DSA PR 18-04

PROCEDURE: ELECTRONIC PLAN REVIEW FOR DESIGN PROFESSIONALS

Division of the State Architect (DSA) documents referenced within this publication are available on the DSA Forms or DSA Publications webpages.

PURPOSE

This procedure (PR) is one of multiple documents that in combination describe the process and requirements for Electronic Plan Review (EPR) of projects under DSA jurisdiction. Since October 2018 the review and approval of all project applications and post approval documents have been processed in digital format through this EPR procedure, which reduces resource consumption and aligns with the sustainability policies and goals of both the Governor's Office and the Department of General Services.

SCOPE

This document covers the duties of design professionals participating in EPR for conventional project applications, including how to prepare documents prior to submission, the process for document submission, how to respond to plan review comments, as well as corresponding processes for post approval documents. It does not cover the duties and responsibilities of DSA staff, which are addressed in separate internal documents. Similarly, this document does not cover project applications using the over-the-counter (OTC) application process nor the duties and responsibilities of external consultant plan reviewers. These EPR subjects are addressed in the following documents:

- *PR 18-05: Electronic Plan Review for Consultant Plan Reviewers*
- *PR 18-09: Electronic Plan Review for Over-the-Counter Projects*

This document does not address the sequence, schedule, or meeting requirements of the back check, which is covered in *PR 24-01: Back Check Procedure for Design Professionals*.

BACKGROUND

EPR is performed on the Bluebeam Studio platform, which is a cloud-based centralized location for document storage and collaboration. Bluebeam Studio is accessed via the internet using the software application Bluebeam Revu. Bluebeam Studio consists of both Projects (file storage and management) and Sessions (collaboration), both of which can be accessed with an unlicensed version of Revu, though some actions described in this PR require a licensed version.

The Bluebeam Studio platform allows internal DSA staff and external stakeholders to share, view, and collaborate real time in a single electronic location. Each submitted project will have a single Bluebeam Studio Project (BSP) and one or more Bluebeam Studio Sessions (BSS). DSA will generate a BSS for each plan review increment and each applicable post approval document type. This gives organization and facilitates a well-managed project from registration through certification. While various file types can be stored in BSP, the review and approval documents in BSS are required to be in PDF file format.

The BSS environment allows multiple users to concurrently access and edit a common document. Different background colors are used to distinguish the markups of each plan review discipline. Throughout this document, detailed instructions may refer to icons or buttons within the software represented by graphics. Such icons or buttons are referred to by the text that appears when hovering the cursor over the graphic.

ELECTRONIC PLAN REVIEW FOR DESIGN PROFESSIONALS

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ELECTRONIC PLAN REVIEW FOR DESIGN PROFESSIONALS

PROCEDURE

The design professional should refer to *PR 17-03: Project Submittal Appointment Process* for project registration requirements, including plan review fees.

The instructions provided in this document specific to the Bluebeam Revu software application are based on Version 21.3. Users with other versions of Bluebeam Revu may find the interface to differ from that described herein. For version specific instructions, users may refer to prior versions of this document, which were based on earlier versions of Bluebeam Revu. Users are also advised to consult technical support resources provided by Bluebeam for the operation of Revu and Studio.

1. DOCUMENT PREPARATION

1.1 Bluebeam Revu and Bluebeam Studio

EPR is performed on the Bluebeam Studio platform, which is accessed through the software application Bluebeam Revu.

1.1.1 Prior to preparing drawings, the design professional shall complete the following as described in Appendix A:

1.1.1.1 Install Bluebeam Revu.

1.1.1.2 Create a Bluebeam account with an assigned Bluebeam ID (BBID).

1.1.1.3 Demo Bluebeam Studio.

1.1.2 As described in Section 1 of this PR, PDF documents must be prepared (i.e., formatted) with specific characteristics to facilitate an efficient review and approval in the EPR program.

1.1.2.1 The required document characteristics can be achieved using Bluebeam Revu by following the directions set forth in this document.

1.1.2.2 Alternatively, the required document characteristics may be achieved using another software application; however, directions for doing so are not provided in this document.

1.1.3 Questions or hardship concerns related to procuring software necessary to participate in the EPR program should be directed to DSA by email per Section B2.4 below or by phone to the local regional office.

1.2 General Requirements

Preparation of documents in accordance with Section 1 of this PR is required on all submissions. Noncompliance will be cause for rejecting the submission per Section 2.2 below.

1.2.1 Documents shall be prepared without digital signatures, digital certification, or other PDF security settings that prevent editing or saving operations.

1.2.2 Files shall be named in accordance with the file naming conventions defined in Tables C2.1 through C2.4 below. In this document, where instructions apply generally to any or all versions of a document type, an asterisk (*) is used in place of the version number. For example, “DWG_V*.pdf” applies to DWG_V1.pdf, DWG_V2.pdf, DWG_V3.pdf, etc.

1.3 Drawing File (DWG_V*.pdf) Preparation

Construction drawings submitted for plan review and approval shall comply with the requirements of this section.

1.3.1 Drawings shall be in PDF file format and comply with the following:

1.3.1.1 Filename(s) shall comply with Table C2.1 below.

1.3.1.2 Drawings shall be combined into a single file not to exceed 1,000 megabyte (MB). When a single file would exceed 1,000 MB, drawings shall be divided into volumes that yield the fewest number of files that are each is less than 1,000 MB. The “Reduce File Size…” operation accessed from the “Batch” pull-down menu in Bluebeam Revu may be useful for meeting the file size requirement.

1.3.1.3 A sheet index shall be provided on one of the first pages of the drawings. The sheet index shall indicate the total sheet count, which must match the page count of the PDF file as reported by Bluebeam Revu.

1.3.1.4 Appendix D below provides additional information.

1.3.1.5 The DWG_V*.pdf file shall contain only drawings prepared by the design professionals (i.e., bearing their professional stamp and signature) and intended to receive the DSA identification stamp signifying approval. Reference drawings shall not be included in the DWG_V*.pdf file but shall be submitted instead as a separate supporting document file(s). See Section 1.6 below for document preparation requirements.

1.3.2 Drawings shall provide a blank area measuring 2.3 inch wide by 1.5 inch tall on each sheet for the DSA identification stamp.

1.3.2.1 Each sheet of the drawings for all project submissions, including pre-check (PC) applications, shall provide a blank area in the upper right-hand corner as shown in Figure C1.1 below.

1.3.2.2 In addition to the requirement of Section 1.3.2.1 above, each sheet of drawings for PC applications shall also provide a blank area at the mid-height on the right-hand side as shown in Figure C1.2 below.

1.3.3 Bookmarks: Drawings shall be prepared with an ordered and nested list of bookmarks that facilitate navigation to each sheet. Bookmark labels shall contain the number and name of each sheet and be set to the “One Full Page” view. Compliant bookmarks can be created in Bluebeam Revu by performing the following actions:

1.3.3.1 Review the native bookmarks that may be generated by the software program (e.g., Revit, ArchiCAD, MicroStation, AutoCAD, etc.) used to create the drawings.

1.3.3.1.1 Click the caret adjacent to the “Bookmarks” title on the “Bookmarks” tab. From the resulting drop-down menu select “Audit Bookmarks”. Repair any broken bookmarks found by the audit. Alternatively, delete broken bookmarks and replace as described in Section 1.3.3.2 below.

1.3.3.1.2 Review all bookmarks and verify each contains the correct sheet number and sheet name. Revise any incorrect numbers or names by right-clicking on the bookmark and selecting “Rename” from the resulting context menu. Alternatively, delete incorrectly named bookmarks and replace as described in Section 1.3.3.2 below.

1.3.3.1.3 Compare bookmarks to the sheet index and verify all sheets in the set are bookmarked. Individual bookmarks can be added by clicking the “Add Bookmark” button. Alternatively, bookmarks can be created as a batch as described in Section 1.3.3.2 below.

1.3.3.1.4 Click on a sample of bookmarks and verify each is set to the “One Full Page” view. The view can be corrected by clicking the “One Full Page” button then right clicking the bookmark and selecting “Set to Current View” from the resulting context menu. Alternatively, delete bookmarks with incorrect views and replace as described in Section 1.3.3.2 below.

1.3.3.1.5 If bookmarks are prepared correctly, proceed to Section 1.3.3.3 below.

1.3.3.2 When bookmarks are not generated by the software program used to create the drawings or those bookmarks are deficient in some way (refer to Section 1.3.3.1 above), create bookmarks through the “Bookmarks” tab.

1.3.3.2.1 Click the “Create Bookmarks” button. A dialog box titled “Create Bookmarks” will open.

1.3.3.2.2 In the “Options” region of the dialog box, select “Page Region”.

1.3.3.2.3 Click the “Select” button. The dialog box will close temporarily, and the cursor will become active on the sheet.

1.3.3.2.4 Use the cursor to draw a box around the sheet number on one of the sheets for which bookmarks will be generated (e.g., “G-01”). To draw the box, click, drag, and unclick. A dialog box titled “AutoMark” will open.

1.3.3.2.5 Click the “Add” button in the “AutoMark” dialog box. The dialog box will close temporarily, and the cursor will again become active on the sheet.

1.3.3.2.6 Use the cursor to draw a box around the sheet name on one of the sheets for which bookmarks will be generated (e.g., “COVER SHEET AND INDEX OF DRAWINGS”). To draw the box, click, drag, and unclick. The dialog box titled “AutoMark” will open.

1.3.3.2.7 In the “Selection” field type “ – “ (i.e., space, hyphen, space) between “[Region1]” and “[Region2]”.

1.3.3.2.8 Click the “OK” button to close the “AutoMark” dialog box. The “Create Bookmarks” dialog box will reopen.

1.3.3.2.9 In the “Option” region of the dialog box select “Fit Page” from the pull-down menu for the “Page Scale” field.

1.3.3.2.10 In the “Page Range” region of the dialog box, enter the pages for which bookmarks will be generated. The pages entered must all have the sheet number and sheet name placed in the same location on the page. See Section 1.3.3.2.12 below.

