



Exhibit B

Standards for Delivery of Electronic Document Information April 16, 2014

OWNERSHIP OF PROJECT DESIGN AND DOCUMENTATION:

Upon payment in full to the Architect/Engineer for any services performed, the Owner shall have title to, own, and have the right to use for its purposes, without additional compensation to the Architect/Engineer, all Plans, Drawings and Specifications (at whatever stage of development) furnished to the Owner by the Architect/Engineer. In addition to the Plans, Drawings and Specifications furnished to the Owner, as part of Basic Services, a complete set of revised electronic Drawings and Specifications for the Project shall be provided. Such electronic Drawings and Specifications will not contain any reference to the Architect/Engineer. The Owner agrees that it will not sell, license or (except on its own projects) otherwise permit the use of such Plans, Drawings and Specifications or any prints made thereof. The Architect/Engineer shall have no responsibility to the Owner incident to the Owner's use of such Plans, Drawings and Specifications; and, to the extent permitted by law, the Owner agrees to indemnify and hold the Architect/Engineer harmless from and against any judgments against the Architect which result directly from the Owner's use of such Plans, Drawings and Specifications. The Architect/Engineer shall immediately notify the Owner, in writing, of any such claim asserted against the Architect/Engineer.

Due to the potential that the information contained on the CD ROM can be copied and modified by the Owner, or Owner's consultants, unintentionally or otherwise, the Architect shall remove all indications of its ownership, professional corporation name, and/or involvement from all documents contained within each file. The exception to this is the Adobe pdf file delivery requirements which should appear exactly the same as the project documents of record, including the A/E of Record professional seal, if applicable. For record purposes, the Architect shall keep an identical copy of all record CDs on file. Owner recognizes that use of such electronic media will be at the Owner's sole risk and without any liability, risk or legal exposure to the Architect. To the extent permitted by law, the Owner agrees to indemnify and hold the Architect harmless from and against any judgments against the Architect which result from the Owner's use of such electronic media. The Architect shall immediately notify the Owner in writing of any such claim asserted against the Architect.

EQUIPMENT DATABASE:

Johnson County utilizes a facility management information system for cataloging information on our new building equipment and monitoring the maintenance and repair history of it. In order to obtain complete information and make the system work successfully, we need input from all team members.

Facilities will provide you with the latest electronic version of the "EQUIP-DataCollection Template" (Microsoft Excel spreadsheet). Print copy attached. Each column represents a data field that needs to be completed and each row represents a separate piece of equipment. Parties are assigned certain data fields that they need to provide the information for; assignments are listed at the top of each

column. Data that you are required to provide shall be input into this document and submitted to your primary Facilities contact. Most fields should be self-explanatory, some comments follow. Enter “N/A” in a field if data is not needed. Questions should be directed to your primary Facilities contact.

COLUMN	FIELD NAME	COMMENT
E	DATE OF UPDATE	Enter the date that you conclude your data entry and submit to Johnson County. Override previous date entered by others.
G	EQUIPMENT STANDARD	Use the exact name and spelling from the adjacent tab, “EQUIPMENT STANDARDS.” May be best to copy/paste for this.
H	EQUIPMENT NAME	Use the common name that is used on drawings. “Air Handler-1” or “VAV-5” are good examples, make sure that abbreviations make clear what the type/purpose of the equipment is.
I	SUBCOMPONENT OF	Examples are VAV boxes or Return Fans associated with an AHU (the AHU being the parent); the name of the AHU would be entered here. Use the identical label that you used under “EQUIPMENT NAME” for this field.
J	BAR CODE LABEL	Adhere the bar code to the equipment and enter the number on the bar code.
R	CAPACITY	Enter the number for the specification capacity for the equipment; CFM of air, tons of cooling, gallons per minute, BTU per hour, etc. The unit is named in the “UNIT” (S field)
S	UNITS	Enter the unit that “CAPACITY” (R field) is referencing
T	REFRIG. TYPE	An example would be “R-134A”
U	QUANTITY (in pounds)	The quantity of refrigerant identified in “REFRIG. TYPE”
V	CONDITION	Choose from the pull-down menu.
W	COMMENTS	Anyone can add comments or explanations here. Do not overwrite previous comments, just add to them.
X, Y, Z	VENDOR/EXPIRATION. DATE/DESCRIPTION	Enter data in these fields if a service contract is in place for the equipment in addition to the product warranty.
AA, AB, AC	VENDOR/EXPIRATION DATE/DESCRIPTION	Enter data for the warranty required by the specifications of the project. The start date is the date of Substantial Completion, not delivery or purchase date. This is per contract.
AD	MONTHLY STANDARD MAINTENANCE ITEMS	Enter manufacturer’s recommended monthly maintenance items, for example, “check belt tension, check oil level” and so forth.
AE	3-MONTH STANDARD MAINTENANCE ITEMS	Enter manufacturer’s recommended quarterly maintenance items that are different from or in addition to monthly items.
AF	6-MONTH STANDARD MAINTENANCE ITEMS	Enter manufacturer’s recommended bi-annual maintenance items that are different from or in addition to monthly and quarterly items.
AG	YEARLY STANDARD MAINTENANCE ITEMS	Enter manufacturer’s recommended annual maintenance items that are different from or in addition to monthly, quarterly and bi-annual maintenance items.

