

PROCEDURE: ELECTRONIC BACK CHECK FOR PLAN REVIEW PROJECTS

DISCIPLINES: Structural (SS), Fire/Life Safety (FLS) and Access Compliance (AC).

PURPOSE: This procedure provides a method for electronic back check submission, review and approval of project documents with the Division of the State Architect (DSA). Back check submittals will be made to the DSAbox, a secure, cloud-based, collaborative, online file-sharing website.

BACKGROUND: DSA's current, paper back check procedure requires that the design professional, when ready for back check, make an appointment with DSA staff, and bring in a hard copy set of plans incorporating all of the comments and corrections required by DSA plan review staff.

The vast majority of projects that are submitted to DSA for review and approval are originally prepared digitally using computer drafting or building information modeling software. The design professional then prints these documents and submits paper copies of the plans for initial DSA review, and for any subsequent follow-up reviews. This back and forth process, from electronic version to paper to electronic, is very resource intensive, and contrary to both the Governor's Office's and Department of General Services' sustainable policies and goals.

The DSAbox allows internal and external stakeholders to share, view, and collaborate in real time in one electronic location. Documents that historically were mailed, processed, and filed physically can now be transferred via the Internet.

Each design professional receives his or her own designated project folder to submit project documents. The ability to access documents is immediate and available to collaborators identified to work on the project.

SCOPE: This procedure is voluntary at this time. Over-the-Counter projects are not currently supported. Electronic back check stations in all DSA regional offices allow in-person back checks only for this procedure. Web conferencing is not supported at this time, but may be in the future. See Section 2.5 for submittal size limitations.

PROCEDURE:

1. SUBMITTAL—METHOD

- 1.1** The design professional contacts the lead plan reviewer to request an electronic back check. For any project requiring structural safety review, structural safety is the lead plan review discipline. For projects requiring only Accessibility and Fire/Life Safety review that are performing back check reviews, the Accessibility reviewer is the lead plan reviewer. If plans were digitally submitted for initial review per DSA Procedure [PR 14-06](#), electronic back check is automatically allowed but not required. If the lead plan reviewer is no longer available, the design professional must contact a DSA Supervisor to provide a new lead plan reviewer for back check.
- 1.2** The lead plan reviewer checks the submittal criteria shown in Section 2.5 to verify that electronic back check is allowed for the project. If the electronic back check submittal criteria are not met, a traditional paper back check will be scheduled.

Additional requirements if the marked-up plan review submittal was on paper:

- 1.3** The design professional must submit the project to DSAbox by clicking on the link

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provided and filling out Form [DSA 95](#). The DSA 95 will then be automatically routed to the DSA 95 Intake Folder. The DSA regional office's designated document controller will be automatically notified from DSAbox.

- 1.4 The document controller will contact the lead plan reviewer to ensure he or she has verified that the project meets the criteria for electronic back check.
- 1.5 Upon verification that the project meets the criteria for electronic back check, the document controller sets up the root folder template in the project folders. The document controller then invites to the DSAbox project folder the design professional, the applicable DSA plan reviewers and all other collaborators listed on the DSA 95 at the permission levels identified on the form.
- 1.6 The design professional and collaborators accept the invitation. For more information about accepting the DSAbox Invitation, refer to [Section 2.2 Accessing/Accepting Collaborator Invitations](#) in DSAbox.
- 1.7 The design professional uploads corrected project documents to DSAbox. USB flash drives or compact discs will not be allowed.

If the marked up plan review was digitally submitted, no additional requirements apply.

- 1.8 The design professional contacts the lead plan reviewer to schedule an electronic back check appointment. The design professional must upload all necessary documents to DSAbox before arriving for the in-person back check. The lead plan reviewer performs a quick triage to ensure that all required documents have been submitted to DSAbox before the design professional arrives. If items are missing or incorrectly submitted (e.g. file naming convention, bookmarking, etc. in Section 2 below), the plan reviewer may require the design professional to correct these items and reschedule the back check.

2. SUBMITTAL—DOCUMENT REQUIREMENTS

- 2.1 The design professional and collaborators shall submit corrected and additional project documents to the project folder in DSAbox as applicable, including:
 - Project drawings
 - Project specifications
 - Corrected and additional structural calculations
 - [DSA 103](#): Statement of Structural Tests and Special Inspections
 - California Geologic Survey approval letter
 - Fire alarm and/or sprinkler documents
 - Access compliance component documents
 - Energy calculations
 - Landscape irrigation documentation
 - Any other project-related documents

If the original submittal was on paper, the marked-up drawing sets may be scanned in portable document format (PDF) and uploaded to DSAbox, along with the applicable documents listed above, or the paper set may be brought in at back check. USB flash drives and compact discs will not be allowed.