1.3.3.2.11 Click the “OK” button to close the dialog box and create bookmarks.

1.3.3.2.12 Repeat the steps in Sections 1.3.3.2.1 to 1.3.3.2.11 above as required for each group of pages on which the sheet number or sheet name occurs in a different location.

1.3.3.2.13 Review the bookmarks generated by Bluebeam Revu by performing the steps given in Section 1.3.3.1 above.

1.3.3.3 Prior to nesting the bookmarks, create page labels as described in Section 1.3.4 below. After page labels are created in the “Thumbnails” tab, create nested bookmarks.

1.3.3.3.1 Right-click on the first bookmark in each drawing section (e.g., first architectural drawing, first civil drawing, first structural drawing, etc.). Select “Add” from the resulting context menu. Select “Add Before…” from the resulting context submenu.

1.3.3.3.2 While the label field of the new bookmark is active, type the name of the section (e.g., “Architectural”, “Civil”, “Structural”, etc.) and apply keystroke “Enter”. The bookmark name can be revised at any time by right-clicking it and selecting “Rename” from the resulting context menu.

1.3.3.3.3 Select all bookmarks that belong to the created section of sheets. Multiple bookmarks can be selected by holding down the “Shift” key while selecting.

1.3.3.3.4 Drag the group of selected bookmarks to the right under the newly created section bookmark.

1.3.3.3.5 Repeat the steps in Sections 1.3.3.3.1 to 1.3.3.3.4 above for each section of the drawing set.

1.3.4 Page Labels: Drawings shall be prepared to provide page labels in the “Thumbnail” tab. Thumbnail page labels shall match the bookmark labels. Compliant page labels in the “Thumbnails” tab can be created in Bluebeam Revu by performing the following actions:

1.3.4.1 After completing the steps described in Section 1.3.3.2 above and prior to completing the steps described in Section 1.3.3.3 above open the “Thumbnails” tab.

1.3.4.2 Click the “Create Page Labels” button. A dialog box titled “Create Page Labels…” will open.

1.3.4.3 In the “Options” region of the dialog box select “Bookmarks”. In the “Page Range” region select “All Pages” from the pull-down menu.

1.3.4.4 Click the “OK” button to close the dialog box and create page labels.

1.3.5 Flatten: Drawings shall be flattened with no markup elements. A compliant flattened file can be created in Bluebeam Revu by performing the following actions:

1.3.5.1 Select “Flatten” from the “Document” pull-down menu. A dialog box titled “Flatten Markups” will open.

1.3.5.2 In the “Options” region of the dialog box, select all items under “Type”.

1.3.5.3 In the “Options” region of the dialog box, uncheck the “Allow Markup Recovery (Unflatten)” option.

1.3.5.4 Click the “Flatten” button to close the dialog box and flatten the file.

1.3.6 Layers: Drawings shall be prepared to have no layers. A compliant file without layers can be created in Bluebeam Revu by performing the following actions:

1.3.6.1 Activate the “Layers” tab by clicking the “Layers” icon or applying keystroke “Alt+Y”.

1.3.6.2 Click on any layer listed to select it. Apply keystroke “Ctrl+A” to select all layers.

1.3.6.3 Right-click any layer name while all are selected.

1.3.6.4 Select “Delete” from the resulting context menu. A dialog box titled “Delete Layer” will open.

1.3.6.5 Uncheck all options in the dialog box.

1.3.6.6 Click the “Delete” button to close the dialog box and delete the layers.

1.3.7 Hyperlinks: Drawings shall be prepared to provide hyperlinks at all text-based sheet references in the set. If the drawings have been prepared using TrueType or OpenType fonts, compliant hyperlinks can be created in Bluebeam Revu Complete by performing the following actions:

1.3.7.1 Select “Link” from the “Batch” drop down menu.

1.3.7.2 Select “New” from the resulting context menu. A dialog box titled “Batch Link” will open.

1.3.7.3 Click the “Add Open Files” button.

1.3.7.4 From the resulting list of files in the “Path” window, uncheck all files other than the drawing file (i.e., DWG_V*.pdf).

1.3.7.5 Click the “Next” button. A new dialog box also titled “Batch Link” will open.

1.3.7.6 In the “Generate Search Terms” region of the dialog box select “Page Label”.

1.3.7.7 In the “Generate Search Terms” region of the dialog box click the “Settings” button. A dialog box titled “Search Term Settings” will open.

1.3.7.8 In the “Search Term Settings” region of the dialog box, set the “Filter Mode” field to “First from start” from the pull-down menu.

1.3.7.9 In the “Search Term Settings” region of the dialog box, set the “Filter Character” field to “Space” from the pull-down menu.

1.3.7.10 Click the “OK” button to close the dialog box.

1.3.7.11 In the “Generate Search Terms” region of the “Batch Link” dialog box click the “Generate” button.

1.3.7.12 Click the “Run” button to create the hyperlinks. A dialog box titled “Batch Link Summary” will open.

1.3.7.13 Click the “Finish and Close” button to close the dialog box.

1.3.8 Section D3 below provides additional information on scanned drawings.

1.4 Specification File (SPC_V*.pdf) Preparation

Construction specifications submitted for plan review and approval shall comply with the requirements of this section.

1.4.1 Specifications shall be combined into a single file in PDF format. The filename shall comply with Table C2.1 below.

1.4.2 Flatten: Specifications shall be flattened with no markup elements. A compliant flattened file can be created in Bluebeam Revu by performing the following actions:

1.4.2.1 Select “Flatten” from the “Document” pull-down menu. A dialog box titled “Flatten Markups” will open.

1.4.2.2 In the “Options” region of the dialog box, select all items under “Type”.

1.4.2.3 In the “Options” region of the dialog box, uncheck the “Allow Markup Recovery (Unflatten)” option.

1.4.2.4 Click the “Flatten” button to close the dialog box and flatten the file.

1.4.3 Bookmarks: Specifications shall be prepared with an ordered list of bookmarks that allows navigation to each section. Bookmark labels shall contain the number and name of each section and be set to the “One Full Page” view of the first page of each respective section. Compliant bookmarks can be created in Bluebeam Revu by performing the following actions:

1.4.3.1 Review the native bookmarks that may be generated by the software program (e.g., Microsoft Word, WordPerfect, etc.) used to create the specifications.

1.4.3.1.1 Click the caret adjacent to the “Bookmarks” title on the “Bookmarks” tab. From the resulting drop-down menu select “Audit Bookmarks”. Repair any broken bookmarks found by the audit. Alternatively, delete broken bookmarks and replace as described in Section 1.4.3.2 below.

1.4.3.1.2 Review all bookmarks and verify each contains the correct section number and section name. Revise any incorrect numbers or names by right-clicking on the bookmark and selecting “Rename” from the resulting context menu. Alternatively, delete incorrectly named bookmarks and replace as described in Section 1.4.3.2 below.

1.4.3.1.3 Compare bookmarks to the table of contents and verify all sections in the set are bookmarked. Add bookmarks for missing sections as described in Section 1.4.3.2 below.

1.4.3.1.4 Click on a sample of bookmarks and verify each is set to the "One Full Page" view of the first page of the respective section. The view can be corrected by clicking the "One Full Page" button then right clicking the bookmark and selecting "Set to Current View" from the resulting context menu. Alternatively, delete bookmarks with incorrect views and replace as described in Section 1.4.3.2 below.

1.4.3.1.5 If bookmarks are prepared correctly, proceed to Section 1.4.3.3 below.

1.4.3.2 When bookmarks are not generated by the software program used to create the specifications or those bookmarks are deficient in some way (refer to Section 1.4.3.1 above), bookmarks can be created through the "Bookmarks" tab.

1.4.3.2.1 Navigate to the first page of the first specification section and click the "One Full Page" button.

1.4.3.2.2 In the "Bookmarks" tab, click the "Add Bookmark" button.

1.4.3.2.3 While the label field of the new bookmark is active, type the number and name of the specification section. Users may find it beneficial to open a separate copy of the table of contents to copy (keystroke "Ctrl+C") and paste (keystroke "Ctrl+V") the section numbers and names.

1.4.3.2.4 Repeat the steps in Sections 1.4.3.2.1 through 1.4.3.2.3 above for each specification section.

1.4.3.3 At the design professional's option, bookmarks may be nested according to the specification divisions. Bookmarks may be nested by following the instructions given in Section 1.3.3.3 above.

1.5 Form *DSA 103: List of Structural Tests and Special Inspections* (103_V*.pdf) Preparation

The form DSA 103 is created by the design professional using the application accessed from the DSA website. The design professional shall download the completed form from this application and verify compliance with the requirements of this section.

1.5.1 Form DSA 103 shall be a single file in PDF format. The filename shall comply with Table C2.1 below.

1.5.2 Flatten: Form DSA 103 shall be flattened with no markup elements. A compliant flattened file can be created in Bluebeam Revu by performing the following actions:

1.5.2.1 Select "Flatten" from the "Document" pull-down menu. A dialog box titled "Flatten Markups" will open.

1.5.2.2 In the "Options" region of the dialog box, select all items under "Type".

1.5.2.3 In the "Options" region of the dialog box, uncheck the "Allow Markup Recovery (Unflatten)" option.

1.5.2.4 Click the "Flatten" button to close the dialog box and flatten the file.

1.6 Supporting Document Preparation

Supporting documents are those that are required for plan review but are not ultimately approved as part of the application. These documents will not bear the DSA identification stamp when the project is approved. Supporting documents include, but may not be limited to, those listed on the form *DSA 3: Project Submittal Checklist* (e.g., DSA forms, cut sheets, structural calculations, hydraulic calculations, geotechnical report, original drawings of existing buildings, etc.).

