

SECTION 01 3233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.
4. Preconstruction video recordings.
5. Periodic construction video recordings.
6. Web-based construction photographic documentation.

- B. Related Requirements:

1. Section 012200 "Unit Prices" for procedures for unit prices for extra photographs.
2. Section 013300 "Submittal Procedures" for submitting photographic documentation.
3. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
4. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
5. Section 024116 "Structure Demolition" for photographic documentation before building demolition operations commence.
6. Section 024119 "Selective Structure Demolition" for photographic documentation before selective demolition operations commence.
7. Section 311000 "Site Clearing" for photographic documentation before site clearing operations commence.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For **[photographer]** **[and]** **[Web-based photographic documentation service provider]**.
- B. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each **[photograph]** **[video recording]**. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- C. Digital Photographs: Submit image files within three days of taking photographs.
1. Digital Camera: Minimum sensor resolution of 8 megapixels.

2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
 3. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Architect[**and Construction Manager**].
 - d. Name of Contractor.
 - e. Date photograph was taken.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Unique sequential identifier keyed to accompanying key plan.
- D. Construction Photographs: Submit **[two]** **<Insert number>** prints of each photographic view within **[seven]** **<Insert number>** days of taking photographs.
1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight, commercial-grade photographic paper; **[mounted on linen or card stock to allow a 1-inch- (25-mm-) wide margin and] [enclosed back to back in clear plastic sleeves that are]** punched for standard three-ring binder.
 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Architect[**and Construction Manager**].
 - d. Name of Contractor.
 - e. Date photograph was taken if not date stamped by camera.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Unique sequential identifier keyed to accompanying key plan.
- E. Video Recordings: Submit video recordings within **[seven]** **<Insert number>** days of recording.
1. Submit video recordings **[in digital video disc format acceptable to Architect] [by posting to Project Web site] [by posting to Web-based photographic documentation service provider's Web site]**.
 2. Identification: With each submittal, provide the following information:
 - a. Name of Project.
 - b. Name and address of photographer.
 - c. Name of Architect[**and Construction Manager**].
 - d. Name of Contractor.
 - e. Date video recording was recorded.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Weather conditions at time of recording.
 3. Transcript: Prepared on 8-1/2-by-11-inch (215-by-280-mm) paper, punched and bound in heavy-duty, three-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as corresponding video recording. Include name of Project and date of video recording on each page.

- F. Web-Based Photographic Documentation: Submit time-lapse sequence video recordings **[simultaneously with recording] [within <Insert number> days of recording]**.
1. Submit time-lapse sequence video recordings by posting to **[Project Web site] [Web-based photographic documentation service provider's Web site] <Insert posting location> [and monthly on digital video disc]**.
 2. Identification: For each recording, provide the following information:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Architect **[and Construction Manager]**.
 - d. Name of Contractor.
 - e. Date(s) and time(s) video recording was recorded.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Weather conditions at time of recording.

1.4 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.
- B. Web-Based Photographic Documentation Service Provider: A firm specializing in providing photographic equipment, Web-based software, and related services for construction projects, with record of providing satisfactory services similar to those required for Project.

1.5 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.
- B. Digital Video Recordings: Provide high-resolution, digital video disc in format acceptable to Architect.

2.2 WEB-BASED PHOTOGRAPHIC DOCUMENTATION

- A. Project Camera: Provide fixed exterior camera installation, mounted to provide unobstructed view of construction site from location approved by Architect.
 1. Provide **<Insert number>** fixed-location camera(s), with the following characteristics:

- a. **[Static view] [Remotely controllable view with mouse-click user navigation for horizontal pan, vertical tile, and optical zoom of [500] <Insert number> percent minimum].**
 - b. Capable of producing minimum 3.0 megapixel pictures.
 - c. Provide power supply, active high-speed data connection to service provider's network, and static public IP address for each camera.
- B. Wireless Hand-Held Camera: Provide portable camera system capable of producing images complying with requirements in this Section, with wireless transmission to service provider's network enabling a live image stream viewable by multiple parties.
1. Provide battery charger, spare battery pack, base station hub, and base station connections in a number and distribution adequate to enable wireless camera operation throughout Project site.
 2. Provide power supply, active high-speed data connection to service provider's network, and static public IP address at base station hub. Provide power supply, conduit, and data wiring between base station hub and base station connections.
- C. Web-Based Image Access: Password-protected access for Project team administered by Contractor, providing current image access and archival image access by date and time, with images downloadable to viewer's device.
1. Provide public viewer open access to most recent project camera image.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
1. Date and Time: Include date and time in file name for each image.
 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect[**and Construction Manager**].
- D. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by [**Architect**] [**Construction Manager**].
1. Flag [**excavation areas**] [**construction limits**] before taking construction photographs.
 2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.

