SCA School Construction Authority

Electronic Document Submission and Review Guide

Purpose:

The Electronic document submissions and reviews are enhancements to the SCA Quality Review process. Electronic document enhancements increase review efficiency, promote collaboration, reduce redundancies and supports our green initiatives. This guide provides an outline of the Electronic document submission and review requirements (via Bluebeam Studio Sessions) to prepare, initiate submissions, verification, notification, formatting & processes for electronic document review.

1. **Architect/Engineer of Record (AEOR) (Electronic document deliverables formatting):**

    1.1. Provide complete deliverables submission package per procedural guidelines (PG 3.3.4 Quality Reviews of Capacity, CIP and Resolution A Projects)

    1.2. Provide combined PDF submission package:

        1.2.1. Fonts utilized shall be True type fonts (for Optical Character Recognition, OCR)

        1.2.2. Drawings shall be combined into PDF files corresponding to the number of volumes indicated on the List of Drawings sheet. Each sheet's page label must be the drawing number from title block (e.g. T001.00, A100.00, etc.). (DR1.1.1.2 Drawing Number Convention)

        1.2.3. Specifications shall be combined into PDF files corresponding to the number of volumes. First page of each specification section must be identified and bookmarked by division section number and title, in sequence per the table of contents.

        1.2.4. Reports and calculations shall be separated into PDF files organized by discipline/trade.

        1.2.5. Prior to submission, the AEOR/DPM shall work with DCS to ensure appropriate formatting of PDF files. (Reference "Section 4. DCS (Submission document formatting and setup)" below)

2. **A&E/DCMS (Check before distributing submission to reviewers):**

    2.1. Submission documents not formatted may be rejected. If DCS is required to format the submission files, the review duration shall be extend accordingly.

    2.2. Confirm submission is complete per contract-required deliverables.

    2.3. Confirm submission is formatted as required:

        2.3.1. Drawings are combined into volumes per the List of Drawings sheet. The page labels shall reflect drawing sheet number on the title block. *Page labels are located under the "Thumbnails" sidebar and can be toggled on or off via the "Page label" icon. The "Page label" is the caption below each thumbnails and must match the title block sheet number.*
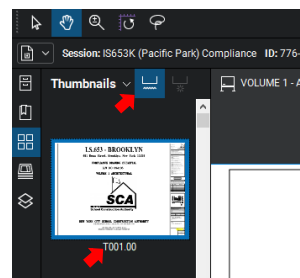
2.3.2. Specifications shall be combined into PDF files with each specification section bookmarked by division section number in sequence per the table of contents. *Locate the "Bookmarks" icon to toggle on the sidebar. Bookmarks should list and reflect each specification division section's number and associated title at beginning of each section title page.*
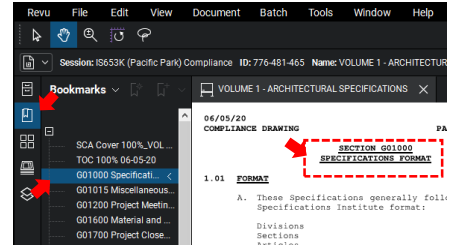
2.3.3. Reports and calculations shall be combined into PDF files organized by discipline/trade.

2.4. If any of the above items have not been provided, the submission may not be accepted and the AEOR shall be notified of deficiencies and required resubmission. Once all the items are addressed and the submission is acceptable, it can be distributed for review. *(No revised or renumbered sheets will be accepted after submission is accepted as complete.)*

3. A&E/DCMS (Notification and distribution of submission to reviewers):

3.1. Following the acceptance of submission package for review, save the submission's PDF files to the respective project design folder on the SCA network drives (J or S drives).

3.2. Notify reviewers that the submission files are ready and uploaded to project folder. Notification should include hyperlink and/or OneDrive sharelink to access submission files. Provide Staff Request and Assignment Form listing names of reviewers and all due dates *(this information is used for Bluebeam session setup and invitations to reviewers).*

3.2.1. Review period shall correspond to durations required in the contract (e.g. 2 weeks for DD phase of Capacity projects, etc.) and shall commence upon notification and distribution of submission to reviewers. Should the submission documents arrive not properly formatted, DCS will need to setup & extend the review duration.

