

**103.103 – ELECTRONIC DELIVERABLE GUIDELINE**

## PART 1 - INTRODUCTION

## 1.01 OVERVIEW

- A. This document contains information related to electronic deliverable information in conjunction with BJC's Quality Assurance and Quality Control program.
- B. The following electronic deliverable requirements are required when submitting non-printed, electronic information during the design phases. These requirements include most common file types and deliverables and are not limited to Autocad files.

## PART 2 - GUIDELINE

## 2.01 REFERENCED STANDARDS

- A. National Cad Standards. BJC HealthCare recognizes the most current version of the United States National Cad Standards, as modified herein. This includes the following:
  - 1. American Institute of Architects (AIA), CAD Layer Guideline
  - 2. Construction Specifications Institute (CSI), Uniform Drawing System (Modules 1-8)
  - 3. National Institute of Building Sciences (NIBS), BIM Implementation and Plotting Guidelines.

## 2.02 SOFTWARE

- A. BJC utilizes several software programs for managing the planning, design and construction of the projects. These programs include but are not limited to the following:
- B. Programs for drafting/drawing files: Some employees have access to Autodesk Autocad 2015. Some employees may have earlier versions. Coordinate requirements with requesting individual.
- C. Programs for portable document format files: Employees have access to Adobe Reader. Some employees have access to Adobe Acrobat Pro and Bluebeam.
- D. Programs for image and graphics-oriented programs: All employees have access to Microsoft PowerPoint and Publisher. Some employees have access to Sketchup and Photoshop.
- E. Programs for documents and spreadsheets: All employees have access to Microsoft Word and Excel.

**PART 3 - DOCUMENTATION****3.01 ELECTRONIC DELIVERABLE FORMAT**

- A. General. Electronic files delivered to the Owner as required or as directed shall follow the formatting requirements.
- B. Quality Level. Print Quality shall be a minimum of 300 dpi for all standard documents and a minimum of 600 dpi for higher quality presentations and renderings unless otherwise requested. Higher resolution images may be required as directed for large format super-graphic images, artwork and other similar type uses.
- C. File Names. Electronic files shall follow a common naming convention identified herein. The information shall contain the BJC project number, the facility/hospital, the building/project descriptor and the purpose of the file.
  - 1. Example: 16C013 MBMC West Pavilion Fitout– DD REVIEW SET
- D. Progress and Owner Review Sets. Unless otherwise directed, provide portable document format (pdf) files of the drawing set and project manual.
  - 1. Provide one single pdf file, in the order identified in the Table of Contents, for each volume of the project manual. Do not provide individual pdf files for each section.
  - 2. Provide one single pdf file for the entire drawing set (AOR and EOR) unless the file size becomes greater than 100 Mb.
    - a. Files over 100Mb. At such point, provide one pdf file containing Civil, Landscape, Architecture, Interior Architecture, Clinical Equipment as applicable. Provide a second set containing Mechanical, Plumbing, Medical Gas, Fire Protection, Electrical and Telecommunications as applicable. Each package shall have its own cover page and marked as package 1 of 2 and package 2 of 2 respectively.
- E. Construction Document Sets. As issued for the purpose of bidding, permitting and construction activities, comply with the conditions for Progress and Owner Review Sets listed above.
- F. Upon request, provide electronic drawing files including Autocad drawing files and the building information model. Coordinate specific requirements with Owner.

**3.02 DRAWING TEMPLATES AND STANDARDS**

- A. General. Drawing Sets shall be delivered to the Owner with the templates provided and in accordance with the organization requirements contained herein.

B. General Sheet Organization and Numbering. The following table identifies the general sheet organization and basic numbering requirements and shall apply to all BJC projects. For sheets depicting demolition Work, include the letter “D” after the discipline letter.

