

Preparing Activity: USACE

New

UNIFIED FACILITIES GUIDE SPECIFICATIONS

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 32 33.00 10

PHOTOGRAPHIC DOCUMENTATION

05/25

PART 1 GENERAL

- 1.1 PAYMENT
- 1.2 SUBMITTALS
- 1.3 PHOTOGRAPHIC DOCUMENTATION PLAN
 - 1.3.1 Schedule
 - 1.3.2 Qualifications
 - 1.3.3 Hardware and Online Platform
 - 1.3.4 Permissions, Permits, and Waivers
- 1.4 MEETINGS AND COORDINATION
 - 1.4.1 Coordination and Mutual Understanding Meeting
 - 1.4.2 Sample Photographic Documentation Submittal Coordination Meeting

PART 2 PRODUCTS

- 2.1 PHOTOGRAPHIC DOCUMENTATION TECHNICAL REQUIREMENTS
 - 2.1.1 Digital Image
 - 2.1.2 Exchangeable Image File Format (EXIF)
 - 2.1.3 Indexing and Navigation System
 - 2.1.4 Overlapping Photographic Techniques
 - 2.1.5 Digital Photography
 - 2.1.6 Classified or Personally Identifiable Information (PII)
 - 2.1.7 Final Record Photographic Documentation
- 2.2 WEB ACCESS AND ONLINE INTERFACE
 - 2.2.1 Web Access
 - 2.2.2 Online Interface
 - 2.2.3 Mobile Application Requirements
 - 2.2.3.1 Mobile Application User Access
 - 2.2.3.2 Mobile Application Navigation
 - 2.2.3.3 Mobile Application Interactive Features
 - 2.2.4 Contractor Provided Tablets

PART 3 EXECUTION

- 3.1 FEATURES, SEQUENCING, AND SCHEDULING
 - 3.1.1 Existing Conditions
 - 3.1.1.1 Existing Site Conditions
 - 3.1.1.2 Existing Site Utilities
 - 3.1.2 Exterior and Interior Construction
 - 3.1.2.1 Exterior Site Construction
 - 3.1.2.2 Exterior Elevations
 - 3.1.2.3 Final Exterior Elevations
 - 3.1.2.4 Interior Construction
 - 3.1.2.5 Equipment
 - 3.1.3 Detailed Photographic Documentation
 - 3.1.3.1 Mechanical, Electrical, Plumbing, Fire Protection, Telecommunications, and Special Systems
 - 3.1.3.2 Finished Detailed Interior Finishes
 - 3.1.3.3 Finished Interior Fixed Furniture & Equipment (FF&E)
 - 3.1.3.4 Additional Requirements

-- End of Section Table of Contents --

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PHOTOGRAPHIC DOCUMENTATION
05/25

NOTE: This guide specification consolidates the requirements for Photographic Documentation on all contract delivery types (i.e. design-build, design-bid-build, Early Contractor Involvement (ECI), Integrated Design and Construction (IDAC), etc., and all project types whether Civil Works, MILCON, or others.

This guide specification serves as a reference point for photo documentation requirements during construction. Consult all appropriate agency guidance and policies as well as stakeholder requirements to determine the components of this specification to retain for a particular project. Additionally, coordinate selection of the optional requirements in this guide specification with Construction Division to ensure that the requirements are appropriate for the complexity and issues of concern requiring documentation.

Thoroughly edit this section throughout and coordinate with other related or referencing specifications. Commonly related specifications that may contain photo documentation requirements include but are not limited to: 01 31 20 PROJECT TECHNICAL DATA MANAGEMENT AND VISUALIZATION, 01 32 01.00 10 PROJECT SCHEDULE, 01 33 00 SUBMITTAL PROCEDURES, 01 45 00 QUALITY CONTROL, 01 78 00 CLOSEOUT SUBMITTALS, 01 78 23 OPERATION AND MAINTENANCE DATA, and 01 78 24.00 10 FACILITY DATA REQUIREMENTS.

Adhere to [UFC 1-300-02](#) Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert

appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

PART 1 GENERAL

1.1 PAYMENT

Separate payment will not be made for providing and maintaining the Photographic Documentation requirements. Include all associated costs in the applicable Bid Pricing Schedule item. The Government will review the online platform for Photographic Documentation prior to submission of each monthly pay estimate.