3.2.2. Once the submission has been placed into Bluebeam session and review has commenced:

3.2.2.1. Revision of submitted drawing sheets **cannot** be accepted. *(Sheets cannot be replaced in session; there will be duplication and removal of superseded sheets that will require manually copy/pasting comments from old to new sheets or risk losing markup comments.)*

3.2.2.2. Calculations or drawing sheets not included with submission **can** be accepted on a limited basis *(It is possible to attach a separate file and add to session in progress)*

3.2.2.3. Renumbering of drawing sheets **will not** be permitted once submitted and review is in session. *(Renumbered sheets cannot be replaced or incorporated into the documents in session.)*

3.2.2.4. Do not resubmit full submission packages. Any updated or revised submission after the review has begun will trigger a restart of the review period from the date of resubmission. *(The additional review time by DCS outside consultants from the initial start of their review will be billed to the design consultant.)*

3.2.3. The written responses to review comments from AEOR shall be submitted a minimum 2 days prior to scheduled QC review meeting date.

4. DCS (Submission document formatting and setup):

4.1. Once notification to reviewers is received, submission files (PDF) can be accessed or downloaded from location provided by design team. *(Location via hyperlink to design project folder or OneDrive sharelink).*

4.2. Submission documents that are not formatted may be rejected prior to initiating the Bluebeam review session. If DCS is required to format the submission files, the review duration shall be extend accordingly.

4.3. The steps required for drawing set formatting necessary to navigate the PDF for electronic document review (via Bluebeam) are as follows:

4.3.1. **Combine** individual drawings into single PDF file by drawing list sequence and set volumes *(Required if not done already)*. Select the PDF files to be combined, right click mouse button for menu shown, and select "Combine Files In Revu", follow steps as directed.
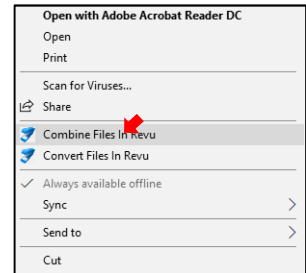

4.3.1.1. Files can also be combined via Bluebeam application; click on pull down menu "File" and select "Combine" icon. Select PDF files to be combined, follow steps as directed.
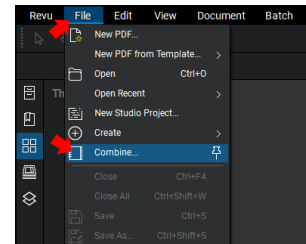

4.3.2. **Flatten** PDF files *(Removes misc. text layers, other conflicts with exporting comments).* Click on pull down menu "Document" and select "Flatten" icon. In Flatten Markups popup window, click on "Flatten" button.
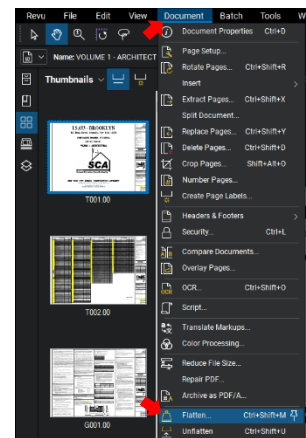

4.3.3. **Create Page labels** *(Required if not done already, the page labels can be modified to identify each page by the drawing sheet number on title block).* On the Thumbnails side bar, click on icon for "Create Page Labels".
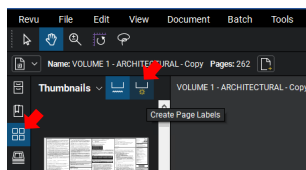

