498003918165	22 35 00.00	OM-Water	Cx-Water Hed	N1LK1		power*: 70 VL, capacity*: 350 GL, flow rate recovery
N1L1	147	DP	Main Distribution Panel	GENERAL ELECTRIC	MARATHON	ETP-400	1 YEAR	10 YEARS	\$350	T009518-003-00	451348810147269	26 01 26.1 S	OM-Distrib	Cx-Distribution Panels.pdf			power*: 500 VL, capacity*: 25 Circuts, main bus curre
N1L2	125	DP	Main Distribution Panel	GENERAL ELECTRIC	MARATHON	ETP-400	1 YEAR	10 YEARS	\$350	T009518-004-00	339137622295457	26 01 26.1 S	OM-Distrib	Cx-Distribution Panels.pdf			power*: 500 VL, capacity*: 25 Circuts, main bus curre
N1LDPK1	147	DP	Main Distribution Panel	GENERAL ELECTRIC	MARATHON	ETP-400	1 YEAR	10 YEARS	\$350	T009518-005-00	511543681547928	26 01 26.1 S	OM-Distrib	Cx-Distribution Panels.pdf			power*: 500 VL, capacity*: 25 Circuts, main bus curre
N1LK1	139	DP	Main Distribution Panel	GENERAL ELECTRIC	MARATHON	ETP-400	1 YEAR	10 YEARS	\$350	T009518-006-00	510514090877968	26 01 26.1 S	OM-Distrib	Cx-Distribution Panels.pdf			power*: 500 VL, capacity*: 25 Circuts, main bus curre

Space								
Name	Floor	Category	SF	Ceiling Height	Description	Drawings		
100	1	020 Non Assignable: Public Circulation Area, Lobby Foyer	1413.44	12	LOBBY	A105		
101	1	635 General: Food Facilities Svc	3648.16	12	FOOD PREP	A105		
102	1	630 General: Food Facilities	4515.73	12	DINING	A105		
103	1	710 Support: Central Comp or Telecom	39.66	12	IT	A105		
104	1	U10 Special Use: Unisex Public Restroom	74.87	12	UNISEX	A105		
105	1	M10 Special Use: Men's Public Restroom	287.67	12	MENS	A105		
106	1	W10 Special Use: Women's Public Restroom	288.68	12	WOMENS	A106		
110	1	030 Non Assignable: Mech Rm	292.03	12	MECHANICAL	A106		
111	1	020 Non Assignable: Elev, Stair	81.16	12	STAIR	A106		
112	1	310 Office: Staff Off	81.16	12	OFFICE	A106		
113	1	010 Non Assignable: Custodial Rm	257.44	12	CUSTODIAL	A106		
114	1	310 Office: Staff Off	95.94	12	OFFICE	A106		
115	1	310 Office: Staff Off	95.94	12	OFFICE	A106		
116	1	310 Office: Staff Off	95.53	12	OFFICE	A106		
117	1	310 Office: Staff Off	158.52	12	OFFICE	A106		

Contact (Manufacturer & Installer)				
Company Name	Phone Number	Website	Email	Description
CUMMINS POWER GENERATION	123-456-7890	www.CUMMINSPOWERGENERATION.com	info@CUMMINSPOWERGENERATION.com	Generator Manufacturer
YORK	123-456-7890	www.YORK.com	info@YORK.com	Air Handler Manufacturer
JOHNSON CONTROLS	123-456-7890	www.JOHNSONCONTROLS.com	info@JOHNSONCONTROLS.com	HVAC Manufacturer
PENTAIR	123-456-7890	www.PENTAIR.com	info@PENTAIR.com	Pump Manufacturer
RECOUSA	123-456-7890	www.RECOUSA.com	info@RECOUSA.com	Water Heater Manufacturer
GENERAL ELECTRIC	123-456-7890	www.GENERALELECTRIC.com	info@GENERALELECTRIC.com	Electrical Equipment Manufacturer
MARATHON	123-456-7890	www.MARATHON.COM	info@MARATHON.com	Electrical Equipment Installer
TD INDUSTRIES	123-456-7890	WWW.TDINDUSTRIES.COM	info@TDINDUSTRIES.com	HVAC Installer