- 2.2 Files must be uploaded in vector-based or raster PDF only. Bitmap-based PDFs are not

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- allowed, except for scanned plans as indicated in Section 2.3 below. Documents must be black and white or gray scale only; no colors are allowed. Each sheet shall be submitted as a single layer.
- 2.3 Provide a blank area 3-1/2 inches wide x 2 inches high in the same location on each drawing for the digital DSA Identification Stamp. This does not need to be in the title block. This requirement does not apply to scanned copies of previously approved drawings, such as for pre-checks or “for reference only” drawings. DSA will not accept scanned images of corrected plans.
 - 2.4 File naming convention: see Appendix B for file naming requirements.
 - 2.5 Maximum submittal size: 100 drawing sheets or \$ 2,000,000 maximum estimated construction cost, whichever is the least restrictive.
 - 2.6 Bookmarking requirements: see internal procedure PR 06-01 (attachment to DSA policy [PL 06-01](#)) for bookmarking requirements.
 - 2.7 DSA recommends providing files with hyperlinked sheet navigation to help expedite back check reviews. The hyperlinks control enables the inclusion of hyperlinks from the drawing in the resulting PDF file. Hyperlinks can include links to other sheets and named views within a drawing, as well as links to external websites and other files. For example, a plan detail could be hyperlinked to the sheet on which the detail is shown. When the detail is clicked on the plans, the sheet with the detail is shown immediately.
 - 2.8 See Appendix A for the DSAbbox folder where documents are to be submitted, and where the design professional uploads reviewed plans with comments.
 - 2.9 The design professional is to provide responses to plan review comments on the plan adjacent to the comment. A narrative response in letter format is also acceptable.
- 3. BACK CHECK REVIEW**
- 3.1 The lead plan reviewer will meet with the design professional in the back check room at one of the designated electronic back check stations. If the original review was submitted on paper, the design professional brings in the marked-up set, unless a scanned PDF version of the marked-up set was uploaded to DSAbbox. The design professional may bring in a laptop computer with CAD software for making revisions.
 - 3.2 Electronic back check review will be conducted sequentially by discipline. Concurrent reviews on multiple monitors may be available in the future. The lead plan reviewer is the last discipline to review the corrected documents, and performs the final sign off and approval.
 - 3.3 The first plan reviewer logs on to the electronic back check station computer using his or her own account and opens the corrected drawing set with Bluebeam Revu in the DSAbbox Edit environment. If the plan review was performed digitally, the plan reviewer opens the reviewed drawing file with the original comments on the other monitor.
 - 3.4 Reviewers compare corrected documents against original comment sets. Each plan reviewer makes green marks over resolved, DSA-generated comments. The original comments may be on paper or in a PDF file if the documents were submitted digitally, or if the paper plans with comments were scanned.
 - 3.5 If unresolved or additional comments are necessary during the electronic back check, the plan reviewer may create markups in Bluebeam using the “Back Check” tool set for each affected sheet – one color for each DSA discipline. The colors to use are:

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- Red for Structural Safety
- Orange for Fire/Life Safety
- Blue for Accessibility

Upon completion by the plan reviewer of all back check comments for his or her discipline, the plan reviewer will filter comments by subject and export them to a file with the three-digit discipline name. This may not be necessary if only a few revisions are required.

3.6 The reviewers and the design professional discuss unresolved comments and agree to the most expeditious way to resolve them. Suggested methods of revising documents are listed below.