4.3.3.1. In "Create Page Labels" Popup window, select "Page Region" and click on "Select" button. This will bring you to drawing sheet; zoom into title block and highlight region of drawing sheet number.
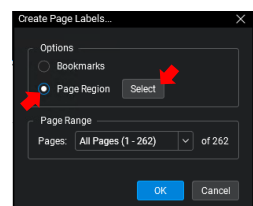
4.3.3.2.   Another Popup window "Automark" will appear confirming the region selected and preview of sheet number scanned; select "OK". This will bring you back to the "Create Page Labels" window and select "OK". *(This will begin scanning each pages drawing sheet number and updating the thumbnail page labels to the scanned sheet numbers).*
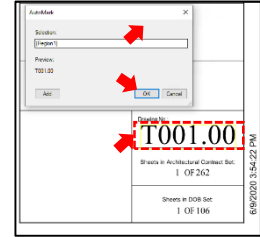
4.3.4.   **Batch link** *(Scans entire document for all text matching the sheet numbers identified with "Page Labels" and create hyperlinks to detail and sheet referencing across entire drawing set and volumes).* Click on pull down menu "Batch", select "Link", then select "New".
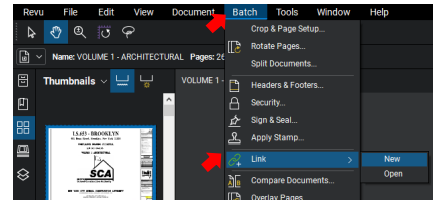
4.3.4.1.   Batch Link Popup window will appear; select "Add Open Files" or "Add Files" and select the "Next" button.
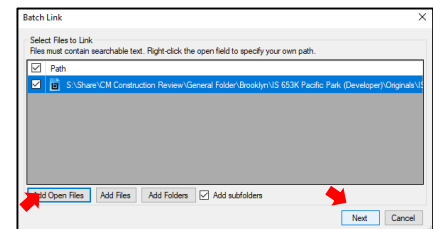
4.3.4.2.   Batch Link window will appear to setup the search criteria. Select "Page Label" and then "Generate" button. List of sheet numbers and page file descriptions will appear. Select the "Run" button to begin the Batch Link process. *(Once process is complete, you should be able to go to any text referencing sheet numbers identified and it will send you to the sheet referenced.)*
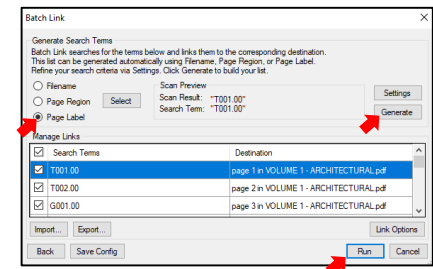
4.4. Specifications formatting (via Bluebeam):

4.4.1.   **Combine** individual spec. sections into single PDF file by table of content sequence and spec. volumes. *(Required if not done already; refer to "Combine individual drawings" above, same procedure.)*

4.4.2.   **Flatten** combined specification files *(Removal of misc. text layers, conflict with exporting comments; refer to "Flatten PDF files" above, same procedure.)*

4.4.3.   **Bookmark** each specification division section *(Identify and tag the beginning of each spec. section; required to navigate the spec. volume during review*.) Typically when the specification sections are combined via the "Combine" process above, bookmarks are automatically created using the name of each of the section PDF names. When a combined specification file is received with no bookmarks, bookmarks can be created via Bluebeam. It is recommend that the initial combined PDF be setup with bookmark, since this process is time consuming and requires going to beginning of each section and manually bookmarking each sections cover sheet. Another method would be to use the "Create Bookmarks" function (similar to the "Page label" function). Bluebeam will scan the selected region of text for every single page of the specifications file and create bookmarks for every page. You will manually need to delete the extra bookmarks in between each sections cover sheet bookmarks.

4.4.3.1. On the Bookmarks side bar, click on icon for "Create Bookmarks".
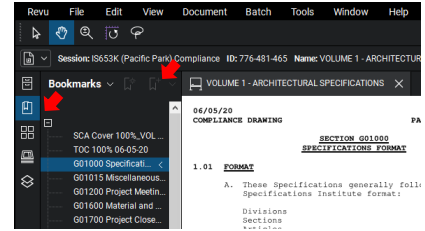
4.4.3.2. In "Create Bookmarks" popup window, select "Page Region" and click on "Select" button. Zoom into the section number and title and highlight region of page to scan for bookmark information.
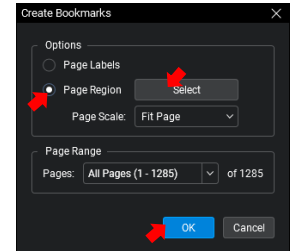