1.6.1 Supporting documents shall be submitted in PDF file format when appropriate but may also remain in other formats when necessary. For example, the file containing the structural analysis model should be submitted in its native file format to facilitate review. Filenames shall comply with Table C2.2 below.

1.6.2 Flatten: Supporting documents in PDF file format shall be flattened with no markup elements. A compliant flattened file can be created in Bluebeam Revu as described in Section 1.4.2 above.

1.6.3 Bookmarks: Supporting documents in PDF file format shall be prepared with bookmarks that facilitate navigation appropriate to the document type. Bookmarks should typically be set to the “One Full Page” view. Compliant bookmarks can be created in Bluebeam Revu as described in Sections 1.3.3 or 1.4.3 above.

1.6.3.1 Structural calculations shall contain bookmarks corresponding to (and be nested if applicable) their table of contents.

1.6.3.2 Geotechnical reports shall contain bookmarks corresponding to (and be nested if applicable) their table of contents.

1.6.3.3 Original drawing sets of existing construction provided for reference shall contain bookmarks in accordance with Section 1.3.3 above.

1.6.3.4 Evaluation reports in accordance with *IR A-5: Acceptance of Products, Materials, and Evaluation Reports* submitted for reference as individual files need not contain bookmarks other than that already provided by the publisher.

1.6.4 Section D3 below provides additional information on scanned drawings.

1.7 Report File (EER_V*.pdf, RAR_V*.pdf, EDCR_V*.pdf) Preparation

In addition to and separate from plan review of proposed construction projects, DSA reviews and approves certain types of reports serving various regulatory purposes. For example, DSA reviews reports required by the Seismic Mitigation Program (SMP) administered by the Office of Public School Construction (OPSC) and Evaluation and Design Criteria Reports as required by California Administrative Code (CAC) Sections 4-306 and 4-307. Refer to *PR 08-03: Seismic Mitigation Program* and *IR EB-3: Evaluation and Design Criteria Report*, respectively. Reports submitted for review and approval shall comply with the requirements of this section.

1.7.1 Reports shall be submitted as a single file in PDF format. The filename shall comply with Table C2.1 below.

1.7.2 Flatten: Reports shall be flattened with no markup elements. A compliant flattened file can be created in Bluebeam Revu as described in Section 1.4.2 above.

1.7.3 Bookmarks: Reports shall be prepared with bookmarks that facilitate navigation. Bookmarks shall correspond (and be nested if applicable) to the table of contents and be set to the “One Full Page” view. Compliant bookmarks can be created in Bluebeam Revu as described in Section 1.4.3 above.

2. PROJECT SUBMISSION

After preparing documents in accordance with Section 1 above, project files shall be submitted to DSA in digital format. Prior to the project proceeding to a comprehensive plan review (phase 2), DSA will verify the document preparation and perform a phase 1 plan review. Phase 1 plan review is sometimes referred to as “intake”.

2.1 Document Submission

Initial project documents shall be submitted to DSA for plan review as described in this section.

The document submission process described here is specific to Section 2 and does NOT apply to the submission of documents for back check or post approval documents (refer to Sections 4 and 5 below).

2.1.1 The design professional should consult PR 17-03 Section 2.

2.1.2 The design professional shall upload documents required by form DSA 3 and prepared in accordance with Section 1 above to the "Plan Review Submittal" folder in DSAbox. The "Plan Review Submittal" folder is located within the parent folder dedicated to the design professional's use (i.e., folder name containing the "AE" designator). Refer to the DSAbox External Library, Module 1, Section 1.3 for complete information on DSAbox folder structure.

2.1.3 DSA will receive an automatic notification when the project files have been uploaded, so the design professional need not provide independent notification.

2.1.4 If documents are not uploaded as described above, DSA will send an incomplete notification per PR 17-03 Section 2.2 with instructions requiring the project to be reregistered.

2.2 Document Preparation Verification

Upon receipt of the project documents, DSA will verify the documents have been prepared as required by Section 1 above.

2.2.1 If the document preparation complies with Section 1 above, the project will proceed to phase 1 plan review.

2.2.2 If the document preparation does not comply with Section 1 above, DSA will send an email notification to the design professional identifying the inadequate aspect(s) of the document preparation that require correction. Corrected documents shall be uploaded as described in Section 2.1.2 above, within the time period specified in the email notification. If corrected documents are not received within the specified time, DSA will send an incomplete notification per Section 2.1.4 above.

2.3 Phase 1: Intake Review

After compliant document preparation has been verified by DSA, the project will proceed to phase 1 plan review.

2.3.1 During phase 1 DSA will review the project submission to determine if it is complete in accordance with form DSA 3 and ready for phase 2 plan review.

2.3.2 If the project submission is determined to be complete it will proceed to phase 2 plan review.

2.3.3 If the project submission is determined to be incomplete, DSA will send an email notification to the design professional. The notification will identify the aspect(s) of incompleteness and describe the required corrective action as described in PR 17-03 Section 2.4. Missing and corrected documents shall be uploaded as described in Section 2.1.2 above.

2.4 Phase 2: Plan Review

During plan review, the design professional can monitor progress and the anticipated finish date through the project tracker application accessible from the DSA website.

3. RESPONSE TO PLAN REVIEW COMMENTS

When the phase 2 plan review is complete, the design professional will receive a notification email from DSA. The design professional shall respond to DSA plan review comments as required by this section.

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3.1 Access Plan Review Documents

3.1.1 The notification email from DSA provides access to the Bluebeam Studio Project (BSP) that serves as the file management system for the plan review. The email will contain a hyperlink to the BSP and/or its nine-digit identification number. The design professional will join the BSP by clicking the link or with the identification number as described in Section B1.1 below.

3.1.2 The notification email from DSA provides access to the Bluebeam Studio Session (BSS) that serves as the collaborative workspace for the plan review. The email may contain a hyperlink and/or a nine-digit identification number to join the BSS. Alternatively, the design professional can join the BSS from the BSP as described in Section B1.2 below.

3.1.3 Files in BSP and BSS can be navigated as described in Section B1.3 below.

3.2 Incorporate Comments

The design professionals shall address all plan review comments through responsive actions such as design revisions, document revisions, performing additional analysis, providing additional information, and/or other measures appropriate to the nature of the comment. As the plan review comments are addressed, they shall be "incorporated" as described in this section. Failure to comply with this section will result in the back check submission being found incomplete and the back check delayed.

3.2.1 If a file(s) in the BSS does not contain the status menu as described in this section or the markups do not change color when their status is changed, the design professional shall immediately contact the Lead Plan Reviewer (LPR). See Section 4 below for identification of the LPR.

3.2.2 When comments are addressed by the design professional their status shall be set to "INCORPORATED" by performing one of the following actions:

3.2.2.1 Select the markup on the page. Right-click the markup and select "Set Status" from the resulting context menu. Select "INCORPORATED" from the context resulting submenu.

3.2.2.2 Select the markup in the "Markups List" panel. Double-click the markup in the list at the "Status" column. Select "INCORPORATED" from the resulting context menu.

3.2.2.3 Select the markup in the "Markups List" panel. Right-click the markup in the list and select "Set Status" from the resulting context menu. Select "INCORPORATED" from the resulting context submenu.

3.2.2.4 Select the markup on the page. Click the "Status" toolbar button. Select "INCORPORATED" from the resulting context menu.

3.2.2.5 Select the markup on the page. Apply keystroke "Shift+2". This method requires Bluebeam Revu version 21.2 or greater.

3.2.3 Prior to back check, all red markups authored by DSA staff shall have their status set to "INCORPORATED" by the design professionals. Markups authored by DSA staff in a color other than red need not have their status changed. This requirement applies to all documents in the BSS except the "PR Tracking Table" document.

3.2.4 The design professional shall verify all comments have been set to "INCORPORATED" by performing the following actions:

3.2.4.1 In the "Markups List" panel click the "Filter List" button.

3.2.4.2 Click the filtering header above the "Color" column. If red does not appear as a filter option, skip to Section 3.2.4.4 below.

3.2.4.3 If red appears as a filter option, select it to identify those markups that have not yet been set to “INCORPORATED”. Address the remaining comments and set their status to “INCORPORATED” as described in Section 3.2.2 above.

3.2.4.4 Repeat the actions in Sections 3.2.4.1 through 3.2.4.3 above for each file in the BSS.

3.2.5 The status of markups shall be changed on the documents in the BSS. Incorporating markups on a copy of the file downloaded locally does not comply with this procedure. While working in BSS files, the design professionals should ensure online connectivity by confirming the plug icon in the “Studio” tab is green and connected.

3.3 Reply to Comments

The design professionals shall provide a written response explaining how each plan review comment has been addressed. Written responses shall be provided as described in this section. Failure to comply with this section will result in the back check submission being found incomplete and the back check delayed.

3.3.1 The design professional shall provide written responses using the “Reply” function by performing one of the following series of actions:

3.3.1.1 Select the markup on the page. Right-click the markup and select “Reply” from the resulting context menu. Type the explanatory response in the entry field that appears in the “Comments” column of the “Markups List” panel.

3.3.1.2 Select the markup in the “Markups List” panel. Right-click the markup in the list and select “Reply” from the resulting context menu. Type the explanatory response in the entry field that appears in the “Comments” column of the “Markups List” panel.

3.3.2 Adding explanatory markups to the review document is not an acceptable alternative to providing written response using the “Reply” function.

3.3.3 Prior to back check, all originally red and subsequently “incorporated” markups authored by DSA plan review staff shall have an associated “reply” authored by the design professional. Markups in a color other than red need not have a written response. This requirement applies to all documents in the BSS except the “PR Tracking Table” document.