**Fields colored green indicate design team responsibility**

Texas Higher Education Coordination Board Space Use Codes
050 Inactive Area
060 Alteration or Conversion Area
070 Unfinished Area
110 Classroom
115 Classroom Service
210 Class Laboratory
215 Class Laboratory Service
220 Special Class Open Laboratory
225 Special Class Open Laboratory Service
230 Individual Study Laboratory
235 Individual Study Laboratory Service
250 Research/Non-Class Laboratory
255 Research/Non-Class Laboratory Service
310 Office
315 Office Service
350 Conference Room
355 Conference Room Service
410 Study Space
420 Stack
430 Open-Stack Study Room
440 Processing Room
455 Study Service
510 Armory
515 Armory Service
520 Athletic or Physical Education
523 Athletic Facilities Spectator Seating
525 Athletic or Physical Education Service
530 Media Production
535 Media Production Service
540 Clinic (Non-Health Professions)
545 Clinic Service (Non-Health Professions)
550 Demonstration
555 Demonstration Service
560 Field Building
570 Animal Facilities
575 Animal Facilities Service
580 Greenhouse
585 Greenhouse Service
590 Other (All Purpose)
610 Assembly
615 Assembly Service
620 Exhibition
625 Exhibition Service

630 Food Facility
635 Food Facility Service
640 Day Care
645 Day Care Service
650 Lounge
655 Lounge Service
660 Merchandising
665 Merchandising Service
670 Recreation
675 Recreation Service
680 Meeting Room
685 Meeting Room Service
690 Locker Room
710 Central Computer/Tele-communication
715 Central Computer/Tele-communication Service
720 Shop
725 Shop Service
730 Central Storage
735 Central Storage Service
740 Vehicle Storage Facility
745 Vehicle Storage Facility Service
750 Central Service
755 Central Service Support
760 Hazardous Materials Storage
770 Hazardous Waste Storage
775 Hazardous Waste Service
810 Patient Bedroom
815 Patient Bedroom Service
820 Patient Bath
830 Nurse Station
835 Nurse Station Service
840 Surgery
845 Surgery Service
850 Treatment/Examination Clinic
855 Treatment/Examination Clinic Service
860 Diagnostic Service Laboratory
865 Diagnostic Service Laboratory Support
870 Health Care Central Supplies
880 Public Waiting
890 Staff On-Call Facility
895 Staff On-Call Facility Service
910 Sleep/Study without Toilet/Bath
919 Toilet/Bath
920 Sleep/Study with Toilet/Bath
935 Sleep/Study Service
950 Apartment
955 Apartment Service

970 House
M10 Men's Public Rest Rooms
W10 Women's Public Rest Rooms
U10 Unisex Restroom
W01 Bridge/Tunnel
W02 Elevator
W03 Escalator
W04 Loading Dock
W05 Lobby
W06 Public Corridor
W07 Stairway
WWW Circulation Area
X01 Custodial Supply Closet
X02 Janitor Room
X03 Public Rest Room
X04 Trash Room
XXX Building Service Area
Y01 Central Utility Plant
Y02 Fuel Room
Y03 Shaft
Y04 Utility/Mechanical Space
YYY Mechanical Area
ZZZ Structural Area

