

# **BROWARD<sup>®</sup> COLLEGE**

## **Vendor Guidelines and Requirements for As-Builts**

**January 2020**

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## DEFINITIONS

### **As-Builts**

An As-Built Set is a revised set of drawings submitted by a contractor/vendor upon completion of a project or a particular job. It reflects all changes made in relation to the specifications and working drawings during the construction process, and shows the exact dimensions, geometry, nomenclature, and location of all elements of the work completed under the contract. As-Builts are also called Record Drawings.

While the Construction Documents will be used as a base to produce the As-Built Set, the set should be properly labeled and dated as "As-Built" and should reflect the reality of the final result in the real world. The As-Built Set should have its own cover sheet and page index. Notes, symbols and legends should be part of the set as required to support the legibility of the documents. Legal disclaimers and notes to contractors should not be part of the set if related to the construction process, since the construction process is completed by the time the As-Built set is produced.

The As-Built Set is an essential document which should represent the final product "as is", instead of a document of intention like a construction document. Broward College uses these documents for day to day operations and maintenance purposes, as well as for planning and future work to be performed on our facilities. Our staff requires a PDF version of the As-Built Set for fast access, viewing, and printing, as well as a CAD version, for planning purposes and future use.

## **GENERAL EXPECTATIONS**

### **Delivery Date**

The As-Built Set should be delivered by the Vendor no later than twenty (20) working days after the signing of the CO (Certificate of Occupancy) or CC (Certificate of Completion) by the local building and safety authorities. The contract between Broward College and the Vendor will not be considered completed and fulfilled until an acceptable set of As-Builts is received. The GC and BC SPM (Senior Project Manager) should review the As-Builts before submittal and before the final pay application. Retainage will not be paid in full until the approved As-Built Set is submitted.

### **Acceptable Delivery Formats**

The As-Built Set should be delivered electronically both in the forms of PDF and CAD (dwg) files set to 24x36. If the original set was produced in REVIT, the vendor is required to convert these files to AutoCad (dwg) files before submitting. The PDF set should be the result of files conversion from other digital media like AutoCAD. A hard copy is not required if electronic signature and stamp can be added to the document. The As-Built Set is not the Construction Set or the Permit set.

### **Unacceptable Delivery Formats**

The Final As-Built Set should not consist of scanned hand sketches, pencil drawings or photographs. Sets of documents labeled "construction documents" or "permit set" are not acceptable. PDF sets with redlines, hand written notes, and client or vendor hand written comments are not acceptable. Documents that do not accurately represent the final, completed, and physical result of the job are not acceptable.

## **Expected Drawings**

The As-Built Set should include all relevant pages pertaining to all technical aspects of the job performed, this might include some, or all, of the following: Site/Landscaping, Architectural, MEP, Structural, Lighting, Finishes, FFE.

Floor Plans, RCP's, Elevations, Sections, Details and other relevant documents are expected, as needed, to document all the work performed.

All tables and technical calculations and details related to MEP should be shown as they were shown on the construction documents (including changes made during construction) as they are essential information for Broward College Facilities Management staff as they perform their maintenance duties.

## **OM and Related Documents**

The Vendor should provide, together with the As-Built Set, OM's (Operating Manuals) for all the equipment, appliances, and machinery installed in the facility.

## **As-Built Specific Requirements**

The As-Built Set starts to be produced when construction begins. On site, notes and comments should constantly be added to a copy of the permit set during construction to later be used as a journal which will inform the final version of the As-Built. It is the responsibility of the GC to keep this "journal" up to date.

It is highly recommended that an electronic version of the As-Built be kept up to date based on the GC's journal, change orders, and other modifications to the original design. By keeping a CAD file up to date in real time, when the CO is issued, the CAD version of the As-Builts is almost completed.

Communication between the Architect, the Engineers and the GC is paramount in the production of a proper set of As-Builts.

If the As-Built set is produced in its entirety after construction ended, the final product will certainly be lacking.

Cross out words such as "equal to" or "similar to" and replace them with the specific information used during the construction process.

When adding detail to the drawings, make sure to use the same scale as was used in the original drawings.

Any values or dimensions that are different than the ones shown on the original drawings should be changed.