4.4.3.3. Another popup window "Automark" will appear confirming the region selected and preview of bookmark scanned; select "OK". In the "Create Bookmarks" window, select "OK". *(This will begin scanning each page's bookmark information and populating the bookmark list on the sidebar.)* When process is completed, review Bookmark list in sidebar and delete unwanted bookmarks. Save the formatted PDF files; submission files are ready to setup for Bluebeam review session
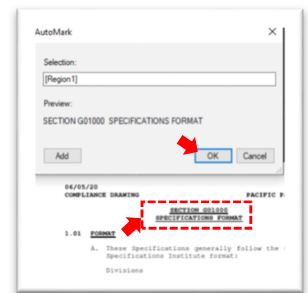

5. **DCS (Creating Bluebeam review session and invitation to reviewers):**

   5.1. Bluebeam Studio account is required in order to setup and participate in the Bluebeam review sessions. If you have not used Bluebeam Studio sessions before, you will need to setup a Bluebeam Studio account, for which you will need your work email address and a new user password. Once a Studio account is created, you will be able to see and open the review sessions.

   5.1.1. Locate and select the Studio icon. The Bluebeam Studio information bar will appear; select the "Sign In" button. The "Sign in to Studio" popup window will open; select "Create account".
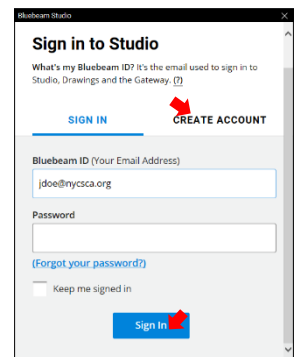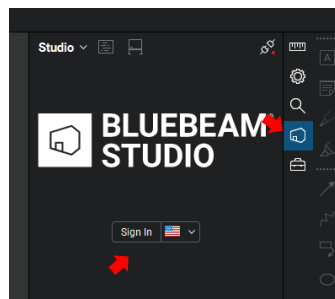
5.1.2. New popup window "Creating your Bluebeam account" will appear. Fill in the information required, enter new password and select "Create Account". You should now be connected to Bluebeam Studio. List of Studio session should appear if you have been invited prior.
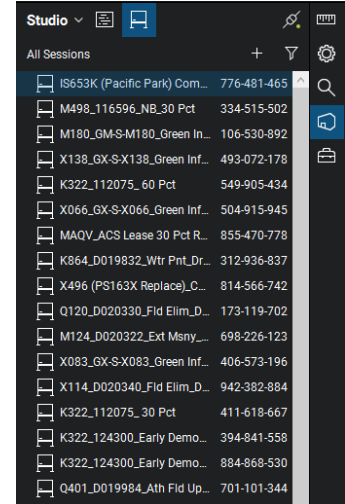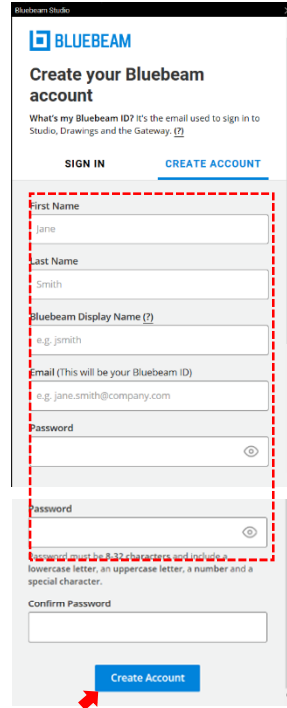
5.2. Bluebeam Studio Session is the cloud based portal used to review and collaborate via the internet on a set of electronic documents. The studio session allows multiple users to remotely review, comment, collaborate, and respond on a single set of electronic documents simultaneously. *(Every reviewer's comments are visible to other reviewers, which reduces redundant/duplicate comments. Your comments cannot be modified or erased by other reviewers. These sessions provide a permanent digital record of all reviewer's comments and markup on the electronic documents to all parties.)*