Section 3, Appendix A Responsibility Matrix (RL)		Architect will be responsible to provide information for all green cells indicated with "X" per Section 3 (FM Data Requirements). See below for scheduled delivery milestone.		Contractor will be responsible to provide information for all orange cells indicated with "X" per Section 3 (FM Data Requirements). See below for scheduled delivery milestone.			
		(100% Design) Design Development	(100% Design) Construction Document	Submittals	Install	Close Out	
		Architect / Engineer	Architect / Engineer	Contractor	Contractor	Contractor	
<b>Space</b>							
	Name	x					Provide a unique "space" name. This field will be the room numbers indicated on the final way finding. For exterior spaces, provide location in reference to the building name (ex: 999-South, 999-East, 999-North, 999-West)
	Floor	x					Provide the floor that the space is located on.
	Category		x				Note: Space categories will be confirmed by Owner and chosen from Texas Higher Education Coordinating Board (THECB) space use codes. For list of space code obtain latest approved list from the THECB. At the writing of this document, the latest list could be obtained from the link below (page 71): <a href="http://www.thecb.state.tx.us/reports/PDF/2520.PDF?CFID=10580093&amp;CFTOKEN=21211486">http://www.thecb.state.tx.us/reports/PDF/2520.PDF?CFID=10580093&amp;CFTOKEN=21211486</a>
	SF		x				Provide usable Square Footage in each space, which shall be measured from edge of finish wall to edge of finish wall. This unit of measure is "square feet". Use decimal format to two places (i.e., one hundred fifty six square feet would be 156.00).
	Ceiling Height		x				Provide the ceiling height for the room. This unit of measure is "feet". Use decimal format (i.e., 10 feet 6 inches of height would be 10.5, and 8 feet 4 inches of height would be 8.33).
	Description	x					Provide space description, as applicable. Note: IF way finding space name differs from name on construction document then following the space description, provide the space name as indicated on the contract documents / drawing which shall be used with ": PLAN-" preceding. (ex: "Mens Restroom : PLAN-104")
	Drawings		x				Provide the corresponding Architectural, Mechanical, Electrical, and Plumbing floorplan documents
<b>Contact (Manufacturer &amp; Installer)</b>							
	Company Name			x			Provide the name of the company is manufacturing or installing equipment. Note: Use owner-provided vendor names
	Phone Number			x			Provide the contact's phone number or a main company phone number. Format in the United States shall be 123-456-7890. For international phone numbers, include the international exchange, as applicable, before the local number.
	Website			x			Provide the website URL of the Manufacturer or Installer
	Email			x			Provide the contact email of the Manufacturer or Installer
	Description			x			Provide a description of the Manufacturer or Installer
<b>Equipment</b>							
	Name	x					Provide the name of the equipment that matches the drawings. If no name is provided on the drawings follow the naming standard below. <b>*SEE NOTE 1</b>
	Location	x					Provide the name of the space the equipment is located in.
	Asset Group	x					Provide the category of the piece of equipment.
	Description	x					Provide a brief description of the equipment. If the equipment is located in a large common area provide a location descriptor too. Example: south east smoke detector
	Manufacturer			x			Provide the manufacturer who is responsible for this piece of equipment.
	Installer			x			Provide the installer who is responsible for this piece of equipment.
	Model			x			Provide the model number. NOTE: Model number is not necessary for Asset Groups that are marked "Group". See Asset Group Requirement for more details.
	Warrenty Term			x			Provide the warranty duration in years for the product
	Life Expectancy			x			Provide the life expectancy in years. NOTE: life expectancy is not necessary for Asset Groups that are marked "Group". See Asset Group Requirement for more details.
	Original Cost			x			Provide the approximate original cost of the asset. NOTE: original cost is not necessary for Asset Groups that are marked "Group". See Asset Group Requirement for more details.
	Serial				x		Provide the Serial number. NOTE: Serial number is not necessary for Asset Groups that are marked "Group". See Asset Group Requirement for more details.
	Barcode				x		Provide the Barcode. NOTE: Barcode is not necessary for Asset Groups that are marked "Group". See Asset Group Requirement for more details.
	Submittals			x			Attach the PDF submittal document.
	O&M Files					x	Attach the PDF Operations & Maintenance document.
	Cx Files					x	Attach the PDF Commissioning document.

**\*Note 1: Equipment Naming**

**Mechanical, Electrical, and Plumbing Components**

All MEP equipment's names shall match the names on the drawings.  
 All equipment (ex: valves) that have a unique name and/or is tagged (i.e., labeled or brass tagged) shall be named c

**Valve Components**

All brass tagged valves 1 inch and above and any isolation valves of specialty systems

Description	Isolation Level & Area	System	Naming Standard
1" Hot water	Level 2 - North	Hot Water	HVAC-VLV-A-B-C-D-E
4" Chilled Water	Level 1 - South	Chilled Water	HVAC-VLV-A-B-C-D-E

Where:

A = Abbreviation for the system served by the valve (HVAC, Fire, etc.)

B = Sub-System Type (HWS&R and CHS&R)

C = Unique Identifier (A, B, C, etc. for multiple components in same space)

Description	Isolation Level & Area	System	Naming Standard
1" Hot water	Level 2 - North	Hot Water	HVAC-VLV-HWS-A
4" Chilled Water	Level 1 - South	Chilled Water	HVAC-VLV-CHR-A