3.3.4 Written responses shall provide sufficient information and detail to clearly inform the plan reviewer how the design professional has addressed the comment. The quality of complete and concise written responses improves the efficiency of the back check process described in Section 4 below. Responses shall comply with the following:

3.3.4.1 When a written response refers to a supporting document it shall be cited by the full filename as it exists in the BSP. The page or section number shall be cited when applicable. All references to structural calculations shall cite specific page numbers.

3.3.4.2 When a written response refers to the construction drawings it shall cite the sheet number and note, detail, or section number as applicable.

3.3.5 If a plan reviewer finds during the back check ten or more comments for which the replies provide inadequate information or detail to clearly understand how the comment has been addressed, the plan reviewer may determine the submission is incomplete and terminate the back check.

3.3.6 Replies to markups shall be made on the documents in the BSS. Adding replies on a copy of the file downloaded locally does not comply with this procedure. While working in the BSS files, the design professionals should ensure online connectivity by confirming the plug icon in the “Studio” tab is green and connected.

3.3.7 Any questions or points of disagreement with plan review comments must be resolved with the plan reviewer prior to back check. The design professional shall contact the plan reviewer who authored the comment that is subject to question or disagreement prior to the back check to obtain clarification or agreement and resolution. The contact information for each plan reviewer can be found on the “PR Tracking Table” document in the BSS.

4. BACK CHECK

When the design professional has completed responses to plan review comments in accordance with Section 3 above and all documents have been updated accordingly, the design professional shall contact the LPR to arrange the back check for the project. The LPR is identified in a standard comment on the first sheet of the “DWG” file. Additionally, the contact information of the LPR can be found on the “PR Tracking Table” file in the BSS. The LPR will remain the design professional’s point of contact throughout the back check process even after the LPR approves the project for his/her plan review discipline.

The back check may take various paths, including a desk back check, in-person back check, or both. The back check may occur in multiple rounds. This document does not address the sequence, schedule, or meeting requirements of the back check, but instead establishes EPR processes to be used in the context of the back check procedure defined in PR 24-01.

4.1 Revised and Additional Documents

Revised and additional documents shall be prepared and submitted to DSA for back check as described in this section. The following actions apply to both desk back checks and in-person back checks.

4.1.1 Documents shall be prepared for back check in accordance with Section 1 above.

4.1.1.1 Revised documents for approval (i.e., "DWG”, “SPC”, and “103” files) shall be resubmitted in full, as complete, stand-alone documents. It is not acceptable to resubmit only those sheets or pages that have been revised.

4.1.1.2 Supporting documents containing only new or revised information may be submitted to supplement previously submitted supporting documents.

4.1.2 Documents shall be submitted to the “A. Submission\1. Plan Review Documents” folder in the BSP. For applications with multiple increments, submit the documents to the applicable increment subfolder. The design professional should refer to Table C1.1 below and upload documents to the BSP as described in Section B1.4 below.

4.2 Back Check Readiness

4.2.1 The LPR will evaluate the completeness of the back check submission in accordance with the requirements of Section 3 above. If any of the following conditions exist, DSA will consider the submission incomplete. DSA will notify the design professional, explaining why the submission has been found incomplete.

4.2.1.1 Revised or additional documents required for the back check have not been submitted in accordance with Section 4.1 above.

4.2.1.2 Original red plan review markups have not been “incorporated” as required by Section 3.2 above.

4.2.1.3 Original red plan review markups lack replies as required by Section 3.3 above.

4.2.1.4 Replies provided for all or some original red plan review comments lack sufficient information and detail to perform the back check. Refer to Section 3.3 above.

4.2.2 When the back check submission is found to be complete, the LPR will evaluate the preparation of documents submitted according to the requirements of Section 1 above. If the document preparation is found inadequate, the following will occur:

4.2.2.1 LPR will notify the design professional, identifying the file(s) and characteristic(s) that have not been adequately prepared in accordance with Section 1 above.

4.2.2.2 The design professional shall make the required document preparation corrections within the time period allotted in the notification from the LPR. Depending on the nature of the corrections required and the design professional's preference, the originally submitted file(s) can be corrected in the BSP or the original file(s) can be deleted from the BSP and replaced.

4.2.3 When both the back check submission is deemed complete and the document preparation found to be adequate, DSA will proceed with the back check. The LPR will add the documents submitted for approval to the BSS.

4.3 Back Check Actions

During the back check the design professionals will be required to perform various actions as described in this section. These actions may be performed in a desk back check or an in-person back check.

4.3.1 While DSA staff are actively reviewing responses to plan review comments, the design professional shall refrain from the following actions unless specifically authorized to do so by the plan reviewer:

4.3.1.1 Change the status of any markup in the BSS.

4.3.1.2 Add or edit replies to any markup in the BSS.

4.3.1.3 Add or edit markups in the BSS.

4.3.2 After DSA completes a round of back check and notifies the design team that the project is not approved, the design professional shall join the BSS and review the status of plan review comments. The design professional(s) shall respond to the plan review markups according to their status as follows:

4.3.2.1 Gray markups with status set to "CLOSE" are resolved and require no further action.

4.3.2.2 Purple markups with status set to "ADDITIONAL REVIEW REQUIRED" will be discussed further with the plan reviewer. The design professional should not change the status of these markups but should be prepared to discuss their content.

4.3.2.3 Red markups with status set to "OPEN" require further response from the design professional. The design professional shall respond to these comments in accordance with the requirements of Section 3.2 and 3.3 above.

4.3.2.4 The V2 (or later version) documents may contain red markups pertaining to new or revised content or where the response to an original comment was inadequate or incomplete. The design professional shall also respond to all red comments in the V2 (or later version) documents in accordance with the requirements of Section 3.2 and 3.3 above.

4.3.3 After DSA completes a round of back check and notifies the design team that the project is not approved, further corrections to the construction documents are commonly required. These document modifications can be accomplished in one of two general methods described as follows:

4.3.3.1 The design professionals may make changes within the BSS environment. Refer to Section B3 below for additional information concerning editing documents in the BSS.

4.3.3.1.1 The form DSA 103 (i.e., the 103_V* file) should not be corrected in the BSS unless explicitly authorized by and performed under the supervision of the plan reviewer. Corrections to the form DSA 103 should be made through the authoring application on the DSA website to ensure that the auto-generated list of required verified reports is coordinated with the selected testing and inspection requirements.

4.3.3.1.2 Certain document changes (e.g., adding a page, removing a page, etc.) cannot be accomplished within the BSS and, when required, preclude the use of this method.

4.3.3.1.3 When making changes to documents in BSS, the design professional shall not lock the corrective markups.

4.3.3.2 The design professionals may make changes outside of the BSS environment in the authoring software program (e.g., Revit, ArchiCAD, MicroStation, AutoCAD, etc.). In this case, the design professional shall upload a new version of the document to the BSP in accordance with Section 4.1.2 above.

4.3.4 Any questions or points of disagreement with the remaining plan review comments must be resolved with the plan reviewer prior to the next round of back check. The design professional shall contact the plan reviewer who authored the comment that is subject to question or disagreement prior to the next round of back check to obtain clarification or agreement and resolution. The contact information for each plan reviewer can be found on the "PR Tracking Table" document in the BSS.

4.4 Back Check in DSA Regional Office

For in-person back check meetings, DSA recommends the design professional bring a WiFi-enabled laptop computer, as DSA no longer provides access to a desktop computer for their use. Upon arrival at the DSA regional office, the design professional shall perform the following actions:

4.4.1 Check in at the front desk, obtain the assigned back check station number, and proceed to the assigned station.

4.4.2 Log onto the Wi-Fi available to DSA guests, which provides access to the internet, including Bluebeam Studio and DSAbox.

4.4.3 Using the phone in the back check room, call and notify the LPR.

4.5 Completion of Back Check

When the project is approved by all applicable plan review disciplines, DSA will stamp and provide the design professional with electronic files of the approved documents.

4.5.1 Approved documents will be posted to the "C. Approval\1. Plan Review Documents" folder in the BSP. For applications with multiple increments, the documents will be posted to the applicable increment subfolder. Refer to Table C1.1 below. The approved documents will also be posted to DSAbox.

4.5.2 Design professionals who have set up their DSAbox account accordingly will receive a notification email when the approved documents have been uploaded. Refer to the DSAbox External Library, Module 2, Section 2.4 for information on DSAbox notification settings.

4.5.3 The project applicant will receive an approval of plans letter from DSA in the days following the posting of stamped construction documents.

5. POST APPROVAL DOCUMENTS

Design professionals shall prepare and submit post approval documents to DSA for review and approval as required by this section. The procedure described herein applies to both initial

submissions (V1) and resubmissions (V2 and greater).

5.1 Document Types

Post approval documents are construction documents prepared after the initial plan review approval of a project. Post approval documents are subject to DSA review and approval and generally constitute a change to the original DSA-approved construction documents. The exception to this general rule is the deferred submittal, which represents a planned deferral of the design of a designated scope of work when specifically allowed by DSA.

5.1.1 Post approval documents are categorized as one of four types based on the nature of the document and as defined in the Glossary below. Post approval document types are as follows:

5.1.1.1 Deferred Submittals

5.1.1.2 Revisions

5.1.1.3 Addenda

5.1.1.4 Construction Change Documents (CCD)

5.1.2 Table C1.1 below defines the naming convention and location of BSP folders dedicated to each post approval document type.

5.1.3 Table C1.2 below defines the naming convention of BSS dedicated to each post approval document type.

5.2 Prepare Documents

Post approval document submissions shall be prepared in accordance with this section. All submissions, regardless of post approval document type, shall include a form *DSA 140: Application for Submittal of Post-Approval Document.* The design professional should refer also to *IR A-6: Construction Change Document Submittal and Approval Process* for the preparation of CCD.

5.2.1 Submissions shall be separated into two files consisting of (1) an approval document file and (2) a supporting document file.

5.2.2 The approval document file is a single PDF file containing the following components as applicable to the type and content of the submission. Each component shall be prepared in accordance with its corresponding requirements in Section 1 above. The approval document file shall be named in accordance with the naming convention given in Tables C2.3 or C2.4 below.