1.2 SUBMITTALS

NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item, if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy and Air Force projects.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification

identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Photographic Documentation Plan; G, [_____]

Sample Photographic Documentation; G, [_____]

SD-11 Closeout Submittals

Final Record Photographic Documentation; G, [_____]

1.3 PHOTOGRAPHIC DOCUMENTATION PLAN

Provide the Government with a Photographic Documentation Plan for the collection, organization, and turnover of Photographic Documentation to the Government. At a minimum, include the following items:

1.3.1 Schedule

Document the schedule for all Photographic Documentation activities, online platform submissions, and deliverables in the project. Coordinate photography locations, schedule, and frequency with the Contracting Officer at the Initial Photographic Documentation Coordination Meeting. Ensure all aspects are coordinated with the Project Schedule, to include online platform initial availability to Government, each instance of elements outlined in paragraph FEATURES, SEQUENCING, AND SCHEDULING, as well as all meetings and Government coordination activities.

1.3.2 Qualifications

Provide resumes for key personnel involved in the Photographic Documentation process demonstrating a minimum experience of [three][_____] years in operation providing Photographic Documentation for construction projects with advanced indexing and navigation systems. Include a representative portfolio of construction projects of similar type, size, duration, and complexity as this Project.

1.3.3 Hardware and Online Platform

Document the hardware and online platform being used for collection and organization of Photographic Documentation. Identify type, format, and anticipated organization of digital storage media to be provided as part of required deliverables.

1.3.4 Permissions, Permits, and Waivers

Include documentation of required permissions, permits, and waivers as necessary for approval of onsite use of photographic hardware. The Contractor is responsible for researching and identifying any applicable permissions, permits, and waivers.

1.4 MEETINGS AND COORDINATION

To ensure that Photographic Documentation requirements are coordinated, have mutual understanding, and are being met through the duration of the project, organize the following meetings:

1.4.1 Coordination and Mutual Understanding Meeting

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the Photographic Documentation Plan, meet with the Contracting Officer and at a minimum, discuss the following.

- a. The requirements for Photographic Documentation scheduled activities and deliverables under this contract.
- b. Primary roles and responsibilities associated with the collection, development, and delivery of the Photographic Documentation online submissions and deliverables.

1.4.2 Sample Photographic Documentation Submittal Coordination Meeting

Provide Government access to the online platform and a Sample Photographic Documentation submittal within 30 days of Government approval of the Photographic Documentation Plan for review of the online platform setup and configuration, and as an example of what the standalone Final Record Photographic Documentation submission will be for review.

Facilitate a meeting within 14 days following submission of the Sample Photographic Documentation submittal. The purpose of this meeting is to demonstrate compliance with the requirements identified in this specification as well as for verification of suitability of Final Record Photographic Documentation. The applicable deliverables, along with Government remarks associated with review of these submittals serve as the primary guide and agenda for this meeting. At a minimum, discuss the following during this meeting:

- a. Demonstrate online platform organization and setup.
- b. Demonstrate Quality Control (QC) and verification procedures, as applicable, by Contractor QC Manager.
- c. Review contents and organization of deliverables.
- d. Discuss Government review comments and unresolved items.

PART 2 PRODUCTS

2.1 PHOTOGRAPHIC DOCUMENTATION TECHNICAL REQUIREMENTS

2.1.1 Digital Image

Take each digital image with a professional grade camera or 360-degree camera with minimum resolution of 16 megapixels (MP). Provide photos in a lossless compression file format (e.g. .TIFF, .PNG and .GIF).

2.1.2 Exchangeable Image File Format (EXIF)

NOTE: EXIF currently supports up to version 3 however the default below is 2.3 to provide more flexibility since there are currently no dependencies that rely on version 3. Provide a different option in the bracket if a specific

version is required.

Include metadata in EXIF version [2.3][_____] or higher. Geotag all photos in EXIF metadata.

2.1.3 Indexing and Navigation System

NOTE: Include bracket option below if integration with BIM is desired by the stakeholder.

Make the indexing and navigation system utilize current construction drawings[and Building Information Modeling (BIM)], making such drawings[and BIM] interactive utilizing an online interface. Allow for secure multiple-user access, simultaneously, online. For all Photographic Documentation, indexing and navigation must be organized by both time (date-stamped), location, and orientation of photo throughout the project. Migrate photo indexing to updated drawings[and BIM] when new drawings are issued.

2.1.4 Overlapping Photographic Techniques

Use overlapping photographic techniques to ensure maximum coverage without gaps.

2.1.5 Digital Photography

Restrict all digital photography and do not release digital photography outside the Government and project team without written permission from the Contracting Officer.

2.1.6 Classified or Personally Identifiable Information (PII)

Photography of items or elements designated as Classified or containing PII data is not permitted.

2.1.7 Final Record Photographic Documentation

NOTE: Include bracketing option for preferred final deliverable method to be provided to the stakeholder. If BIM indexing was chosen in paragraph INDEXING AND NAVIGATION SYSTEM, include the option here as well.

Upon completion of the project, provide standalone Final Record Photographic Documentation with the indexing and navigation system embedded (and active) in[[two][_____] government approved external hard drive[s]][government approved file exchange system][_____]. There cannot be any external dependencies. Ensure all necessary content and navigation capabilities are included and usable on the stakeholders system.[Make the final deliverables have BIM interface capabilities.]