Table – Standard Sheet Organization and Numbering

|   |   | Civil Engineering                                | Landscape Architecture          | Structural                      | Architecture   | Interior Architecture           | Clinical Equipment  | Mechanical Engineering          | Plumbing Engineering                  | Medical Gas                           | Fire Protection Engineering           | Electrical Engineering                | Telecommunications              |
|---|---|--|---------------------------------|---------------------------------|--|---------------------------------|---------------------|---------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------|
|   |   | C  | L                               | S                               | A  | I                               | Q                   | M                               | P                                     | G                                     | F                                     | E                                     | T                               |
| 0 | General Information                                       | Symbols, abbrev., general notes                  | Symbols, abbrev., general notes | Symbols, abbrev., general notes | Cover sheet, location map, symbols, abbrev., general notes, sheet index, codes, phasing, | Symbols, abbrev., general notes |                     | Symbols, abbrev., general notes | Symbols, abbrev., general notes       | Symbols, abbrev., general notes       | Symbols, abbrev., general notes       | Symbols, abbrev., general notes       | Symbols, abbrev., general notes |
| 1 | All Views Of Exterior Site Elements                       | Grading plans, SWPP, site utility, drainage maps | Planting and irrigation plans   |                                 | Site plans   |                                 |                     | Site utility                    | Site utility                          | Site utility                          | Site utility                          | Site utility                          | Site utility                    |
| 2 | Horizontal Views Of Interior Building Elements - Floor    |  |                                 | Structural plans                | Floor plans  | Finish floor plans              | Equipment plans     | Mech plans                      | Plumb plans                           | Med Gas plans                         | Fire protection plans                 | Elec plans                            | Telecom plans                   |
| 3 | Horizontal Views Of Interior Building Elements - Overhead |  |                                 |                                 | Ceiling plans  | Finish ceiling plans            |                     |                                 |                                       |                                       |                                       |                                       |                                 |
| 4 | Horizontal Views Of Interior Building Elements - Enlarged |  |                                 |                                 | Enlarged floor plans   | Enlarged finish plans           |                     | Enlarged plans                  | Enlarged plans                        | Enlarged plans                        | Enlarged plans                        | Enlarged plans                        | Enlarged plans                  |
| 5 | Vertical Views Of Exterior Building Elements              |  |                                 |                                 | Building elevations and overall building sections  |                                 |                     |                                 |                                       |                                       |                                       |                                       |                                 |
| 6 | Sectional Views Of Building Elements                      | Sewer profiles                                   |                                 | Section details                 | Wall sections  |                                 |                     | Interstitial space coord        | Interstitial space coord              | Interstitial space coord              | Interstitial space coord              | Interstitial space coord              |                                 |
| 7 | Detail Views Of Exterior Building Elements                | Details  | Details                         | Details                         | Exterior details   |                                 |                     |                                 |                                       |                                       |                                       |                                       |                                 |
| 8 | Detail Views Of Interior Building Elements                |  |                                 |                                 | Interior elevations and details  | Interior elevations and details |                     | Distrib. diagrams, details      | Distrib. risers and diagrams, details | Distrib. risers and diagrams, details | Distrib. risers and diagrams, details | Distrib. risers and diagrams, details | Distrib. diagrams, details      |
| 9 | Schedules   |  |                                 | Structural schedules            | Door, window schedules   | Finish schedules                | Equipment schedules | Mech schedules                  | Plumbing schedules                    | Med gas schedules                     |                                       | Elec schedules                        |                                 |

- C. Full Sheet Numbering. A sheet shall be identified by the letter abbreviation of the authoring discipline followed by the number associated with the type of information being depicted on the sheet. This will be followed by a decimal point and up to three alpha-numeric characters after the decimal.
  - 1. Example. An architectural floor plan may be referenced as A2.1, A2.01, A2.100, A2.001. On some large projects, floor plans may be broken into quadrant plans with match lines. In such cases, it is permissible to define the plan relative to the quadrant. For instance, you may name the sheet A2.1A and A2.1B. It is the decision of the architect, based on the anticipated sheets and the drawing layout, to determine the appropriate numbering system.
- D. Common Numbering System for Disciplines. For floor plans and other similar common plan sheets between disciplines, **ALL DISCIPLINES SHALL BE COORDINATED WITH THE SIMILAR SHEET NUMBERING SYSTEM.** For example, the architectural sheet numbered A2.1B shall be numbered M2.1B for the mechanical discipline and shall contain the same background information/extents.
- E. Standard titleblock templates are included in the Manual of Practice and are required to be used by the AOR and EOR for all BJC projects. The titleblock is available in the sheet sizes identified below.
- F. Cover Sheet. A cover sheet template is included in the Manual of Practice and is required to be used by the AOR and EOR for all BJC projects. The cover sheet template is available in the sheet sizes identified below.
- G. Sheet Sizes. Provide standard sheet sizes in either 24" x 36" or 30" x 42", landscape orientation.
- H. 36" x 48" sheet sizes are prohibited unless otherwise approved by the BJC Corporate Architect.

### 3.03 AUTOCAD LAYER

- A. When editable electronic drawing files are requested, provide drawings with layering consistent with the AIA CAD Layering Guideline. Coordinate with facilities for other specific requirements.

PART 4 - SUPPORTING INFORMATION – Not used.

END OF DOCUMENT

**RESPONSIBILITY MATRIX**

The following matrix identifies those individuals, roles or departments responsible for maintaining the accuracy of the information and those responsible for providing input. Refer to Preface for detailed explanation.

|                      | BJC HealthCare                      |                          |                          |                                     |                          |                          |                                 |                          |                          |                          |                           |                                  | Hospital/Entity          |                            |                          |                          |                          |                          |
|----------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|---------------------------------|--------------------------|--------------------------|--------------------------|---------------------------|----------------------------------|--------------------------|----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                      | PD&C                                |                          |                          |                                     |                          |                          | Clinical Asset Management (CAM) | Risk Management          | Real Estate              | Ergonomics               | Infection Prevention (IP) | Info Systems, Data, Telecom (IS) | Other:                   | Standards Review Committee | Facilities Engineering   | Housekeeping             | Security                 | Other:                   |
| Corporate Architect  | Corporate Engineer                  | Director of Planning     | Director of Design       | Director of Construction            | Other:                   |                          |                                 |                          |                          |                          |                           |                                  |                          |                            |                          |                          |                          |                          |
| Primary Authorship   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Secondary Authorship | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**DOCUMENT REVISION HISTORY**

The following table indicates the date the document originated and any subsequent revisions.

| Document 103.103 – Electronic Deliverable Guideline |                                |             |
|---|--------------------------------|-------------|
| Issue   | Description of Issue           | Prepared by |
| 2016 v1   | Original Issue                 | G. Zipfel   |
| 2018 v1   | Moved from 104.103 and updated | G. Zipfel   |
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