

Construction Photos and Videos

The Structure Representative (SR) and Assistant Structure Representatives (ASR's) are to take photos to record the progress of structure construction work. Typically, many photos are taken as it is not always clear at the time what, and how much photo documentation will be useful in the future. This attachment provides guidance on when and how to take photos, how to file photos, and which photos to include in the daily and weekly reports. The use of the term photographic records includes video records and/or drone photos.

Multiple sections of the *Construction Manual* detail the utility of photographic and video records which may be used to support administrative decisions made during the progress of the project. The information in the following sections of the *Construction Manual* will typically not be repeated in the text of this attachment and it is the responsibility of the SR and ASR to be familiar with these sections. The sections most commonly applicable to Structure Construction (SC) staff are as follows:

1. Chapter 2, *Safety and Traffic – Safety – Duties and Responsibilities – Division of Occupational Safety and Health*:
 - a. [Section 2-104D\(1\)](#), *Elements of a Cal/OSHA Inspection*
 - b. [Section 2-104D\(2\)](#), *Participation in the Inspection*
2. Chapter 3, [Section 3-523D](#), *General Provisions – Requests for Information and Potential Claim Records – Documentation Guidelines for Disputes*
3. Chapter 4, *Construction Details*:
 - a. [Section 4-1502](#), *Existing Facilities – Before Work Begins*
 - b. [Section 4-1903A\(3\)](#), *Earthwork – During the Course of Work – Roadway Excavation – Slides and Slipouts*
4. Chapter 5, Section 1, *Contract Administration – Project Records and Reports*:
 - a. [Section 5-102](#), *Organization of Project Documents – Description of Categories – Category 14 Photo Records*
 - b. [Section 5-102C](#), *Description of Categories – Category 62 Disputes*
 - c. [Section 5-104C](#), *Final Construction Project Records – Disposition of Construction Project Records, Table 5-1.1 Construction Records Retention Schedule, Item 14 – Photos Records*
5. Chapter 5, Section 4, *Contract Administration – Disputes*:
 - a. [Section 5-413](#), *Preliminary Construction Claim Findings and Category 62 Preparation and Guidelines*

6. Chapter 5, Section 4, *Contract Administration – Disputes – Construction Claim Findings Preparation and Guidelines*:
 - a. [Section 5-414A\(10\)](#), *Format – District’s Position*
 - b. [Section 5-414A\(15\)](#), *Format – Exhibits*
 - c. [Section 5-414B](#), *Helpful Hints*
 - d. [Section 5-414C](#), *Things to Avoid*.

1 - Guidance on When to Take Photos

The purpose of taking photographs includes, but is not limited to, the following: to show progress, show critical elements, support claim resolution, and to document constructability, quality, and safety issues. Some examples of when to take photographs are as follows:

Pre-construction:

1. Document existing conditions before the start of construction.
2. Include views from all approach directions as well upstream and downstream when applicable.
3. If adjacent property will be disturbed during construction, include photos of the existing conditions, such as existing sidewalks, curbs, and gutters, where construction access driveways are constructed. Photos are useful to facilitate restoration as required in *Contract Specifications*, Section 5-1.36, *Control of Work – Property and Facility Preservation*, and to settle disputes.

During Construction:

1. Progress photos noting new conditions, contractor operations, and new workmanship and methods employed.
2. Photos of notable incidents, such as accidents, lane closure signage, and demarcation.
3. Photos of poor workmanship and items not constructed per plan. Document resolution of the issue in the daily report. If possible, photos should be used to document the correction of poor workmanship and items not constructed per plan.
4. Photos of notable features, paying special attention to those that will not be visible later, such as:
 - a. Reinforcement including:
 - i. Location of couplers

- ii. Added rebar around utility openings
 - iii. Completed rebar prior to concrete pour.
 - b. Falsework including:
 - i. Erection stages
 - ii. Connections
 - iii. Soil conditions surrounding falsework pads
 - iv. Traffic openings.
5. Soil conditions encountered during drilling or excavation.
6. Change order work.
7. Disputed items that could lead to a claim.
8. Buried man-made objects.
9. Safety issues. Document resolution in daily report. If possible, document the resolution of the safety issues with more photos.