5.2.2.1 The form DSA 140 shall be the first sheet of the approval document file.

5.2.2.2 Narrative: Addenda and Revisions shall contain a written description of all changes to the DSA-approved documents. Deferred Submittals and CCD do not require a narrative. The narrative shall be stamped and signed by the design professional in general responsible charge.

5.2.2.3 Form DSA 103: When the form DSA 103 is revised, it shall be prepared in accordance with Section 1.5 above and resubmitted in its entirety. All revisions shall be clouded and submitting only the revised pages is not permitted. When included, the form DSA shall be signed by the responsible design professional.

5.2.2.4 Specifications: New or revised specification sections shall be prepared in accordance with Section 1.4 above. When included, specifications shall include a stamped and signed cover sheet in accordance with Section 5.2.4 below. When previously approved specifications are revised, changes shall be clouded or otherwise identified by a defined method.

5.2.2.5 Drawings: New or revised construction drawings shall be prepared in accordance with Section 1.3 above, with the exception of the sheet count requirement. A blank space on each

sheet shall be dedicated to receiving the DSA approval stamp at the location defined in Figure C1.3 below. Each drawing sheet shall be stamped and signed in accordance with Section 5.2.4 below. When previously approved drawings are revised, changes shall be clouded.

5.2.2.6 For resubmissions (i.e., V2 and greater), the complete approval document shall be resubmitted, including all pages and sheets. It is not acceptable to submit only revised and new sheets.

5.2.3 The supporting document file is a single PDF file containing various components with information necessary to substantiate approval but is not directly approved by DSA. Such components commonly consist of structural calculations, product cut sheets, product evaluation reports, documentation of as-built conditions, etc.

5.2.3.1 The supporting document file shall be named to match the approval document file with the added suffix "_Supporting Document", as illustrated in the following examples:

5.2.3.1.1 Deferred Submittal example file name: "DS_Bleacher_V1_Supporting Document".

5.2.3.1.2 Revision example file name: "REV_01_V1_Supporting Document".

5.2.3.1.3 Addendum example file name: "ADD_01_V1_Supporting Document".

5.2.3.1.4 CCD example file name: "CCD_001_V1_Supporting Document".

5.2.3.2 For resubmissions (i.e., V2 and greater), the supporting document need only provide new or revised information as requested by DSA.

5.2.3.3 The supporting document file shall be prepared in accordance with Section 1.6 above.

5.2.4 Documents shall be stamped and signed in accordance with requirements set forth in *IR A-19: Design Professional Stamp (Seal) and Signature on Documents*.

5.2.5 Files from multiple sources can be combined to create a single file in Bluebeam Revu by performing the following actions:

5.2.5.1 Open all applicable files to be combined.

5.2.5.2 Select "Combine…" from the "File" pull down menu. A dialog box titled "Combine PDF Files" will open.

5.2.5.3 In the "Insert Files" region of the dialog box click the "Add Open File" button.

5.2.5.4 In the "Options" region of the dialog box check the "Include Bookmarks" option.

5.2.5.5 In the "Options" region of the dialog box check the "Use Filename as Page Label" option.

5.2.5.6 Click the "OK" button to close the dialog box and combine the files.

5.3 Upload Files to Bluebeam Studio Project (BSP)

The design professional shall submit the post approval document, including both the approval document and the supporting document files, for DSA review and approval. In the case of a resubmission, it shall not be uploaded until the design professional receives notification from DSA indicating that all plan reviewers have completed their review.

5.3.1 The design professional shall perform the following actions:

5.3.1.1 Join the BSP as described in Section B1.1 below.

5.3.1.2 Upload the files as described in Section B1.4 below. Files shall be uploaded to the folder within the "A. Submission" folder dedicated to the applicable post approval document type and project increment as applicable. Refer to Table C1.1 below.

5.3.2 DSA will receive an automatic notification when the post approval document files have been uploaded, so the design professional need not provide independent notification.

5.4 Review of Post Approval Documents

DSA review of the post approval document will result in one of the following responses described in this section.

5.4.1 Document Preparation: If the document preparation is inadequate, the design professional will receive a notification from DSA identifying the aspects of inadequate preparation and requiring resubmission of corrected documents in accordance with Section 1 above.

5.4.2 Submission Rejected: If a prior version of the submission is still being reviewed by DSA, the design professional will receive a notification from DSA indicating that the submission is rejected and cannot be resubmitted until all plan reviewers have completed their review.

5.4.3 Submission Disapproved: If the post approval document is disapproved, the design professional will receive a notification email from DSA indicating that the submission is disapproved, and plan review comments have been added to the document in the BSS. The design professional shall proceed by performing the following actions:

5.4.3.1 Access the plan review comments by joining the BSS as described in Section B1.2 below.

5.4.3.2 Respond to plan review comments as required by Section 3 above. This includes setting the status of red markups to “INCORPORATED” and providing written responses using the “Reply” function. Failure to comply with the response to plan review comment requirements may result in the resubmission being disapproved as incomplete.

5.4.3.3 Prepare and resubmit a corrected document in accordance with Sections 5.2 and 5.3 above.

5.4.4 Submittal Approved: If the post approval document is approved, the design professional will receive a notification from DSAbox that the approved document has been uploaded. Refer to Section 4.5 above.

ELECTRONIC PLAN REVIEW FOR DESIGN PROFESSIONALS

ABBREVIATIONS

BSP – Bluebeam Studio Project

BSS – Bluebeam Studio Session

CCD – Construction Change Document

EPR – Electronic Plan Review

LPR – Lead Plan Reviewer

OTC – Over-the-Counter

PoC – DSA Point of Contact

GLOSSARY

Addendum

A post approval document used to change the DSA-approved construction documents during the bidding phase and prior to a construction contract for the work being awarded. The addendum document includes a scope narrative and only those drawing sheets and specification sections from the original approval that are being changed.

Approval Document File

A single file in PDF format submitted as a post approval document containing the content of the submittal to be approved by DSA. See Section 5.2.2 above.

Bluebeam Studio Project (BSP)

A digital space to store and manage project files.

Bluebeam Studio Session (BSS)

A collaborative digital space for reviewing, marking up documents, and tracking the status of comments.

Construction Change Document (CCD)

A post approval document prepared by the design professional to implement minor changes to the DSA-approved construction documents made after a contract for the work has been awarded or during construction. Refer to *IR A-6: Construction Change Document Submittal and Approval Process* for additional information.

Consultant Plan Reviewer

A plan reviewer contracted and trained by DSA to perform plan review, including back check. The consultant plan reviewer's responsibilities in the EPR process are described in *PR 18-05: Electronic Plan Review for Consultant Plan Reviewers*.

Deferred Submittal

A portion of the project for which DSA permits the design, plan review, and approval to be deferred until after approval of the primary construction documents.

Design Professional

The architect or structural engineer in general responsible charge of the project (or his or her authorized representative) and other licensed architects and engineers delegated responsibility for portions of the work.

DSAbox

A cloud-based storage site where DSA project files are located.

DSA Point of Contact (PoC)

A DSA staff member assigned to a consultant plan reviewer to complete certain internal DSA tasks such as uploading submitted documents, updating eTracker, etc.

EPR Administrator

A DSA staff member who sets up BSP and BSS, and assigns collaborators.

Lead Plan Reviewer (LPR)

The DSA plan reviewer who arranges the back check with the design professional and other plan reviewers and notifies the EPR Administrator when the plan review documents are approved. DSA assigns the LPR based on what plan review disciplines are required for the project as follows:

- Structural Safety (SS) plan reviewer for projects with SS review.
- Accessibility (ACS) plan reviewer for projects without SS review.
- Fire and Life Safety (FLS) plan reviewer for projects without SS and ACS review.

Over-the-Counter (OTC)

An expedited review and approval process offered by DSA for projects meeting the eligibility criteria defined in *PL 07-02: Over-the-Counter Review of Projects Using Pre-Check (PC) Approved Designs*. OTC review and approval is primarily intended for single-story relocatable buildings and other simple projects utilizing designs that have been preapproved in accordance with *PR 07-01: Pre-Check Approval*.

Plan Review Tracking Table

A document (i.e., filename: *_PR Tracking Table.pdf*) in the plan review BSS used to track the plan review status of each document. This document is for plan reviewer use only.

Revision

A post approval document used to change the DSA-approved construction documents prior to the start of construction or during construction when the scope exceeds that appropriate for CCD. The revision document includes a scope narrative and only those drawing sheets and specification sections from the original approval that are being changed.

Supporting Document File

A single file in PDF format submitted with a post approval document containing various components with information necessary to substantiate approval but not directly approved by DSA. Such components commonly consist of structural calculations, product cut sheets, product evaluation reports, documentation of as-built conditions, etc. See Section 5.2.3 above.

ELECTRONIC PLAN REVIEW FOR DESIGN PROFESSIONALS

APPENDIX A: GETTING STARTED

A1. BLUEBEAM ACCOUNT

The actions described in this section need only be performed once. Users without a Bluebeam account must first setup a new account per Section A1.1 below. Users with an existing Bluebeam account should proceed to Section A1.2 below.

A1.1 Create a New Account

Users without an existing Bluebeam account will perform the following actions to create a Bluebeam account:

A1.1.1 Open Bluebeam Revu software application.

A1.1.2 Click the “Sign In” button on the “Studio” tab. If the “Studio” tab cannot be located, apply keystroke “Alt+C” to open the tab.

A1.1.3 Click the “Sign up” link adjacent to the words “Don’t have an account?” in the resulting dialog box.

A1.1.4 Complete the “First Name” and “Last Name” fields.

A1.1.5 In the “Bluebeam Display Name” field, enter user’s name and company as follows: First Last, Company. Example: John Doe, ABC Architects.