Provide the exact details of changes or additional information, including (but not limited to) fabrication, erection, installation, location, sizing, material, dimension, etc.

Provide all necessary information on the contractor's designed systems.

Include elevations, grade modifications, and related information on piping utilities, earthwork, etc.

Record all unexpected obstructions or difficulties found on the job site.

The person preparing the As-Built Drawings must date every sheet, whether or not there are changes in that plan sheet. The set of As-Built Drawings must be a complete package, not just a collection of the pages containing changes.

Make sure that supplemental pages containing plan modification sketches have been sealed and signed by the registrant author of those changes—for example, the designer, engineer, or contractor's registrant who is providing the sketches.

If an additional sheet is added to the drawings, use the same sheet size, scale, and legend as the one being replaced or being referenced.

Include all changes arising out of the final inspection process.

Refer to specific actions rather than referencing change-order numbers or related documents. The drawings should be a stand-alone package whenever possible.

Use a fully written explanation to describe changes. Avoid abbreviations or shorthand notes.

Do not add hand written text to the drawings.

Be sure to add revision notes and corrections to the affected section view, general notes, specific notes, profiles, and schedules. Be consistent when adding notes and use the same figure or shape to denote changes or revisions.

Add all related shop drawings that are necessary as an appendix to the As-Built Drawings. On the applicable pages, make sure there are references to this appendix.

Update the index sheet to show the latest drawing changes or additions.

Be specific when making notes on underground utilities, showing the exact location, depth, and materials used.

When finished, stamp title sheet with " AS-BUILT," including contractor's name, signature, date, and other relevant information.

Every sheet in the As-Built Set should be labeled "AS-BUILT", including those sheets which have not been modified from the original Permit Set.

All as-builts must be submitted to, and reviewed by, BC Senior Project Manager, Architect of Record, Engineer of Record, and GC at the end of the project. BC SPM will coordinate.

## **CAD File Request**

The GC must request the CAD files used to produce the permit set. The owner will facilitate communication between the GC and the Architect to ensure that the latest CAD files are sent to the GC.

## **Partial Submissions**

The GC is required to submit a copy of the field journal set showing all the changes and notes as part of the requirements needed to complete a partial payment application. If the GC is properly updating the CAD file with all modification notes as the job progresses, then also a PDF set of the current CAD file would be acceptable.

## **Final Submission**

The GC has 20 working days, after the completion of the job, to submit the final version of the As-Builts to the Owner. The final submittal should include:

- 1- The CAD files reflecting the final product as it stands, including all notes to call attention to the areas where changes from the original design intent have occurred. All sections of the set must be included (site work, architectural, demolition, MEP, etc.)
- 2- A digital PDF plot set produced directly from the CAD file.
- 3- A signed and stamped set plotted in 24x36 unless all parties can stamp and sign the set electronically.

## **FILE REQUIREMENTS**

### **Cad Documents**

The CAD (dwg) documents should be clean and clear of irrelevant blocks and information both in paper space and model space. The Vendor should make sure that all previous versions of objects, drafting process support elements, or other unused objects are deleted. All unused external references, blocks, and layers should be deleted and purged from each file.

Plans and elevations should always be placed with their lower left corner at insertion point 0,0,0.

Layers naming and description should follow USNCS (United States National CAD Standard) as adopted by the AIA (American Institute of Architects).

All external reference files required by the drawings should be delivered with the CAD files.

A professionally produced CAD document is expected, with attention to detail.

Sheet size to be set to 24x36.

### **PDF Documents**

The Vendor should deliver one single PDF file combining the full set of documents. The set in PDF should contain all pages (Architectural, MEP, Structural, etc.) in order, and properly identified in a page index on the cover sheet. Sheet size should be set to 24x36.

The file name should be the project number plus the letters AB (As-Built) at the end. Example: BC\_2048\_C18\_01\_**AB**



## **Folders**

The As-Built package will include a series of documents: CAD files, CAD x-ref files and a PDF set. The set should be organized in a simple, clean, logical way. There should not be a large number of folders and sub-folders, there should not be multiple PDFs, there should not be old CAD files or support files that have no bearing on the final As-Built set.

The Architect should not just create a zip file of their working folder and send it to the PM calling it an As-Built set.

Files should be named logically so they can be identified easily, and no irrelevant files should be included.