2.2 WEB ACCESS AND ONLINE INTERFACE

2.2.1 Web Access

NOTE: Remove bracketing option if stakeholder does not want the online system to be available after the period of the contract.

Provide an online interface with capability to view all high-definition digital still images captured and stored during construction. Provide access to an unlimited number of Government personnel with username and password protection, with read-only permissions to all content. Coordinate Photographic Documentation platform account access with Government. Notify Government in the event of any unplanned outages.

Maintain images on the system vendor's website for reference throughout the construction period[and for a period extending one-year after final acceptance].

2.2.2 Online Interface

NOTE: Include bracket option if value added to the project.

Provide an online interface with the following functions:

- a. Display Project name and Government logo.
- b. Provide calendar-based navigation system with the capability to browse through images from a specific location moving forward and backward in time through a slideshow.
- c. Provide pan and zoom capability for zooming into high-definition images.
- d. Provide view allowing user to view multiple locations or areas of the project.
- e. Provide screen maximizing view (full screen) of images on user's monitor.
- [f. Provide a view showing two discrete images side by side for comparison.]
- [g. Provide view showing two discrete images overlaid (overlay mode), allowing user to determine differences between the two.]
- [h. Provide view allowing user to view image and BIM overlay to determine differences between the two.]

[2.2.3 Mobile Application Requirements

NOTE: Include paragraph MOBILE APPLICATION REQUIREMENTS to include Photographic Documentation

mobile application if desired.

Provide and support a mobile application that provides direct access to Photographic Documentation for Government users on Government furnished mobile devices. The mobile application must be available for installation on Apple iOS and Android mobile devices and perform the following functions:

2.2.3.1 Mobile Application User Access

The mobile application must utilize the same usernames and passwords used for the online interface and enforce the same permission levels assigned through the online interface.

2.2.3.2 Mobile Application Navigation

- a. Enable navigation of documentation by indexed locations on the interactive drawings.
- b. Ability to navigate documentation by collections of photographs grouped by date, timestamp, descriptive location (such as "Floor 1" or "Area A"), discipline, and subject matter.
- c. Ability to navigate immersive 360-degree panoramic documentation by tap, drag, scroll, and other supported touch gestures to provide a seamless, 3D virtual tour experience of the immersive documentation.

2.2.3.3 Mobile Application Interactive Features

The mobile application will include standard interactive features for users. At a minimum, include capabilities to:

- a. Enable users to zoom in and out on still images as well as markup still images using native annotation tools in accordance with the acting user's permission level.
- b. Allow additions or modifications made to Photographic Documentation via mobile application to be reflected on the online interface[(refer to paragraph Online Interface).]

]2.2.4 Contractor Provided Tablets

**NOTE: Edit to include contractor provided tablets
only if there are web-based government access
limitations.**

Provide [five][_____] tablets to the Government with full capabilities defined in Mobile Application Requirements. Government will return contractor provided tablets upon project completion. Contractor to coordinate with Contracting Officer to ensure all contractor furnished equipment provided to the Government is accounted for upon return.

]PART 3 EXECUTION

NOTE: Edit paragraphs below to reflect

project-specific features of work and Photographic Documentation types that align with project needs. Projects of any scale and complexity would typically include 1)Existing Site Conditions, as well as 2)Exterior and Interior Construction (if applicable) options. It is also recommended to include the options for 1)Pre-slab and Site Utilities, 2)Exterior Elevations, 3)Final Exterior Elevations, 4)Equipment, and 5)Mechanical, Electrical, Plumbing, Fire Protection, Telecommunications, Special Systems.

3.1 FEATURES, SEQUENCING, AND SCHEDULING

During the construction period provide and submit Photographic Documentation of construction progress as defined below.

3.1.1 Existing Conditions

NOTE: If site work or pad preparation is extensive, this documentation may be required immediately at several pre-determined intervals before work commences. Utilize last bracket option in paragraph EXISTING SITE CONDITIONS, in these cases with appropriate revisions for project conditions.

3.1.1.1 Existing Site Conditions

Prior to construction, document the existing site conditions with[photographs][and][360 photographs] for all physical features within the project site boundaries including but not limited to the[foundations][,][adjacent streets][,][roadways][,][parkways][,][driveways][,][curbs and gutters][,][sidewalks][,][landscaping][,][levees systems][,][adjacent utilities][,][____][, and][adjacent structures]. [Document with photos every [7][____] days and immediately before work commences.] Accomplish indexing and navigation through interactive site plan drawings.