A1.1.6 Enter user’s email address in the “Email” field.

A1.1.7 Create a password conforming to the content requirement listed on the dialog box and enter it in the “Password” and “Confirm Password” fields.

A1.1.8 Click the “Create Account” button.

A1.1.9 If you receive an error message, contact Bluebeam support for additional assistance.

A1.1.10 Open the user’s email application and find the welcome email from Bluebeam. Click the link in the email to validate the email address.

A1.2 Setup Existing Account

After creating a Bluebeam account, users will perform the following actions to set up the account:

A1.2.1 Open the Bluebeam Revu software application and log on to Bluebeam Studio:

A1.2.1.1 Click the “Sign In” button on the “Studio” tab.

A1.2.1.2 Enter the user’s email address in the “Bluebeam ID” field of the resulting dialog box and click the “Next” button.

A1.2.1.3 Enter the user’s password in the next dialog box and click the “Sign In” button.

A1.2.2 Open the “Preferences” dialog box by clicking on the “Preferences” button, selecting “Preferences” from the “Revu” pull-down menu, or applying the “Ctrl+K” keystroke.

A1.2.2.1 Click on the “General” screen (left menu) and “Options” tab.

A1.2.2.2 In the “User” field verify or correct the entry to match the standard defined in Section A1.1.5 above.

A1.2.2.3 Click on the “Studio” screen (left menu) and the “Servers” tab.

A1.2.2.4 In the “Display Name” field verify or correct the entry to match the standard defined in Section A1.1.5 above.

A1.2.3 Click “OK” to close the “Preferences” dialog box.

A2. DEMO BLUEBEAM STUDIO

New users can demo Bluebeam Studio by performing the following actions:

A2.1 Join a BSP in accordance with Section B1.1 below. The BSP folder structure will be in accordance with Table C1.1 below.

A2.1.1 Navigate the BSP folder structure and open files in BSP in accordance with Section B1.3 below.

A2.1.2 Files will be submitted to the “A. Submission” folder and its subfolders by the design professional.

A2.1.3 DSA plan reviewers will move files from the “A. Submission” folder to the “B. DSA Review” folder.

A2.2 Join a BSS in accordance with Section B1.2 below. Each BSS corresponds to a folder in the BSP as defined in Table C1.2 below.

A2.2.1 Open files in the BSS in accordance with Section B1.3 below.

A2.2.2 While in the BSS ensure online connectivity. Under the “Studio” tab confirm that the plug icon is connected with a green dot.

A2.2.3 In the “Attendees” section of the “Studio” tab verify the user’s name conforms to the convention described in Section A1.1.5 above.

ELECTRONIC PLAN REVIEW FOR DESIGN PROFESSIONALS

APPENDIX B: WORKING IN BLUEBEAM STUDIO WITH BLUEBEAM REVU

B1. STUDIO OPERATIONS

B1.1 Join a Bluebeam Studio Project (BSP)

Users will join a BSP by performing the following actions:

B1.1.1 Open Bluebeam Revu software.

B1.1.2 Sign in to Bluebeam Studio as described in Section A1.2.1 above.

B1.1.3 Under the “Studio” tab click on the “+” button and select “Join” from the resulting context menu. A dialog box titled “Join” will open.

B1.1.4 Paste the nine-digit BSP identification number into the “Studio ID” field of the dialog box. The BSP identification number will be provided in the notification email from DSA.

B1.1.5 Click the “OK” button to close the dialog box and join the BSP.

B1.1.6 After a BSP has been joined from a Bluebeam account, it will thereafter appear in the list of “Joined” BSP found on the “Studio” tab. The user can join this BSP in the future simply by clicking on the BSP name from this list.

B1.2 Join a Bluebeam Studio Session (BSS)

Users will join a BSS by performing the following actions:

B1.2.1 Join the BSP as described in Section B1.1 above.

B1.2.2 Right-click on the BSP name and select “Sync” from the resulting context menu.

B1.2.3 Right-click on the BSP name and select “Show Sessions…” from the resulting context menu. A dialog box titled “Available Sessions” will open.

B1.2.4 From the resulting dialog box select the desired BSS.

B1.2.4.1 The BSS used in the procedures described in Sections 3 and 4 above will contain “Plan Review” in the name. When a project consists of more than one increment, the BSS used for plan review will also contain the increment number.

B1.2.4.2 The BSS used in the procedures described in Section 5 above will be named as described in Table C1.2 below.

B1.2.5 Click the “Join” button to close the dialog box and join the BSS.

B1.2.6 After a BSS has been joined from a Bluebeam account, it will thereafter appear nested in the list of “Joined” BSP found on the “Studio” tab. The user can join this BSS in the future simply by clicking on the nested BSS name from this list.

B1.3 Navigation in Bluebeam Studio

Navigation of folders and files in Bluebeam Studio will be performed using the various operations described below.

B1.3.1 To expand and show the contents of a collapsed folder in BSP, double-click on the folder name.

B1.3.2 To open a file in BSP or BSS, right-click on the file name and select “Open” from the resulting context menu.

B1.3.3 To “check out” an open BSP file, click the lock icon in the document name tab and select “Check Out” from the resulting context menu.

B1.3.4 To save a checked out BSP file, select “Save” from the “File” pull-down menu or apply keystroke “Ctrl+S”.

B1.3.5 To “check in” an open BSP file, click on the page icon in the document name tab and select “Check In” from the resulting context menu. A dialog box titled “Check In” will open. Add a comment if desired and click the “Check In” button on the resulting dialog box. The “check in” process saves changes made to the document while it was checked out.

B1.3.6 To undo the “check out” of an open BSP file, click on the page icon in the document name tab and select “Undo Checkout” from the resulting context menu. The “undo check out” process discards (i.e., does not save) changes made to the document while it was checked out.

B1.3.7 To delete a file from BSP, right-click on the file name and select “Delete…” from the resulting context menu. A dialog box titled “Delete Files and Folders” will open. Click the “Yes” button.

B1.3.8 To delete a file from a BSS, contact the EPR Administrator. Files can only be deleted from a BSS by its owner.

B1.4 Add a File to Bluebeam Studio Project (BSP)

Users with permission to do so based on the security settings of the target folder will add files to a BSP by performing the following actions:

B1.4.1 Join the BSP as described in Section B1.1 above.

B1.4.2 Navigate to the target folder in the BSP to which the file is to be uploaded as described in Section B1.3 above.

B1.4.3 Right-click on the target folder.

B1.4.4 Select “Upload Files…” from the resulting context menu. A dialog box titled “Upload Files” will open.

B1.4.5 In the resulting dialog box, click on the “Add” button and select “Files” from the resulting context menu.

B1.4.6 A navigation window titled “Add Files” will open.

B1.4.7 Navigate to the location where the file to be uploaded has been saved.

B1.4.8 Select the file to be uploaded. Multiple files can be selected concurrently by holding down the “Ctrl” key.

B1.4.9 Click the “Open” button. The dialog box titled “Upload Files” will reopen.

B1.4.10 Click the “OK” button to close the dialog box and upload the files.

B1.5 Download a File from Bluebeam Studio Project (BSP)

Users with permission to do so based on the security settings of the subject folder will download files from a BSP by performing the following actions:

B1.5.1 Join the BSP as described in Section B1.1 above.

B1.5.2 Navigate to the subject folder in the BSP from which the file is to be downloaded as described in Section B1.3. above.

B1.5.3 Right-click on the name of the file to be downloaded.

B1.5.4 Select “Download Copy” from the resulting context menu. A navigation window titled “Save As” will open.

B1.5.5 Navigate to the location where the downloaded file will be saved.

B1.5.6 Click the “Save” button to close the window and complete the download.

B2. TROUBLESHOOTING IN BLUEBEAM

B2.1 User’s Name Incorrect

When the user’s name appearing in the “Attendees” section of the “Studio” tab or the “Author” column in the “Markups List” tab does not match the convention defined in Section A1.1.5 above, perform the following actions:

B2.1.1 Open the “Preferences” dialog box by clicking on the “Preferences” button, selecting “Preferences” from the “Revu” pull-down menu, or applying the “Ctrl+K” keystroke.

B2.1.2 Click on the “General” screen (left menu) and “Options” tab.

B2.1.3 Verify or correct the content of the “User” field to conform to the convention described in Section A1.1.5 above.

B2.1.4 Click on the “Studio” screen (left menu) and “Servers” tab.

B2.1.5 Verify or correct the content of the “Display Name” field to conform to the convention described in Section A1.1.5 above.

B2.1.6 From an internet browser navigate to www.signin.bluebeam.com.

B2.1.7 Enter the user’s email address in the “Bluebeam ID” field of the resulting screen and click the “Next” button.

B2.1.8 Enter the user’s password in the next screen and click the “Sign In” button.

B2.1.9 Click on the “My Profile” tab.

B2.1.10 Verify or correct the content of the “Default Name” field to conform to the convention described in Section A1.1.5 above.

B2.1.11 Click the “Logout” button to exit.

B2.2 Not Used

B2.3 Submit Technical Support Request to Bluebeam

Users can request assistance from Bluebeam by performing the following actions.

B2.3.1 Select “Technical Support” from the “Help” pull-down menu. The Bluebeam technical support webpage will open in Revu.

B2.3.2 Scroll down to the “Resources and Contact Support” and click the “Submit a Ticket” link.

B2.3.3 Scroll down to the “Contact Us” region and complete all required fields including a brief description of the issue or problem.

B2.3.4 Check the “I’m not a robot” box and click the “Send” button to transmit the email to the Bluebeam support team.

B2.4 DSA EPR Support

Users can request assistance from DSA on EPR issues by sending an email to the following address: DSAEPRSupport@dgs.ca.gov.

B3 Best Practices for Editing Documents in BSS

The following guidelines are published by Bluebeam on their website. Adherence to these recommendations intends to yield a more efficient, stable, and accurate use of Bluebeam Studio.