ACCEPTABLE DOCUMENT PROGRAMS FOR DELIVERABLES

1. Drawing preference: Autodesk AutoCad 2013. If project was prepared in Revit, all models shall be provided. Drawing sheets shall also be converted to AutoCad 2013 and provided separately.
2. Drawing secondary preference: Autodesk Revit, no more than one version old.
3. Markups: PDF.
4. Project Manual or Specifications: PDF and Microsoft Word
5. Construction Communications (ASI's, RFI's, Construction Change Directives and Change Orders): PDF.
6. Data: Microsoft Excel
7. Submittals: PDF
8. Operations and Maintenance Manuals: PDF
9. Warranties: PDF

FINAL SUBMITTAL CONVENTIONS:

1. Drawings: all AutoCad and PDF drawings shall be submitted as individual files. File name shall be sheet number without spaces. Ex: "A301" "M102" "K200" "SE100"
2. Markups: drawing set may be combined into one or more volumes of drawings, as was intended for printing and distribution of original documents during construction. Each drawing shall be bookmarked.
3. Project Manual or Specifications: PDF format shall include bookmarks for each individual document or section. Word format shall be a separate file for each individual document or section.
4. Construction Communications: may be combined into one PDF for each type. Each document shall be bookmarked.
5. Submittals: all submittals shall be submitted as individual files and placed in separate folders for each specification division. File name shall include specification section, contractor name and description (subject) of submittal. Ex: "099123 Acme Painters-Paint"
6. Operations and Maintenance Manuals: all O&M's shall be submitted as individual files. File name shall include RS Means classification number and description (subject) of submittal. Ex: "D3033 140 1030 Chiller"
7. Warranties: provide original paper copy and PDF version. If paper has inked signatures or original stamps or seals, PDF shall be a scan of that document.

PAPER OR ELECTRONIC FORMAT?

1. All content shall be developed electronically. Examples:
 - a. Drawings shall be developed from Revit or AutoCad.
 - b. Drawing PDF's shall be created through Revit or AutoCad, as full-sized sheets.
 - c. Other documents shall be created in Microsoft Office products.
 - d. In the rare event that a sketch or detail is hand drawn, it shall be scanned as a .jpeg or PDF and attached to its closest-related drawing or specification.

2. All content that is marked up by any entity other than the organization that developed it originally, shall be submitted in PDF format and marked up electronically using PDF annotation tools.
3. Markups or comments on paper are not acceptable unless there is a compelling reason to do so, and the need is explained to and approved by Johnson County Facilities in advance.
 - a. For final submittal, all paper markups shall be scanned as PDF's and submitted electronically.
 - b. At final submittal, if a document exists with both paper markups and electronic markups, all paper markups shall be transferred by the responsible party to the electronic document; submittal of parallel (multiple version) documents is not acceptable.