## Section 3, Appendix B (RL) - Asset Group Requirements

Asset Group Description	Asset Group	Asset Type	System	Comments
BUILDING ENVELOPE	ENVELOPE	Group	ARCH	One per building
COMMERCIAL EQUIPMENT	EQUIP-COM	Group	ARCH	One Type per building (dryers, washers, etc.)
INTERIOR FINISHES	FINISHES	Group	ARCH	One per building
ADA DOOR OPERATOR	ADA		ELEC	One per building
AUTOMATIC TRANSFER SWITCH	ATS		ELEC	
ELEVATOR	ELEV		ELEC	
EMERGENCY PHONE	EMER-PHONE		ELEC	
EXTERIOR LIGHTING	EXT-LIGHT	Group	ELEC	One per building
INTERIOR LIGHTING	INT-LIGHT	Group	ELEC	One per building
LIGHT POLES	LGT-POLE	Group	ELEC	One per building
ELECTRIC METER	METER-ELEC		ELEC	
ELECTRICAL PANEL	PNL-ELEC		ELEC	
LIGHTING CONTROL PANEL	PNL-LIGHT		ELEC	
ELECTRICAL ROLL UP DOOR	ROLL UP DOOR		ELEC	
SWITCH GEAR	SWG		ELEC	
ELECTRICAL SWITCH	SWITCH		ELEC	
TRANSFORMER	XFMR		ELEC	
FIRE ALARM SYSTEM	FIRE-ALARM	Group	FIRE	One per building
FIRE SUPPRESSION SYSTEM	FIRE-SUPPRESSION	Group	FIRE	One per building
FIRE ALARM PANEL	PNL-FIRE		FIRE ALARM	
FIRE PUMP	PMP-FIRE		FIRE SUPPRESSION	
JOCKEY PUMP	PMP-JOC		FIRE SUPPRESSION	
AIR HANDLING UNIT	AHU		HVAC	
AIR HANDLER - SPECIAL	AHU-S		HVAC	energy recovery unit
AIR SEPERATOR	AS		HVAC	
CHILLER	CHR		HVAC	
ELECTRIC DUCT HEATER	EDH		HVAC	
EXHAUST FAN	FAN-EXH		HVAC	
FAN COIL UNIT	FCU		HVAC	
CHILLED WATER PUMP	PMP-CHW		HVAC	
HEATING HOT WATER PUMP	PMP-HW		HVAC	
BAS CONTROL PANEL	PNL-BAS		HVAC	
CHEMICAL POT FEEDER	TANK-CHEM		HVAC	
EXPANSION TANK	TANK-EXP		HVAC	
VAV BOX	VAV		HVAC	
VARIABLE FREQUENCY DRIVE	VFD		HVAC	
IRRIGATION CONTROLLER	IRR-CONT		IRRIGATION	
IRRIGATION METER	IRR-METER		IRRIGATION	
IRRIGATION METER	METER-IRRIGATION		IRRIGATION	
IRRIGATION CONTROL PANEL	PNL-IRR	Group	IRRIGATION	One per building
GENERATOR	GEN-SET		PLANT	
BACKFLOW PREVENTOR	BFP		PLUMB	
DRINKING FOUNTAIN	DF		PLUMB	
GAS MATER	METER-GAS		PLUMB	
WATER METER	METER-WATER	Group	PLUMB	One per building
CIRCULATION PUMP	PMP-CIRC		PLUMB	
DOMESTIC WATER PUMP	PMP-DOM		PLUMB	
SUMP PUMP	PMP-SUMP		PLUMB	
CISTERN TANK	TANK-CISTERN		PLUMB	
LINT TRAP	TANK-LINT		PLUMB	
MISCELLANEOUS TANK	TANK-MISC		PLUMB	Flash Tank, Chemical, etc.
MAIN ISOLATION VALVE	VLV-MAIN		PLUMB	
TEMPERING VALVE	VLV-TEMP		PLUMB	
ELECTRIC WATER HEATER	WH-ELEC		PLUMB	
GAS WATER HEATER	WH-GAS		PLUMB	