B3.1 Use the fastest and most stable internet connection possible.

B3.2 Minimize the file size of PDF as much as possible. Before uploading files, remove any unnecessary content, such as layers, file attachments, and unnecessary markups (e.g., “SHX Text” markups). Consider using the “Reduce File Size” operation in Bluebeam Revu.

B3.3 Grouped Markups: If combining markups together, minimize the number of individual items within each group. It is best to avoid using this functionality when unnecessary.

B3.4 Snapshot Tool: Use the leanest “snapshot” possible by excluding background content or unneeded data from the original document. To achieve this, capture the content from the source document using the “snapshot” tool, but before pasting it onto the destination document, paste it onto an intermediate, blank PDF document. Then retake the capture using the “snapshot” tool from the intermediate document and paste the second capture onto the destination document. The second version of the “snapshot” will be free from any unnecessary data that could be corrupt.

B3.5 Images: When adding images to a document in a BSS, remember that document and markup changes are being transmitted back and forth between the cloud and each attendee. Large file sizes resulting from high-resolution images may have an adverse effect on overall performance.

APPENDIX C: STANDARDS AND NAMING CONVENTIONS

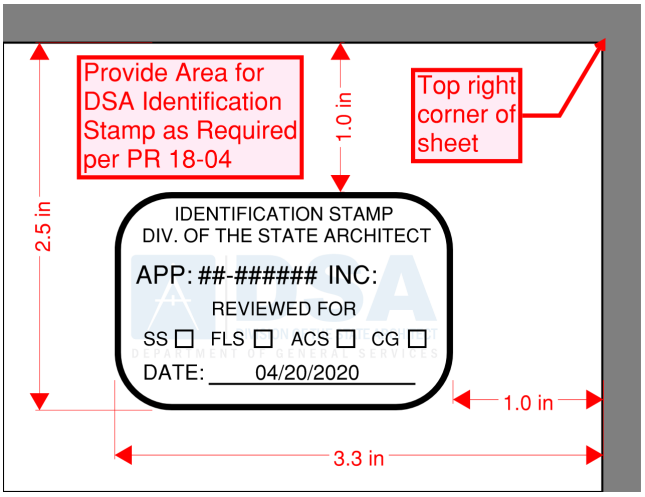

Figure C1.1: Identification Stamp Location, Typical

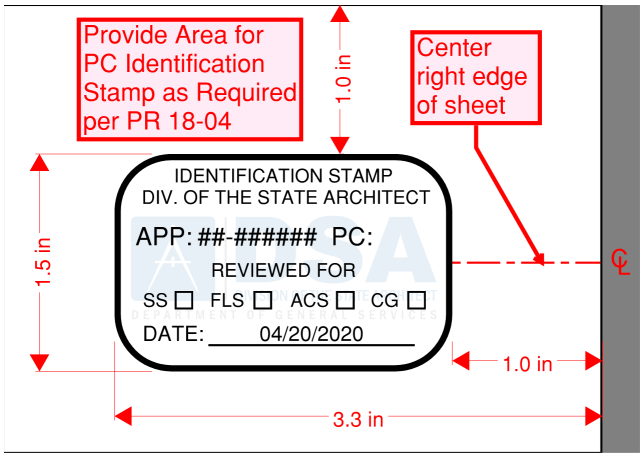

Figure C1.2: Identification Stamp Location, Pre-Check

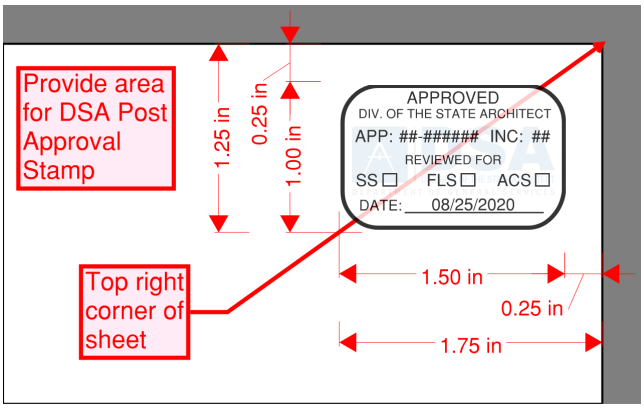

Figure C1.3: Approval Stamp Location, Post Approval Documents

Table C1.1: Bluebeam Studio Project (BSP) Folder Structure	
BSP Folders	Description
0 Increments	Root folder indicates the number of increments
A. Submission	This is the BSP folder where the Design Professional submits Version 2 (_V2) and greater documents.
1. Plan Review Documents*	
Subfolders for each Increment as applicable	
2. Post Approval Documents*	
A. Deferred Submittals	
Subfolders for each Increment as applicable	
B. Revisions	
Subfolders for each Increment as applicable	
C. Addenda	
Subfolders for each Increment as applicable	
D. Construction Change Documents	
B. DSA Review	This BSP folder is where DSA places project documents and sends them to sessions (as required) for markup.
1. Plan Review Documents*	
Subfolders for each Increment as applicable	
2. Post Approval Documents*	
A. Deferred Submittals	
Subfolders for each Increment as applicable	
B. Revisions	
Subfolders for each Increment as applicable	
C. Addenda	
Subfolders for each Increment as applicable	
D. Construction Change Documents	
C. Approval	This is the BSP folder where DSA places the approved documents.
1. Plan Review Documents*	
Subfolders for each Increment as applicable	
2. Post Approval Documents*	
A. Deferred Submittals	
Subfolders for each Increment as applicable	
B. Revisions	
Subfolders for each Increment as applicable	
C. Addenda	
Subfolders for each Increment as applicable	
D. Construction Change Documents	
* BSP used for the review of reports (see Section 1.8 above) do not include this folder or its subfolders.	

Table C1.2: Bluebeam Studio Sessions (BSS) Naming and Associated BSP Folder	
BSP Folder	BSS Name
Project Without Increments	
B. DSA Review	
1. Plan Review Documents	*RO_APPLNO* Plan Review *Project*
2. Post Approval Documents	
A. Deferred Submittals	*RO_APPLNO* Deferred Submittal *Project*
B. Revisions	*RO_APPLNO* Revision *Project*
C. Addenda	*RO_APPLNO* Addendum *Project*
D. Construction Change Documents	*RO_APPLNO* CCD *Project*
Project With Increments (2 Increment example shown)	
B. DSA Review	
1. Plan Review Documents Increment #1 Increment #2	 *RO_APPLNO* INC 01 Plan Review *Project* *RO_APPLNO* INC 02 Plan Review *Project*
2. Post Approval Documents	
A. Deferred Submittals Increment #1 Increment #2	*RO_APPLNO* Deferred Submittal *Project*
B. Revisions Increment #1 Increment #2	*RO_APPLNO* Revision *Project*
C. Addenda Increment #1 Increment #2	*RO_APPLNO* Addendum *Project*
D. Construction Change Documents	*RO_APPLNO* CCD *Project*

Legend:

RO – Two-digit DSA Regional Office identification number (01: Oakland, 02: Sacramento, 03: Los Angeles, or 04: San Diego)

APPLNO – Six-digit project application number assigned at registration.

Project – Project name as recorded in eTracker.

Table C2.1: Plan Review Document File Naming Convention			
	Document Type	Example Name (Project without Increments)	Example Name (Project with Increments: Increment 1 shown)
Initial Documents with Version 1 (_V1) Identifier	Drawings, typical	DWG_V1	INC 01_DWG_V1
	Drawings, multiple volumes when size exceeds 1 GB	DWG1_V1 DWG2_V1	INC 01_DWG1_V1 INC 01_DWG2_V1
	Specifications	SPC_V1	INC 01_SPC_V1
	DSA 103	103_V1	INC 01_103_V1
	Seismic Mitigation Program (SMP) Phase 1 Eligibility Evaluation Report (EER)	EER_V1	Not applicable
	SMP Phase 2 Replacement Analysis Report (RAR)	RAR_V1	Not applicable
	Evaluation and Design Criteria Report	EDCR_V1	Not applicable
	Supporting Documents	See Table C2.2 below	See Table C2.2 below
	Additional blank pages as required by DSA	DSA Additional Comments	INC 01_DSA Additional Comments
Resubmitted Documents at Back Check with Version 2* (_V2) Identifier	Drawings, typical	DWG_V2	INC 01_DWG_V2
	Drawings, multiple volumes when size exceeds 1 GB	DWG1_V2 DWG2_V2	INC 01_DWG1_V2 INC 01_DWG2_V2
	Specifications	SPC_V2	INC 01_SPC_V2
	DSA 103	103_V2	INC 01_103_V2
	SMP Phase 1 Eligibility Evaluation Report	EER_V2	Not applicable
	SMP Phase 2 Replacement versus Rehabilitation Report	RAR_V2	Not applicable
	Evaluation and Design Criteria Report	EDCR_V2	Not applicable
	Supporting Documents	See Table C2.2 below	See Table C2.2 below
* All documents submitted after the initial submittal must have sequential version numbers			

Table C2.2: Plan Review Supporting Document File Naming Convention		
Document Type	Example Name (Project without Increments)	Example Name (Project with Increments: Increment 2 example shown)
Structural Calculations	Structural Calcs_V*	INC 02_Structural Calcs_V*
Hydraulic Calculations	Hydraulic Calcs_V*	INC 02_Hydraulic Calcs_V*
Geotechnical Report	Geotechnical Report_V*	Geotechnical Report_V*
Geohazard Report	Geohazard Report_V*	Geohazard Report_V*
Flood Zone Map	FloodZone_V*	FloodZone_V*
Form DSA 1	DSA1_V*	DSA1_V*
Form DSA 1-INC	DSA1-INC_V*	DSA1-INC_V*
Form DSA 1-RUH	DSA1-RUH_V*	DSA1-RUH_V*
Form DSA 1-MR	DSA1-MR_V*	INC 02_DSA1-MR_V*
Form DSA 3	DSA3_V*	INC 02_DSA3_V*
Original drawings of existing construction	A#*RO-APPLNO* Existing Drawings	A#*RO-APPLNO* Existing Drawings
Meeting Minutes (e.g., pre-application meeting, etc.)	MtgMinutes_V*	INC 02_MtgMinutes_V*
CGS Review Letter	CGS_V*	CGS_V*
CGS Acceptance Letter	CGS_A	CGS_A
Product Cut Sheets	CutSheet_*TYPE*_V*	INC 02_CutSheet_*TYPE*_V*
Structural Analysis Model	StructModel _*INFO*_V*	INC 02_StructModel _*INFO*_V*

Legend:

* Sequential version number starting with 1.