ELECTRONIC DOCUMENT STANDARDS

1. Revit:
 - a. All equipment that is to be included in the "EQUIP-DataCollection Template" shall be included in the Revit model and labeled in Revit with the same name designated in the spreadsheet.
 - b. All equipment data fields that are to be provided for the "EQUIP-DataCollection Template" shall also be input into the Revit model components, as Project Parameters.
 - c. When a project consists of multiple Revit models, the file folder or media that they are submitted in shall be structured such that the models are linked properly and the complete model can be opened immediately, without needing additional steps. The file folder or media shall include a simple text file, titled "READ ME FIRST" that includes instructions explaining how to open and how the Owner should permanently file the documents.
2. AutoCad:
 - a. All equipment that is to be included in the "EQUIP-DataCollection Template" shall be drawn in the AutoCad model. In addition to the standard drawing of the equipment, it shall include a polyline outline or industry standard drawing block of the equipment on a layer titled "EQ".
 - b. When an AutoCad drawing uses xreferencing, all necessary .dwg files shall be submitted. The file folder or media that the .dwg files are submitted in shall be structured such that the .dwg files are linked properly and each complete drawing can be opened immediately, without needing additional steps to redefine drawing paths, etc. The file folder or media shall include a simple text file, titled "READ ME FIRST" that includes instructions explaining how to open and how the Owner should permanently file the documents to maintain the integrity/continuity of the xrefs.

DELIVERABLES TO OWNER:

At each review phase and Bid Phase:

(1) one half size set of Drawings

(1) one full set of Project Manual

(1) copy of Drawings and Project Manual in electronic medium as required above

At Substantial Completion:

Complete the following a minimum of 5 days prior to requesting inspection for determining date of Substantial Completion.

1. Completed Equipment Database Spreadsheet as identified above.
2. All floor plans and roof plans in AutoCad, separate files for each floor. Roofs may be combined in one plan, regardless of elevation.
3. Furniture plans for each floor, as separate AutoCad files.
4. Polylined floor plans and roof plan, as separate AutoCad files.
5. Preliminary set of as-built drawings, current to the time of submittal, in PDF format.
6. Closeout submittals including project record documents, operation and maintenance manuals, construction photographic documentation and other required final record information.
7. Warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

See below, "Standards for CAFM/CAD Polylines and Room Finish Schedules" for instructions on required polylines and room finish schedules.

At Final Completion:

Complete the following a minimum of 5 days prior to requesting Final Completion. Provide updated versions of each, if required due to changes in data occurring after Substantial Completion submittal was made.

1. Contractor shall submit final set of as-built drawings, in PDF format, to Architect or Engineer. Architect or Engineer shall incorporate all ASI's, RFI's, CCD's and Change Orders into base Revit, AutoCad, Word or Excel files as necessary, and submit those documents to the Owner in formats and as required above.
2. Equipment Database Spreadsheet.
3. All floor plans and roof plans in AutoCad, separate files for each floor. Roofs may be combined in one plan, regardless of elevation.
4. Furniture plans for each floor, as separate AutoCad files.
5. Polylined floor plans and roof plan, as separate AutoCad files.
6. All Revit models comprising the Project.
7. Closeout submittals including project record documents, operation and maintenance manuals, construction photographic documentation and other required final record information.
8. Warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

Standards for CAFM/CAD Polylines and Room Finish Schedules

Purpose:

This document will describe the standards established by the Johnson County Facilities Management Department for deliverables to be incorporated into the County's Computer Aided Facilities Management (CAFM) system. The CAFM system is integral to the department's business process, and entering data for existing buildings is the most time consuming portion of this process. Having the data delivered in a prescribed format when the building is constructed or remodeled allows for quick and accurate entry into the system, and puts the building "on-line" upon occupancy. The deliverables include a set of CAD Drawings with all space accounted for in polylines; space standards and classification for each polyline; the room finish schedule, associated with the room level polylines in an Excel Spreadsheet; and the locations of mechanical equipment, along with the supporting data.

Background:

The Johnson County Facilities Department uses Archibus/FM[®] as its CAFM software. Archibus is a database driven system that ties attributes to CAD drawings. The software has specific requirements for the naming of the layers it uses in AutoCAD. This document will explain the methods to be used to create the polylines needed.

There are two methods of capturing the building square footage in Archibus – *Composite Inventory* and *All-Room Inventory*. Johnson County uses both methods. In the Composite Inventory method, space is delineated as *vertical penetration*, *service*, and *group*. Each of these is captured on a separate CAD layer, with attributes describing the standard for the type of space. This method allows for a complete accounting for all space on a floor. The sum of the vertical penetration, service and group areas equal the internal gross. It also allows for tracking useable space versus building common. Johnson County Facilities uses this method for tracking the space in its buildings and assigning department use.