Equipment														
Name	Location	Asset Group	Description	Manufacturer	Installer	Model	Warranty Term	Life Expectancy	Original Cost	Serial	Barcode	Submittals	O&M Files	Cx Files
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FPB-10	101	VAV	Air Terminal Unit	JOHNSON CONTROLS	TD INDUSTRIES	GVL-OP-42	1 YEAR	5 YEARS	\$750	700120-12	700190248671991	23 36 00.00	OM-Air Tern	Cx-Air Terminal Units.pdf
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N1L1	147	PNL-ELEC	Main Distribution Panel	GENERAL ELECTRIC	MARATHON	ETP-400	1 YEAR	10 YEARS	\$350	T009518-003-00	451348810147269	26 01 26.1 S	OM-Distribu	Cx-Distribution Panels.pdf
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Contact (Manufacturer & Installer)				
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CUMMINS POWER GENERATION	123-456-7890	www.CUMMINSPowerGENERATION.com	info@CUMMINSPowerGENERATION.com	Generator Manufacturer
YORK	123-456-7890	www.YORK.com	info@YORK.com	Air Handler Manufacturer
JOHNSON CONTROLS	123-456-7890	www.JOHNSONCONTROLS.com	info@JOHNSONCONTROLS.com	HVAC Manufacturer
PENTAIR	123-456-7890	www.PENTAIR.com	info@PENTAIR.com	Pump Manufacturer
RECOUSA	123-456-7890	www.RECOUSA.com	info@RECOUSA.com	Water Heater Manufacturer
GENERAL ELECTRIC	123-456-7890	www.GENERALELECTRIC.com	info@GENERALELECTRIC.com	Electrical Equipment Manufacturer
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111	1	020 Non Assignable: Elev, Stair	81.16	12	STAIR	A106
112	1	310 Office: Staff Off	81.16	12	OFFICE	A106
113	1	010 Non Assignable: Custodial Rm	257.44	12	CUSTODIAL	A106
114	1	310 Office: Staff Off	95.94	12	OFFICE	A106
115	1	310 Office: Staff Off	95.94	12	OFFICE	A106
116	1	310 Office: Staff Off	95.53	12	OFFICE	A106
117	1	310 Office: Staff Off	158.52	12	OFFICE	A106

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250 Research/Non-Class Laboratory
255 Research/Non-Class Laboratory Service
310 Office
315 Office Service
350 Conference Room
355 Conference Room Service
410 Study Space
420 Stack
430 Open-Stack Study Room
440 Processing Room
455 Study Service
510 Armory
515 Armory Service
520 Athletic or Physical Education
523 Athletic Facilities Spectator Seating
525 Athletic or Physical Education Service
530 Media Production
535 Media Production Service
540 Clinic (Non-Health Professions)
545 Clinic Service (Non-Health Professions)
550 Demonstration
555 Demonstration Service
560 Field Building
570 Animal Facilities
575 Animal Facilities Service
580 Greenhouse
585 Greenhouse Service
590 Other (All Purpose)
610 Assembly
615 Assembly Service
620 Exhibition
625 Exhibition Service

630 Food Facility
635 Food Facility Service
640 Day Care
645 Day Care Service
650 Lounge
655 Lounge Service
660 Merchandising
665 Merchandising Service
670 Recreation
675 Recreation Service
680 Meeting Room
685 Meeting Room Service
690 Locker Room
710 Central Computer/Tele-communication
715 Central Computer/Tele-communication Service
720 Shop
725 Shop Service
730 Central Storage
735 Central Storage Service
740 Vehicle Storage Facility
745 Vehicle Storage Facility Service
750 Central Service
755 Central Service Support
760 Hazardous Materials Storage
770 Hazardous Waste Storage
775 Hazardous Waste Service
810 Patient Bedroom
815 Patient Bedroom Service
820 Patient Bath
830 Nurse Station
835 Nurse Station Service
840 Surgery
845 Surgery Service
850 Treatment/Examination Clinic
855 Treatment/Examination Clinic Service
860 Diagnostic Service Laboratory
865 Diagnostic Service Laboratory Support
870 Health Care Central Supplies
880 Public Waiting
890 Staff On-Call Facility
895 Staff On-Call Facility Service
910 Sleep/Study without Toilet/Bath
919 Toilet/Bath
920 Sleep/Study with Toilet/Bath
935 Sleep/Study Service
950 Apartment
955 Apartment Service

970 House
M10 Men's Public Rest Rooms
W10 Women's Public Rest Rooms
U10 Unisex Restroom
W01 Bridge/Tunnel
W02 Elevator
W03 Escalator
W04 Loading Dock
W05 Lobby
W06 Public Corridor
W07 Stairway
WWW Circulation Area
X01 Custodial Supply Closet
X02 Janitor Room
X03 Public Rest Room
X04 Trash Room
XXX Building Service Area
Y01 Central Utility Plant
Y02 Fuel Room
Y03 Shaft
Y04 Utility/Mechanical Space
YYY Mechanical Area
ZZZ Structural Area