RO: DSA regional office identification number (01: Oakland, 02: Sacramento, 03: Los Angles, 04: San Diego). For projects that predate the regional office identification number, use two consecutive underscore characters: "__".

APPLNO: Six-digit project application number. For projects that predate standard six-digit application numbers, add preceding zeros to achieve six-digits.

TYPE: Description of cut sheet content (e.g., "FireAlarm", "DoorHardware", etc.).

INFO: Any constructive designating information (e.g., "BldgA", "Gym", "Canopy", etc.)

Table C2.3: Post Approval Document File Naming Convention		
Document Type (Convention)	Example Name (Project without Increments)	Example Name (Project with Increments: Increment 2 example shown)
Addenda (ADD_*ID*_V*)	ADD_01_V1	INC 02_ADD_01_V1
	ADD_01_V2	INC 02_ADD_01_V2
	ADD_02_V1	INC 02_ADD_02_V1
	ADD_02_V2	INC 02_ADD_02_V2
Revisions (REV_*ID*_V*)	REV_A_V1	INC 02_REV_A_V1
	REV_A_V2	INC 02_REV_A_V2
	REV_B_V1	INC 02_REV_B_V1
	REV_B_V2	INC 02_REV_B_V2
Deferred Submittals (DS_*Name*_V*)	See Table C2.4 below	See Table C2.4 below
Construction Change Document (CCD_*NUM*_V*)	CCD_001_V1	CCD_001_V1
	CCD_001_V2	CCD_001_V2
	CCD_002_V1	CCD_002_V1
	CCD_002_V2	CCD_002_V2
	CCD_002_V3	CCD_002_V3
	CCD_003_V1	CCD_003_V1
	CCD_003_V2	CCD_003_V2

Legend:

* Number sequentially assigned to each new version of submitted post approval document.

ID: Two-digit numeric (e.g., 01, 02, 03, etc.) or one-digit alphabetic (e.g., A, B, C, etc.) sequential designator uniquely assigned to each separate Addendum or Revision.

NUM: Three-digit sequential number (e.g., 001, 002, 003, etc.) uniquely assigned to each separate CCD.

Name: Unique name of each deferred submittal based on subject matter per Table C2.4.

Table C2.4: Deferred Submittal Document File Naming Convention		
Deferred Submittal Type	Example Name (Project without Increments)	Example Name (Project with Increments: Increment 2 example shown)
Access floor systems	DS_Access Floor Systems_V1 DS_Access Floor System_V2	INC 02_DS_Access Floor Systems_V1 INC 02_DS_Access Floor System_V2
Bleachers	DS_Bleacher_V1 DS_Bleacher_V2	INC 02_DS_Bleacher_V1 INC 02_DS_Bleacher_V2
Elevator Guide Rails	DS_Elevator Guide Rail_V1 DS_Elevator Guide Rail_V2	INC 02_DS_Elevator Guide Rail_V1 INC 02_DS_Elevator Guide Rail_V2
Exterior Wall System	DS_Exterior Wall System_V1 DS_Exterior Wall System_V2	INC 02_DS_Exterior Wall System_V1 INC 02_DS_Exterior Wall System_V2
Fire Pump and Water Tank	DS_Fire Pump and Tank_V1 DS_Fire Pump and Tank_V2	INC 02_DS_Fire Pump and Tank_V1 INC 02_DS_Fire Pump and Tank_V2
MEP Distribution System	DS_MEP_V1 DS_MEP_V2	INC 02_DS_MEP_V1 INC 02_DS_MEP_V2
Photovoltaic Rooftop System	DS_PV_V1 DS_PV_V2	INC 02_DS_PV_V1 INC 02_DS_PV_V2
Skylights	DS_Skylight_V1 DS_Skylight_V2	INC 02_DS_Skylight_V1 INC 02_DS_Skylight_V2
Stage Rigging	DS_Stage Rigging_V1 DS_Stage Rigging_V2	INC 02_DS_Stage Rigging_V1 INC 02_DS_Stage Rigging_V2
Steel Joist / Joist Girder	DS_Steel Joist_V1 DS_Steel Joist_V2	INC 02_DS_Steel Joist_V1 INC 02_DS_Steel Joist_V2
Window Wall System or Storefront	DS_Window Wall System_V1 DS_Window Wall System_V2	INC 02_DS_Window Wall System_V1 INC 02_DS_Window Wall System_V2
Wood Truss	DS_Wood Truss_V1 DS_Wood Truss_V2	INC 02_DS_ Wood Truss_V1 INC 02_DS_ Wood Truss_V2

ELECTRONIC PLAN REVIEW FOR DESIGN PROFESSIONALS

APPENDIX D: PDF CREATION GUIDELINES

D1. Formatting

These guidelines are provided to help develop consistent formatting across all disciplines.

D1.1 Alignment: Plan drawings created in one or more authoring software programs must line up when overlaid electronically.

D1.2 Consistent title block.

D1.3 Consistent gridline visibility across disciplines.

D1.4 Naming convention of structures shall be consistent across disciplines.

D1.5 Sheet size and orientation of sheets shall be consistent.

D1.6 All submissions should be black and white. The use of colors on PDF should be kept to a minimum as not to impact file size and rendering speed.

D1.6.1 If colors are used, they shall not be used in a way that will impact the content of the document if printed in black and white.

D1.6.2 The use of the color red is not permitted due to the confusion it may create with DSA plan review markups, which use red as a standard.

D1.7 Minimize the use of hatch fills. If hatch fills are used, then provide efficient fills to prevent slow rendering speed and reduce file size.

D1.8 Use native searchable fonts (e.g., TrueType or OpenType) to allow searchability within the PDF document and improve performance. Use a font size with a minimum actual height of 3/32-inch for legibility.

D2. PDF Creation

Design professionals who submit electronic documents to DSA should follow these guidelines during the creation of PDF documents.

D2.1 PDF shall be created directly from the authoring application(s).

D2.2 Use vector-based lines. Raster-based and scanned documents should not be used except when documents are not available in their native format such as PC drawings and old referenced drawings, etc. Scanned documents shall be legible and free from streaks and shall be prepared as specified per Section D3 below.

D2.3 Remove all unnecessary viewports.

D2.4 Remove all metadata.

D2.5 Maintain output scale when printing to PDF. Print to scale.

D2.6 Do not submit password protected documents or restricted documents.

D2.7 Do not use digital signatures via “Sign Document” option.

D2.8 Remove all custom status menus.

D3. Scanned Drawings

In some cases, design professionals will need to submit PDF documents with drawings created by scanning rather than through another software application. Scanned drawings may be part of the “DWG” document (e.g., original drawings for a modular building being relocated) or as a separate supporting document file (e.g., original drawings of an existing building in which alterations are proposed).

When scanned drawings are included, the design professional shall test the regeneration speed of the document by navigating through the scanned sheets. If the scanned pages do not regenerate in two seconds or less, the design professional should employ available measures to improve the regeneration speed of the scanned drawings.

D3.1 If the scanned drawings are in PDF file format, the “Reduce File Size” operation provided in Bluebeam Revu may be used to improve performance. The “Reduce File Size…” tool is accessed from the “Batch” pull-down menu, and guidance on its use is available through the technical support page of Bluebeam’s website.

D3.2 If the scanned drawings are image files (e.g., the file extension is “jpeg”, “jpg”, “tiff”, “tif”, “png”, “gif”, “bmp”, etc.) convert and combine the image files into a single PDF file by performing the following actions:

D3.2.1 In Bluebeam Revu, select “Create” from the “File” pull-down menu.

D3.2.2 From the resulting context menu, select “From Multiple Files”. A navigation box titled “Select files to create PDF” will open.

D3.2.3 Navigate to the location where the image files are saved.

D3.2.4 Select the image files for all sheets of the scanned drawings. If the folder contains only the desired files, keystroke “Ctrl+A” can be used to select all the files. Alternatively, holding down the “Ctrl” key allows the selection of multiple files.

D3.2.5 Click the “Open” button. The navigation box will close, and a dialog box titled “Stapler” will open.

D3.2.6 Click the “Advanced…” button. A dialog box titled “Default Settings” will open.

D3.2.7 In the “Resolution” region of the dialog box, set the “Image” field to the optimal resolution from the drop-down menu. The optimal resolution should balance legibility and detail of the final document with the regeneration speed of the page and may require testing (i.e., trial and error) to determine. Click the “OK” button to close the dialog box.

D3.2.8 In the “Step 2” region of the “Stapler” dialog box, enter the name of the resulting PDF file in the “One Output File” field. See Table C2.1 above for file naming convention.

D3.2.9 In the “Step 3” region of the “Stapler” dialog box select “Use source file folder”.

D3.2.10 Click the “OK” button. The “Stapler” dialog box will close, and a dialog box titled “Stapler – Untitled Job*” will open.

D3.2.11 Click the “Staple” button to close the dialog box and create the PDF file.

D3.3 If the design professional’s efforts to improve the regeneration speed of the scanned drawings are unsuccessful, see Section B2.3 and B2.4 above for additional assistance.