5.2.1. On the Studio sidebar, select the plus icon "+", then select "New Session"
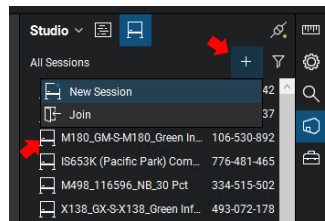
5.2.2. Start Studio Session window will appear. Type in Session name. The format required is as follows: "K123_123456_Ext Msny_100Pct" *(School code_Design#_Description Phase).* Select "Add" button, then find and select all PDF files to be included for this submission for review. *(Include all documents to be reviewed, drawings, specs, calculations, reports, etc.)* Then select OK; your new session name and session number will appear on the Studio sidebar session list.
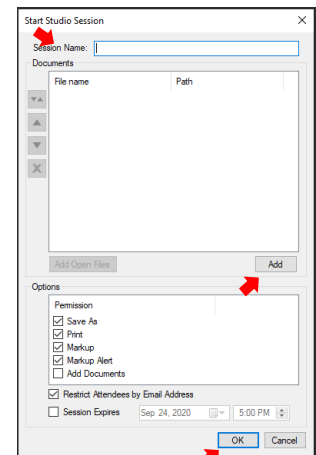
5.2.3. After new Studio session is created, the "Session Invitation" window will pop up. You can use the "Address Book" button or "+" button to manually enter all reviewer email addresses to invite them to the Bluebeam Studio session. *(Include all reviewers from the Staff Request and Assignment Form.)* Select "OK" button; email invitations with session link will be sent to all persons invited. Studio session invitations only work for the person receiving the email; it cannot be forwarded to others who have not been invited. Only the session organizer (*person who initiated session*) can add or remove invitees.
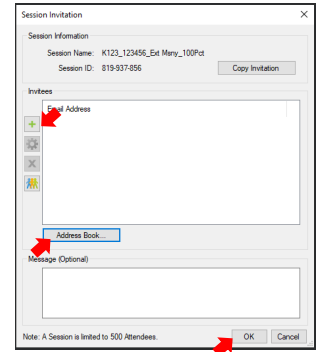
5.2.4. All invited reviewers will receive an email with the following window message and links to "Join Session to Start Collaborating" from Bluebeam Studio. Select the "Join Session" button link.
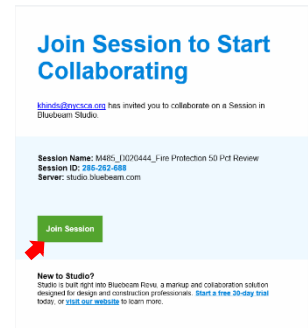
5.2.5. New web browser window and Internet Explorer popup window will appear with following message "Do you want to allow this website to open a program on your computer?", from studio.bluebeam.com. Select the "Allow" button. The session name and ID number will automatically appear on the Studio sessions list.
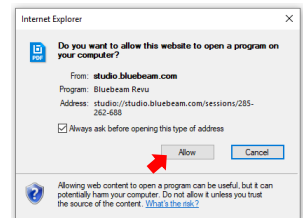
5.3. The Bluebeam Revu application and new Studio Session should begin automatically; if not find the new Studio Session on the list of sessions and double click to join.
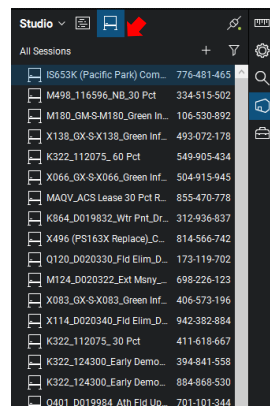
5.4. Once you have joined the session, Studio sidebar will change from the list of "All Sessions" to details of the Studio session you joined. Studio sidebar will list the name of session, status bar, list of attendees, all the documents uploaded for review, a chronological history of every comment, markup, modification, and communication by all invited participants to the Bluebeam Studio Session in progress.
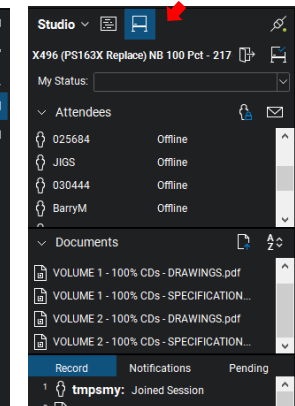
5.5. Once an invitee has completed their review, the "My Status" bar should be updated to indicate "Finished". When all the reviewers are completed, the organizer *(person who setup the session)* can "Finalize" the session and save the session files with all the reviewer comments and markups as a record PDF. Finalizing the session will end, archive, and remove the Studio Session from the Bluebeam Studio cloud and remove it from the session list. If a copy of session markup file is needed, a PDF of the session can be saved by using "Save As" from "File" pull down menu any time during Studio session without ending the session. Only the session organizer can finalize and end that session.
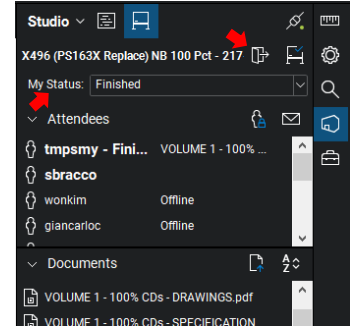