The All-Room Inventory method delineates **all** space as a *room*. The database allows the user to define the space as vertical, service, group, etc, through room category, type, and standard tables. Both methods can be captured on the same drawing, using the room attribute tables listed above to define the space. In this method, all polylines are drawn to the finished surface of the dominant portion of all walls or to a change in flooring or ceiling material. The sum of the area of the room polylines will not equal that of the internal gross, since none of the wall area will be included. Workstation room polylines, defined by systems furniture locations, will be provided by the furniture vendor or will be done in-house by Facilities staff.

The entire space in the building will be polylined to the room level. The polylines will be drawn to the finished surface of the enclosing walls. In areas where the same flooring extends through a doorway, the polyline should be drawn to the centerline of that doorjamb.

The room polylines will be uniquely identified for each floor of the building. Wherever possible, the number from the as-built drawings can be used. Where multiple polylines exist within a “room” a sequential numbering system may be used to further delineate the space. (e.g. Room 1100 has two distinct room finish motifs. The polylines are drawn and numbered 1100-01 and 1100-02) Numbering Schema for building common areas should reflect the as-built numbering in a similar fashion. The Johnson County Facilities staff will provide guidance when needed.

The Johnson County Facilities Department is using a standard based on the BOMA publication ANSI/BOMA Z65.1-1996, *Standard Method for Measuring Floor Area in Office Buildings* and the supplemental IFMA/BOMA 2007 *A Unified Approach for measuring Office Space*. There is one exception of note: The dominant portion will always be calculated as if all window systems comprise *less than 50%* of the vertical permanent outer building wall, as seen in illustration B on page 5 of Z65.1-1996.

For all new buildings, the All-Room inventory will be employed. Service areas and vertical penetrations will be drawn to the inside finished surface of the dominant portion as discussed above.

STAIRS

Stairs will be drawn to include the area of the treads and landings from the lowest level of the staircase for non-monumental stairs or from the above for monumental stairs, making sure to count the floor area below the stairs on the lowest level. For further information, see fig. 14 in the IFMA/BOMA document.

VOID AREAS

Void areas are defined as the absence of a floor inside the dominant portion where a floor might otherwise be expected or measured, that are typically in the plane of the upper floors of multi-story atria or lobbies, light wells or the area adjacent to the partial-floor mezzanine. Include the area of the enclosing walls or partial height walls as part of the void and if no enclosing walls or a railing, measure to the edge of the floor slab. Major Vertical penetrations, by definition are not void areas. These areas are included in the internal gross of the floor, but are not part of useable or plannable space.

DEPARTMENT AREAS

Department areas are to be drawn to capture all of the floor space within a department’s space. There are four primary categories to capture: Staff space, staff support space, public service and circulation.

Staff Space

Private offices – follow the room polyline guidelines

System Furniture Workstations – polyline the workstation to include the enclosing panels, using the centerline for shared panels. Effort should be made to create a polyline for each personnel space

allocated. For workstations enclosed on 2 two or three sides, polyline based on the virtual space that would be allocated as if it were built out.

Carrels – polyline to include the panels as describe above and extend beyond the wing panels far enough to allow for a chair.

Staff Support Space

For areas defined by walls or systems furniture, follow the same guidelines as described above in Staff Space.

For areas in open office spaces – file cabinets, copiers, etc. – enclose the area of the equipment or cabinets allowing for a reasonable work zone in front of the item(s). Individual file cabinets may be excluded, but banks of two or more should be grouped and polylined as one. Large groupings of contiguous file cabinets and/or equipment in an open office setting may be enclosed in one large polyline.

Public Service Space

Public Service Space is defined as the areas a department needs to perform its core function in serving the public. A few examples are courtrooms, interview rooms, clinic exam rooms, and reception areas. The same guidelines apply to these types of space as the staff and staff support spaces.

Circulation

Once all of the staff, staff support and public service space in a department’s overall layout have been polylined, the remainder is classified as circulation. This space should be polylined using best judgment taking into consideration the following:

- The density and number of the spaces
- The likelihood of these spaces to be altered in reconfigurations
- The fact that each of these polylines will need its own room number in the system

Explanation of Terminology:

The terminology for building areas is different for Archibus and BOMA. Following is a comparison of those terms. The Archibus terminology will be used throughout the remainder of this document.