- For minor comments, such as revising or adding text, adding simple graphics such as lines, arrows, circles, etc., the design professional could make these revisions on Bluebeam using DSA's back check computer on the affected sheet(s) in the presence of the plan reviewer. Revisions may be performed using the computer keyboard and mouse, or by using the Wacom optical character recognition tablets supplied at each electronic back check station. These tablets have a pen stylus that allows for a simulated "hand markup" that is translated into a digital representation on the sheet.
- For details that need to be added to a sheet: If details are created digitally, they can be imported into Bluebeam using methods such as copy and paste, the Windows snipping tool, or the snapshot tool within Bluebeam. If they are drawn by hand, they may be scanned using a DSA scanner or the design professional's smartphone. Details must be legible after being added to the drawing file.
- If details are to be revised, the design professional may revise them in Bluebeam with concurrence of the plan reviewer. If there are too many graphic items to be revised in a timely manner, the plan reviewer may require the design professional to complete the revision with the CAD program and email it to the plan reviewer.
- If the comments are extensive and require entire sheets to be replaced, the plan reviewer will instruct the design professional to extract the sheets from the originally submitted set into a separate file, named per the DSA naming convention and saved to DSAbbox (see item 3.8).

3.7 The plan reviewer saves the file and logs out of DSAbbox Edit when finished before the next plan reviewer begins. Subsequent plan reviewers follow the same procedure.

3.8 For sheets still requiring multiple revisions exceeding those that can be corrected in a timely manner, the plan reviewers may go back to their desks while the design professional makes corrections on his or her own computer. If the corrections are extensive, the plan reviewer may require the design professional to continue the back check on another day. The new comment file must be saved per the DSA naming convention in Appendix B.

3.9 This process continues until all documents are reviewed and ready for approval (see Item 3.8). If documents cannot be approved, the lead plan reviewer uploads the files to DSAbbox with the current filename and locks each file. The lead plan reviewer then re-schedules the electronic back check continuation with the design professional.

3.10 When all revisions have been corrected, the design professional will inform the plan reviewer that all comments generated during back check were completed and are ready

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for final review. The design professional will review the corrections and track their status in the Bluebeam “Mark Ups” panel, indicating whether the comment is accepted or rejected. Upon acceptance of all back check comments from all plan reviewers, the lead plan reviewer will instruct the design professional to extract the corrected sheets from the revised corrected set as a separate file to replace the corresponding sheets in the originally submitted project set to DSAbbox. The design professional will then upload only the corrected sheets to DSAbbox.

- 3.11** The design professional will add a corrected, DSA-provided “corrected stamp” to each the revised sheet and will export a summary in .CSV format from the “Markups” panel in Bluebeam to aid as a dashboard when replacing sheets in the originally submitted set.
- 3.12** The design professional will inform the lead plan reviewer that all corrected sheets have been replaced in the original set. The lead plan reviewer will verify the replaced sheet indicates the “corrected stamp” and the sheet total is the same as the originally submitted set. The lead plan reviewer then deletes the “corrected stamp” from all inserted sheets using the “Markups” panel.

4. APPROVAL

- 4.1** The lead plan reviewer verifies with other plan reviewers that documents are ready for approval. Each plan reviewer emails the lead plan reviewer, indicating their discipline is ready for approval as a matter of record. This can be done in DSAbbox by adding the “@” symbol before the lead plan reviewer’s name in the comments field and typing a message. For example, “@ John Doe – the AC review is complete”. An email will be sent to John Doe indicating that the AC review is complete.
- 4.2** The lead plan reviewer applies his or her initials and the initials of all other plan reviewers on DSA’s digital Identification Stamp on the cover sheet of the drawings in Bluebeam. The lead plan reviewer then clicks “Apply to all sheets.” If any sheets were scanned, e.g. previously approved pre-check drawings, the lead plan reviewer verifies that the stamp is readable. The lead plan reviewer moves the stamp on each sheet if it interferes with graphics or text.
- 4.3** Once documents contain the DSA identification stamp and signature of all plan reviewers, the lead plan reviewer deselects “Allow Markup Recovery” and flattens each document file in Bluebeam. The filename must be revised to indicate approval, as noted in Appendix B.
- 4.4** The lead plan reviewer uploads approved document files to the appropriate folder in DSAbbox.
- 4.5** Post-Approval: Form DSA 145 is not required.

The plan reviewer:

- Reviews and signs the DSA 103 electronically in Bluebeam, or prints the form, signs by hand, and scans it into a PDF file. The file is then uploaded to DSAbbox.
- Completes the DSA 153 (internal form) and uploads to DSAbbox.
- Prints the Documents Required Sheet from Tracker and gives it to the client.
- Fills in the Plan Check Worksheet in eTracker as for paper plan review projects.