6. **DCS (Bluebeam Profiles, Tools, Comments, Markups and tips):**

   6.1. **Customizing Profiles and Tool Kits**

   6.1.1. Profile stores your favorite tools, menus and display settings. You can choose from preloaded profiles or create your own custom profile. A custom profile are already setup for DCS reviewers. Which can be used or modified to suit.

   6.1.1.1. From top menu bar select Revu, Profiles for pull down menu. Select from the list of preloaded profiles or save a custom profile, manage and load custom profiles. SCA DCS custom profile can be loaded via Mange Profiles.
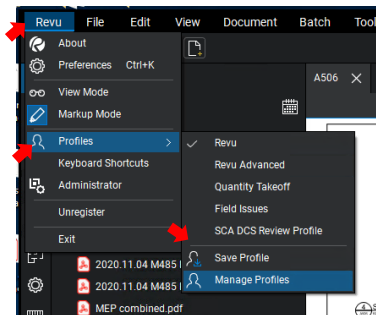
   6.1.2. Bluebeam has a variety of tools and tool sets that can be used for architectural, engineering, construction, estimating, area, dimension take offs & reviews, etc. Tools can be accessed Tools menu or Tool Chest side bar for preset or custom tool sets assembled for different trades & disciplines. Commonly used or favorite tools can be saved as custom tool sets for quick access. Custom tool sets are already setup for DCS reviewers. Which can be used or modified to suit.

6.1.2.1. From top menu bar select Tools, pull down menu, for complete selection of all Bluebeam tools. For Tool sets, locate the Tool chest icon on side bar. Tool Chest side bar should appear with preset Tool sets and tool icons. When you load the SCA DCS profile the customized tool sets is included. If not the customized tool sets can be loaded manually.
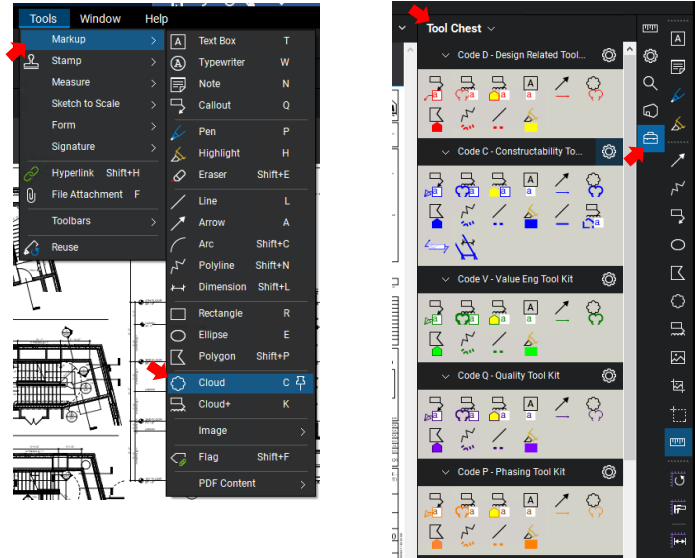
6.1.3. Useful Bluebeam tools and functions

6.1.3.1. Snap shots allows you copy past any image for reference or clarification onto the pdf sheet being reviewed (i.e. code section, detail or image references). Snap shot can also be used to scale and overlay two drawings on top of each other for review if required. (Snap shot is not related to the Overlay function outlined)

6.1.3.2. Overlay allows you to take two drawing sheets and overlay them on top of each other. Overlay tool highlights each page as two different colors, which high lights coordination conflicts or discrepancies between the two sheets (i.e. underground plumbing & foundation plans or brace framing & window openings)

6.1.3.3. Dimensioning tools to confirm size, area or clearance, can be verified if not indicated and marked for coordination if required. (As long as drawings are to scale any drawing can be calibrated to scale to confirm dimensions.)