Table 1. Comparison of Terms

Archibus	BOMA
<p>Gross External Gross Area - All floor area that is totally enclosed within the building envelope. Internal Gross Area- The total floor area enclosed within, but not including, the external building wall.</p>	<p>GROSS BUILDING AREA The total constructed area of the building computed by measuring to the outside finished surface of permanent outer building walls, without any deductions. All enclosed floors of the building, including basements, garages, mechanical equipment floors, penthouses and the like are calculated.</p>

<p>Vertical penetration Areas in a building (and their enclosing walls) that serve more than one floor of the building, but do not exclusively serve a tenant occupying offices on more than one floor. Stairs, elevator shafts, flues, pipe shafts, and vertical ducts that serve the entire building are examples of vertical penetration areas. An elevator or stairwell that exclusively serves a specific tenant on a particular floor does not constitute a vertical penetration area.</p>	<p>MAJOR VERTICAL PENETRATION Stairs, elevator shafts, flues, pipe shafts, vertical ducts and the like, and their enclosing walls. Atria, lightwells and similar penetrations above the finished floor are included in the definition. Not included, however, are vertical penetrations built for private use of a tenant occupying OFFICE AREAs on more than one floor. Structural columns, openings for vertical electric cable or telephone distributions, and openings for plumbing lines are not considered to be MAJOR VERTICAL PENETRATIONS.</p>
<p>service area Floor area in a facility that is necessary for the operation of the facility and is not available for general occupancy. Examples of service areas are primary circulation, lobbies, mechanical rooms, and rest rooms.</p>	<p>BUILDING COMMON AREA The area of a building that provide services to building tenants but which are not included in the OFFICE AREA ... of any specific tenant. These areas may include, but shall not be limited to, main and auxiliary lobbies, atrium spaces at the level of the finished floor, ... security desks, conference rooms, lounges or vending areas, food service facilities, ... mail rooms, ... and building core and service areas such as fully enclosed mechanical or equipment rooms. Specifically excluded ... are FLOOR COMMON AREAS, ... and MAJOR VERTICAL PENETRATIONS.</p> <p>FLOOR COMMON AREAS The areas on a floor such as washrooms, janitorial closets, electrical rooms, telephone rooms, elevator lobbies and public corridors which are available primarily for the use of tenants on that floor.</p>
<p>GROUP AREA A continuous section of usable floor area, i.e. departmental areas (such as a group of offices assigned to a particular department), common areas shared by multiple departments (such as a lounge or a conference room), or suites rented to tenants.</p>	<p>USABLE AREA "The measured area of an OFFICE AREA, ... or BUILDING COMMON AREA on a floor.</p>
<p>ROOM AREA Rooms can be areas enclosed by walls, or partitioned areas such as workstations.</p>	<p>OFFICE AREA The area where a tenant normally houses personnel and/or furniture.</p>

Rooms can house personnel, storage areas, reception areas, computer rooms, file rooms, libraries, and so forth. By assigning room categories and room types to rooms, you can classify rooms as occupiable and non-occupiable.

Polyline Standards

The drawing name for the polylines will be *bldgname-A-floorFM* (e.g. Courthouse-A-01FM.dwg). This drawing will contain all of the polyline layers for a given floor of the building. This drawing shall contain only those layers and should have the architectural drawing to that floor x-referenced as an overlay.

LAYERS

Table 2. CAD Layers

ITEM	LAYER NAME	COLOR
EXTERNAL & INTERNAL GROSS	GROS	magenta
VERTICAL PENETRATION	VERT	200
SERVICE AREA	SERV	green
GROUP	GP	12
ROOMS	RM	cyan

ORDER

The order the polylines shall be drawn is as follows:

- External Gross
- Internal Gross
- Vertical Penetration
- Service Areas
- Groups
- Rooms

ADJACENCY

Vertical Penetration (VERT)

VERT polylines are drawn to the finished surface on the SERV, GP or RM side of the enclosing walls or the Dominant Portion where adjacent to the Internal GROSS.

SERVICE AREA (SERV)

SERV is drawn to the finished surface on the GP or RM side of the enclosing walls, the finished surface when adjacent to VERT or the Dominant Portion where adjacent to the Internal GROSS.

Where Service areas are adjacent, the shared wall can be assigned to either, center line is not necessary.

GROUP (GP)

GP is drawn to the finished surface inside surface or the Dominant Portion where adjacent to the Internal GROSS and to centerline when adjacent to another GP.

ROOM (RM)

RM is always drawn to the finished surface.