After Construction:

1. Photos demonstrating completed work. Show the best view possible of the feature being photographed.
2. Include at least one photo of each completed structure in its entirety.

2 - Guidance on How to Take Photos

It is good practice when using a State-issued iPhone to have a date and time stamp on the photo. On State-issued iPhones, the “Hub” (formerly “Workspace”) application can be used to find State-approved applications for download. “Timestamp Camera Basic” is a photo app that will imprint metadata directly on the photo with little effort by the user. Some customization is possible; the user should explore the app to learn the capabilities. Following download, this app will be used to take photos instead of the iPhone camera app. Photos taken through “Timestamp Camera Basic” will be stored in the same location as photos taken through the iPhone camera app, in the Photos app. See Figure 2-1 below for an example of the automatic imprinted photo information.



Figure 2-1. Example of metadata imprinted on photo

Other examples of good practices include:

1. Include an item to show scale if it would enhance the viewer's understanding of what the photographer is intending to show. An example of this would be to use a tape measure alongside a crack in concrete.
2. Consider lighting when composing the picture.
3. Multiple photos may be necessary to communicate location and intent on larger jobs.
4. Consider taking notes for the photos to convey the intended topic and include in a photo template such, as shown in [Attachment 3](#), *Assistant Resident Engineer's Daily Report – Example*.

3 - Guidance on Downloading Photos

For photos on iPhone's, download photos to a computer hard drive using a USB cable. After connecting the USB cable, the following message shown in Figure 3-1 will appear on the computer screen:

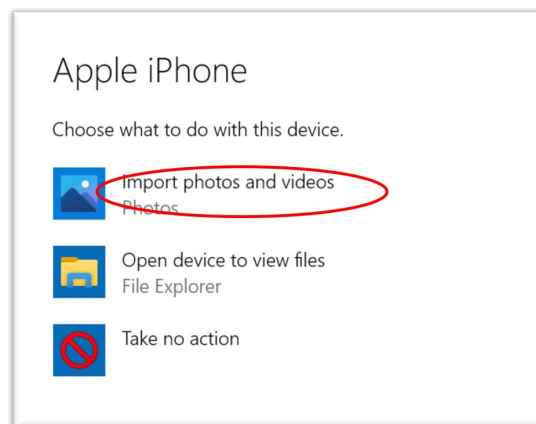


Figure 3-1. iPhone message 1 when downloading photos

Select “Import photos and videos.” The following message shown on Figure 3-2 will appear on the iPhone:

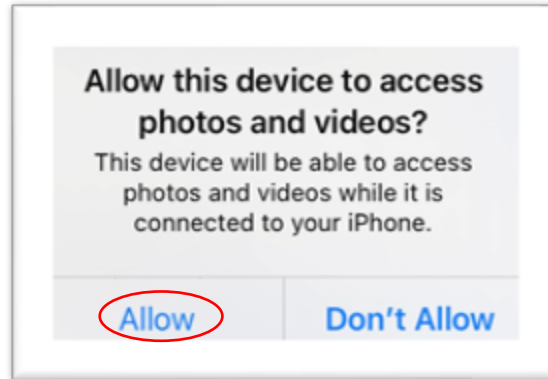


Figure 3-2. iPhone message 2 when downloading photos

Select “Allow.” Next, the following import window shown in Figure 3-3 will appear on the computer screen. The import file location can be changed if desired; “All items” or “Items since last import” can be chosen as shown below.