NOMENCLATURE:

DSAbbox

Project Review Box, a cloud-based storage site where DSA

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| | project files are located. |
| Document Controller | A DSA administrative staff person who reviews the Form 95, invites collaborators to DSABox, and grants permissions such as viewer and uploader in DSABox. |
| Design Professional | The design professional in responsible charge of the project, or his or her authorized representative |
| Electronic Back Check | An in-person DSA back check performed using a computer and monitors supplied in the back check room. |
| Lead Plan Reviewer | The DSA plan reviewer who arranges the back check with the design professional, and stamps and signs drawings and specifications once they are approvable, usually the structural reviewer. |
| Project Set | All documents submitted for review or back check by the design professional. |
| Record Set | Only the documents submitted in the project set required to be used by DSA for certification or determined by DSA to be beneficial. |

ADDITIONAL RESOURCES:

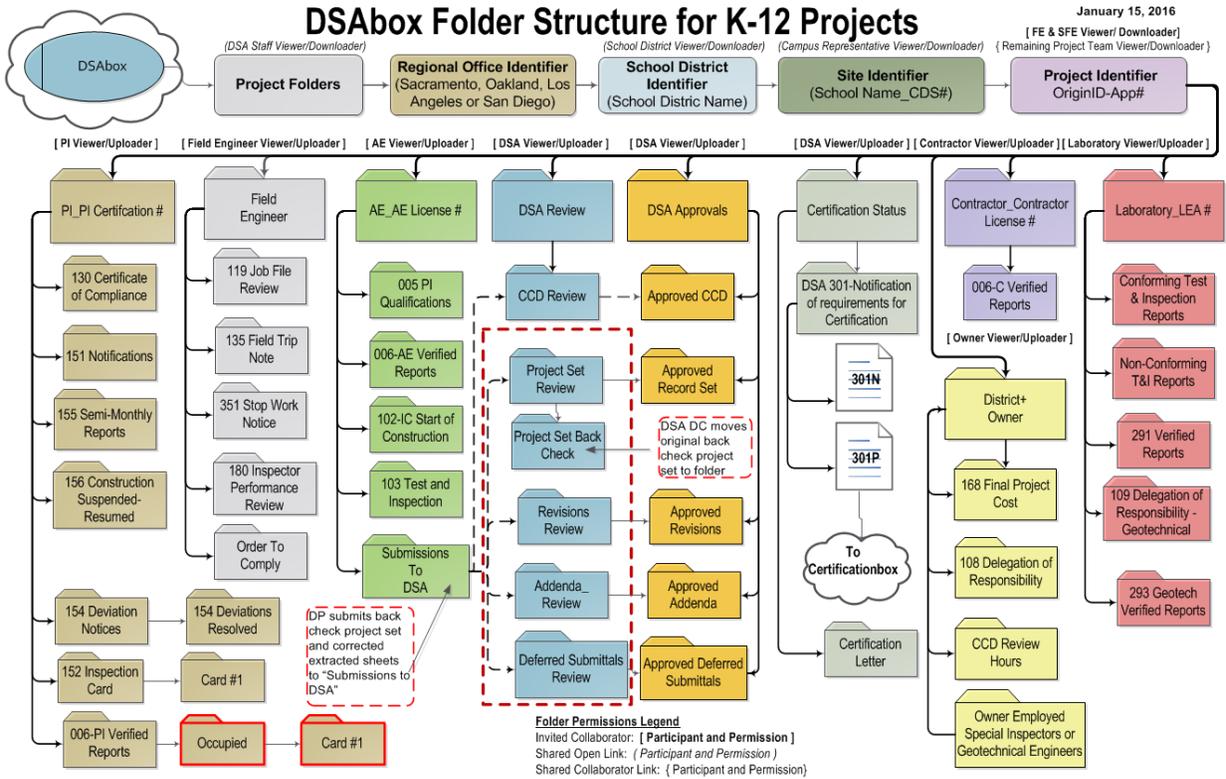
Intake Project Review Box information available at:

<http://www.dgs.ca.gov/dsa/Programs/progProject/dsabox.aspx>

A Division of the State Architect (DSA) Procedure documents a process or series of steps that DSA staff and/or external stakeholders must complete in order to fulfill one or more administrative requirements of DSA's plan and construction review programs.

ELECTRONIC BACK CHECK FOR PLAN REVIEW PROJECTS

APPENDIX A



ELECTRONIC BACK CHECK FOR PLAN REVIEW PROJECTS

APPENDIX A (Continued)