3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- E. Periodic Construction Photographs: Take 20 photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. **[Architect] [Construction Manager]**-Directed Construction Photographs: From time to time, **[Architect] [Construction Manager]** will instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.
- G. Time-Lapse Sequence Construction Photographs: Take 20 photographs as indicated, to show status of construction and progress since last photographs were taken.
1. Frequency: Take photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment.
 2. Vantage Points: Following suggestions by **[Architect] [Construction Manager]** and Contractor, photographer to select vantage points. During each of the following construction phases, take not less than two of the required shots from same vantage point each time to create a time-lapse sequence as follows:
 - a. Commencement of the Work, through completion of subgrade construction.
 - b. Above-grade structural framing.
 - c. Exterior building enclosure.
 - d. Interior Work, through date of Substantial Completion.
- H. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial Completion for submission as project record documents. **[Architect] [Construction Manager]** will inform photographer of desired vantage points.
1. Do not include date stamp.
- I. Additional Photographs: Architect **[or Construction Manager]** may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.
1. Three days' notice will be given, where feasible.
 2. In emergency situations, take additional photographs within 24 hours of request.
 3. Circumstances that could require additional photographs include, but are not limited to, the following:
 - a. Special events planned at Project site.
 - b. Immediate follow-up when on-site events result in construction damage or losses.
 - c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
 - d. Substantial Completion of a major phase or component of the Work.
 - e. Extra record photographs at time of final acceptance.
 - f. Owner's request for special publicity photographs.

3.2 CONSTRUCTION VIDEO RECORDINGS

- A. Video Recording Photographer: Engage a qualified videographer to record construction video recordings.
- B. Recording: Mount camera on tripod before starting recording unless otherwise necessary to show area of construction. Display continuous running time and date. At start of each video recording, record weather conditions from local newspaper or television and the actual temperature reading at Project site.
- C. Narration: Describe scenes on video recording by dubbing audio narration off-site after video recording is recorded. Include description of items being viewed, recent events, and planned activities. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.
1. Confirm date and time at beginning and end of recording.
 2. Begin each video recording with name of Project, Contractor's name, videographer's name, and Project location.
- D. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from video recording opposite the corresponding narration segment.
- E. Preconstruction Video Recording: Before starting construction, record video recording of Project site and surrounding properties from different vantage points, as directed by **[Architect]** **[Construction Manager]**.
1. Flag **[excavation areas]** **[construction limits]** before recording construction video recordings.
 2. Show existing conditions adjacent to Project site before starting the Work.
 3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of construction.
 4. Show protection efforts by Contractor.
- F. Periodic Construction Video Recordings: Record video recording **[monthly, coinciding]** **[weekly, with timing each month adjusted to coincide]** **<Insert time interval>** with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last video recordings were recorded. Minimum recording time shall be **[30]** **<Insert number>** minutes(s).
- G. Time-Lapse Sequence Construction Video Recordings: Record video recording to show status of construction and progress.
1. Frequency: During each of the following construction phases, set up video recorder to automatically record one frame of video recording every **[five]** **<Insert time>** minutes, from same vantage point each time, to create a time-lapse sequence of **[30 minutes]** **<Insert time>** in length as follows:
 - a. Commencement of the Work, through completion of subgrade construction.
 - b. Above-grade structural framing.
 - c. Exterior building enclosure.
 2. Timer: Provide timer to automatically start and stop video recorder so recording occurs only during daylight construction work hours.

3. Vantage Points: Following suggestions by [**Architect**] [**Construction Manager**] and Contractor, photographer shall select vantage points.

3.3 WEB-BASED CONSTRUCTION PHOTOGRAPHIC DOCUMENTATION

- A. Live Streaming Construction Site Images: Provide Web-accessible image of current site image from [**fixed**] [**viewer-controlled**] location camera(s), updated at [**15**] <Insert number> minute intervals during daytime operation.
- B. Time-Lapse Sequence Construction Site Recordings: Provide video recording from a fixed-location camera to show status of construction and progress.
 1. Frequency: Record one frame of video recording every [**15**] <Insert number> minutes, from same vantage point each time, to create a time-lapse sequence of construction activities.
 2. Timer: Provide timer to automatically start and stop video recorder so recording occurs only during daylight construction work hours.
- C. Maintain cameras and Web-based access in good working order according to Web-based construction photographic documentation service provider's written instructions until final completion. Provide for service of cameras and related networking devices and software.

END OF SECTION 01 3233

NORTHWESTERN UNIVERSITY
PROJECT NAME _____
JOB # _____

FOR: _____
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