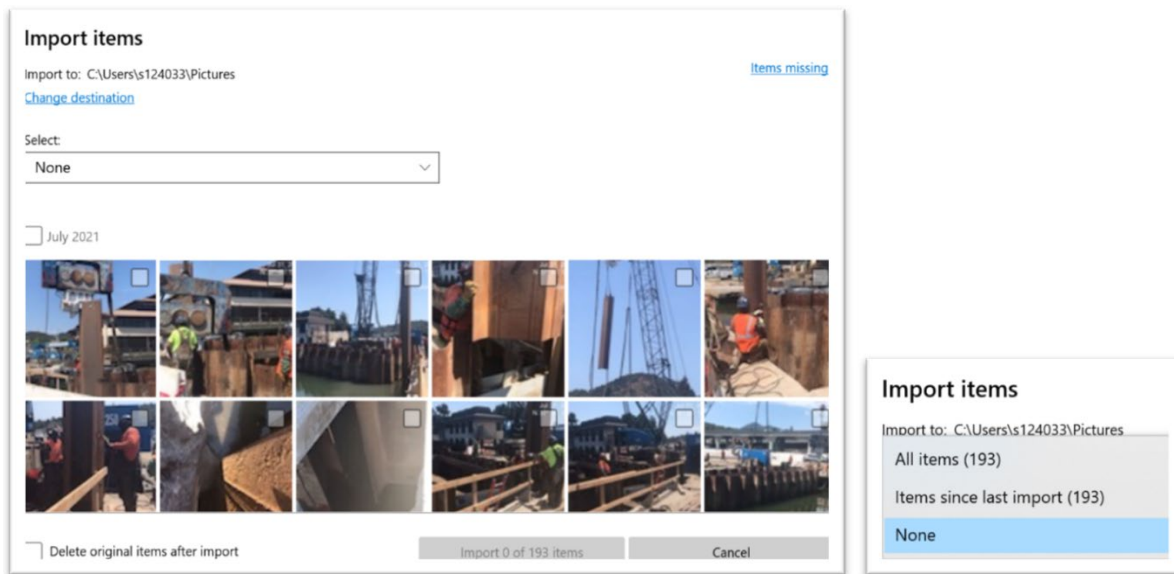


Figure 3-3. iPhone message 3 when downloading photos

Photos should be periodically deleted from the iPhone to avoid device storage capacity issues.

4 - Filing Photos

File all photographic records in project records Category 14, *Photo Records*, per *Construction Manual*, [Section 5-102C](#), *Description of Categories*. Suggested subcategories are:

- Before Construction
- During Construction
- After Construction.

The SR/ASR should comply with any District instructions and policy in connection with identifying and filing SC photographs. In the absence of District policy, use the guidelines contained in this section. Several factors may influence the most appropriate method of storing photos.

If the project is large, it may be helpful to create subcategories by structure. ASR's should consult both the SR and Bridge Construction Engineer (BCE) regarding what additional file structure, if any, should be used above and beyond placement in Category 14.

If the District has a common server available, place photos in the digital Category 14. Place photos in the server allowing the metadata to sort photos by date. The ASR/SR need not rename photos unless requested by the Resident Engineer/BCE. It is recognized that a more detailed photo management process may be desired, and that must be weighed with the time expenditure required. Use care to not over-write another engineer's photos. Automated naming by the device may be a duplicate of that from another device. If so, the following pop-up window shown in Figure 4-1 will appear on the computer screen:

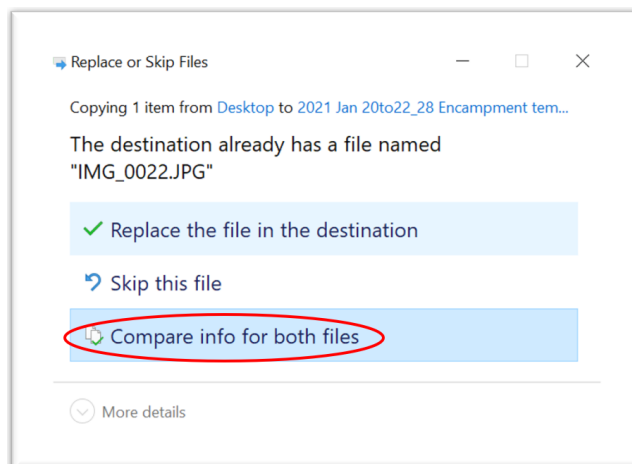


Figure 4-1. iPhone potential message 4 when downloading photos

Choose “Compare info for both files.” A prompt will appear asking which file is correct to keep. Different photos will have different metadata. In such a case, both photos should be selected as shown below in Figure 4-2. This will add a number to the end of the file name to differentiate the two files.