6.1.3.3.1. Calibration

6.1.3.3.2. Measurement

6.1.3.3.3. Area

6.2. Review comment summarizing and Exporting

6.2.1. To generate the final review comments for submission after review, the comments must be summarized and exported to spreadsheet format to paste onto DCS comment Excel template file.

6.2.2. Select from the "Markups" icon, to toggle the "Markup List" toolbar & comments list view. Select the "Summary" icon for pull down menu, and select "CSV Summary" button. "Markup Summary" popup window will appear, keep all default setting, provide export location & select OK button. A CSV file
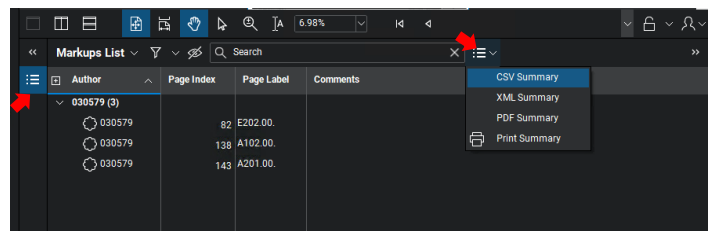
(compatible with Excel file) will be saved at export location. Using Excel application select & copy the three columns of cells (page label / comments / subject) these columns will match the column cells on DCS template file. Paste (option 1,2,3) copied cells on to the DCS template columns (page / comments / code)

6.2.3. Use the format painter tool to correct and format cells to all be consistent.

6.2.4. Fill in the DCS template header, project information & save file

6.2.5. Customize Bluebeam summary form

6.3. Saving PDF copy of session markup files

6.3.1. PDF copy of session files with comments & markups for QC review meeting

6.3.2. Finalizing & closing Bluebeam session

6.3.2.1.   Archiving record copy of Bluebeam session files

7.   Transmitting of Review Comments, Markups, Responses and Reviewer Actions

7.1. DCS (Notification of completed review comments and submission markup files):

Reviews shall be completed by the requested "submit by" date indicated on the "Staff Request and Assignment Form", unless otherwise scheduled.   Once review comments (Excel file) and session markup (PDF files) have been saved, reviewers shall notify and transmit comments to DPM (A&E/DCMS) and cc. DM, DCS DRM & SD, via email. Email notification shall indicate the files have been saved in the respective project folder, within the appropriate design phase, within the "Design Review" subfolder on the SCA network drive.

7.2. A&E/DCMS (Transmitting of review comments and submission markup files):

7.2.1. Upon receipt of DCS reviewer email notification of completed review, DPM shall notify AEOR of completed *review. (For A&E in-house, the email notification can be forwarded to AEOR. For DCMS consultants, DPM shall upload review comments and submission markup files to their OneDrive and transmit to consulting AEOR accordingly.)*

7.2.2. AEOR shall provide written responses for each comment to the DPM and forward to reviewers 2 days minimum prior to scheduled date for QC review meeting. *(Responses shall be as descriptive as possible in order to correct flagged items. Intent of responses is to prioritize issues for review. QC review will focus on issues and items that are unclear or in disagreement. It is not necessary to review items that are agreed upon.)*

7.3. DCS (Reviewing/replying to comment responses):

7.3.1. DCS reviewers shall review AEOR responses and provide replies with the "Reviewer Action Codes" and additional comments if required for any exceptions taken. Replies should be transmitted back to DPM, then to AEOR, prior to QC review meeting.

7.3.2. Response to comments on the Excel file should be received 2 day min. prior to QC review meeting. Review the responses provided and fill in the last column on DCS comments form

7.3.2.1.   "A" - Agree: If the response is acceptable

7.3.2.2.   "E" – Exception: If the response is insufficient or there is a disagreement

7.3.2.2.1. Add any additional clarifying notes or additional comments in red, under the response column with exceptions.

7.3.3. Save DCS comment file with responses and DCS replies and transmit to DPM, then in turn to AEOR prior to QC review meeting. *(Intent of review and reply to responses is to prioritize the items and issues for review to focus the QC review on issues and items which are unclear or in disagreement and provide any additional guidance or direction before developing further. It is not necessary to review items that are agreed to be corrected or modified.)*