[3.1.1.2 Existing Site Utilities

Document as-built conditions with [photographs][and][360 photographs] of site utilities prior to any pouring of slabs, placing concrete, backfilling, demolition, or covering up. For this process, also include all exposed underground or in-slab utilities. Take photos at consistent pre-determined locations and intervals, not less than once every [7][____] calendar days[and][at identified milestones][____]. Accomplish indexing and navigation through interactive site and system utility drawings.

]3.1.2 Exterior and Interior Construction

3.1.2.1 Exterior Site Construction

Document exterior construction progress with[photographs][and][360 photographs] at consistent pre-determined locations and intervals, not less than once every [7][14][30][____] calendar days. Provide full coverage around the site and for each[building][and][structure]. Accomplish indexing and navigation through interactive site plan drawings.

[3.1.2.2 Exterior Elevations

Document as-built conditions of all exterior elevations with an increased concentration of[photographs][and][360 photographs] on critical features of work, such as waterproofing, flashing, steel work, and detailing. Take photos at consistent pre-determined locations and intervals, not less than once every [7][_____] calendar days[and][at identified milestones][_____]. Accomplish indexing and navigation through interactive plans, elevations, or elevation details.

]3.1.2.3 Final Exterior Elevations

Provide a minimum of four images of each elevation of each[building][and][structure] upon project completion[, including landscaping]. [Photographs][and][360 photographs] must be taken on a clear sunny day to obtain sufficient detail to show depth and to provide clear, sharp pictures.

]3.1.2.4 Interior Construction

Document interior construction progress with[photographs][and][360 photographs] at consistent pre-determined locations and intervals. For this process, include all finished systems located in the[walls, floors, and ceilings][_____] prior to enclosure. Accomplish indexing and navigation through interactive architectural drawings.

3.1.2.5 Equipment

NOTE: Select equipment in place (personal property) bracket option if desired by stakeholder. Select Section 01 78 24.00 10 FACILITY DATA REQUIREMENTS bracket option for Army projects, and Section 01 78 24.00 20 FACILITY DATA WORKBOOK (FDW) for NAVFAC.

Photographs of equipment can greatly reduce quality assurance requirements for on-site field verification, and are useful during Commissioning, Operations and Maintenance, and other purposes during construction, and for subsequent Operations and Maintenance.

Document with[photographs][and][360 photographs] all installed building equipment (IBE) (real property)[and equipment in place (EIP) (personal property)] in accordance with Section 01 78 00 CLOSEOUT SUBMITTALS, 01 78 23 OPERATIONS AND MAINTENANCE DATA, and[Section 01 78 24.00 10 FACILITY DATA REQUIREMENTS][Section 01 78 24.00 20 FACILITY DATA WORKBOOK (FDW)]. Provide at least one photo showing an overall view of each piece of equipment and one close-up photo of the equipment nameplate. Additionally, include one photo for each label and tag applied to equipment (such as Warranty Tag, barcodes, and QR Codes). Ensure that all textual information is clearly legible. Accomplish indexing and navigation through interactive architectural (interior equipment) and site plans (exterior equipment).

[3.1.3 Detailed Photographic Documentation

[3.1.3.1 Mechanical, Electrical, Plumbing, Fire Protection, Telecommunications, and Special Systems

Document as-built conditions with[photographs][and][360 photographs] of mechanical, electrical, plumbing, fire protection, telecommunications, special systems, and all other systems just before and after inspection, pre-insulation, and prior to enclosure. For this process, include all finished systems located in the[walls, floors, and ceilings][_____]. Take photos at consistent pre-determined locations and intervals, not less than once every [7][_____] calendar days[and][at identified milestones][_____]. Accomplish indexing and navigation through interactive mechanical, electrical, plumbing, fire protection, telecommunications, and special systems drawings.

] [3.1.3.2 Finished Detailed Interior Finishes

Document as-built finished conditions with[photographs][and][360 photographs] of the interior of each[building][and][structure][including floors, ceilings, and walls] at certificate of occupancy or equivalent, or just prior to occupancy, or both, as directed by the Contracting Officer.[Additionally, include one photo of each room placard located in front of each room entrance to capture the exact final room naming and numbering.] Accomplish indexing and navigation through interactive architectural drawings.

] [3.1.3.3 Finished Interior Fixed Furniture & Equipment (FF&E)

**NOTE: This paragraph is required only for projects
where the contractor is providing FF&E in their
contract.**

Document finished interior FF&E with[photographs][and][360 photographs] upon completion of the FF&E installation. [Photographs][and][360 photographs] must be taken prior to occupancy and staged with accessories as needed. Additional lighting may be needed to ensure quality images.

] [3.1.3.4 Additional Requirements

Document other details or milestones as customizable project-specific digital Photographic Documentation with[photographs][and][360 photographs]. Accomplish indexing and navigation through interactive architectural plans.

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