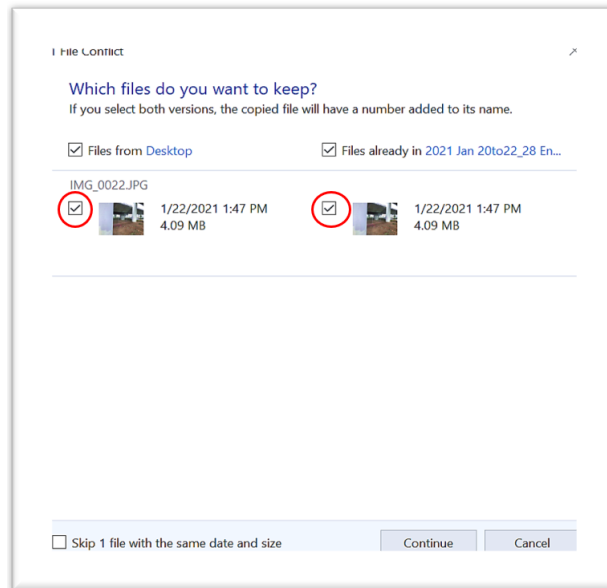


Figure 4-2. iPhone potential message 5 when downloading photos

Searching for photos by date can be performed by clicking the “Date modified” button shown in Figure 4-3.

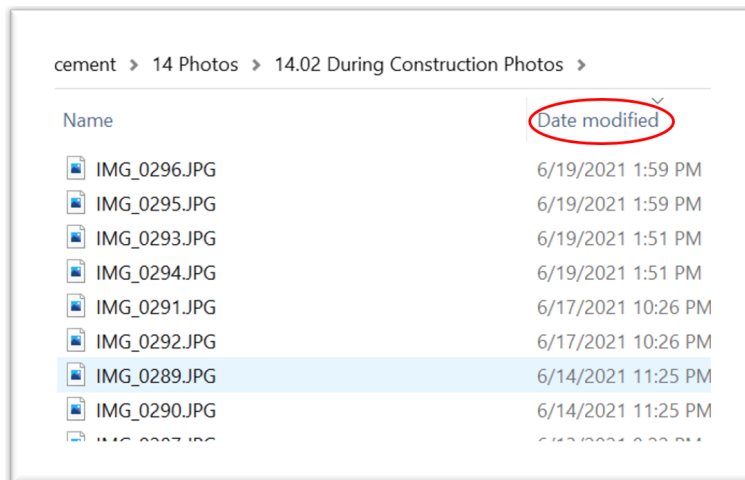


Figure 4-3. iPhone message 6 when downloading photos

If the District does not have a common server available, consult the BCE for direction regarding how digital photos are to be stored and/or transferred. This may include an external thumb drive, external hard drive, or other mechanism, as directed.

5 - Guidance on Selection of Photos for Daily and Weekly Report

Though many photos are taken, it is not necessary to attach all photos to the daily or weekly report. Choose a representative number that will show progress and communicate any issues. While all pictures may not be attached to the report, it is important to follow the procedure of filing all photos in Category 14, *Photo Records*. Often in a dispute situation, the SR and BCE will find pictures in Category 14 that will help the State defend its position.

6 - ProDMS and Photos

The rollout of the ProDMS web-based application will change the process by which SC attaches photos to daily reports. The rollout is phased; until it is complete, the above method will provide the structure for photo management and storage. For projects using ProDMS, see the following link for adding photos to daily reports:

[QC9-Daily Report Attachments](#)

7 - Falcon and Photos

The rollout of the Division of Construction's Falcon File Storage will change the process by which SC stores photos. Falcon is intended for ***final*** file disposition only; working documents are to be stored on local servers. At this time, there are some differences between Districts regarding how to apply this to the large volume of photos taken during construction. Follow local District policies.