



National Park Service
U.S. Department of the Interior

Harpers Ferry Center

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NATIONAL PARK SERVICE STANDARD SPECIFICATIONS FOR DESIGN-BUILD AUDIOVISUAL PRESENTATION SYSTEMS DECEMBER 2013



National Park Service STANDARD SPECIFICATIONS FOR DESIGN- BUILD AUDIOVISUAL PRESENTATION SYSTEMS

Harpers Ferry Center
Harpers Ferry, West Virginia

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Section 1. DEFINITIONS

Amphitheater: An outdoor presentation space, typically used for live presentations with video and audio playback and voice reinforcement capability. All require assistive listening capability.

Assistive Listening Systems: Assistive listening uses various devices that amplify volume for persons with mild to profound hearing loss who may or may not use a hearing aid. Assistive listening devices (ALDS) include headsets, ear buds, and hearing aids. The amplified sound is transmitted via radio frequency, infrared, or induction loops to the user's headset, ear buds, or hearing aid.

Audio Description: Audio description describes the visual content of video or multimedia programs. It provides individuals who are visually impaired with information that further describes the visual content not provided in the primary audio track. Audio description is a separate audio track synchronized with the program's primary audio track.

Auditorium: A room (sometimes called a theater,) primarily dedicated to playback of movies, typically from a digital media player via large screen projection, with the capability to play other programs from optical discs and computers, as well as live presentations. These rooms often have surround sound audio playback. All have assistive listening and audio description playback capability.

Contracting Officer's Representative: A Contracting Officer's Representative (COR) is the individual, including a contracting officer's technical representative (COTR), designated and authorized in writing by the contracting officer to perform specific technical or administrative functions.

Equipment: Electronic devices used to play video, audio, or computer programs. It also includes devices and systems that control multiple programs, or that interface with other elements such as programmed lighting and electromechanical devices.

Government-Furnished Property: Property in the possession of, or directly acquired by, the Government and subsequently furnished to the contractor for performance of a contract.

Integrator: Provides audiovisual system services either directly or through established subcontractors to meet the requirements of this contract.

Installer: Business specializing in the fabrication and installation of commercial audiovisual systems.

Maintenance Manual: A detailed document or set of documents that contains all pertinent information about each piece of equipment's operation and describes all required service and maintenance.

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Multi-Purpose Room: A room or facility that typically has a flat floor and moveable seating, used for a variety of purposes such as video presentations, meetings, lectures, and ceremonies. Frequently used for playback of movies, as well as simple playback of optical discs and/or computer presentations from wireless and/or hard wired inputs. All have assistive listening playback capability, and may have audio description capability.

Operations Manual: A detailed document or set of documents aimed at providing information necessary for the normal operation of all equipment and systems. The manual includes a troubleshooting guide.

Production Documents: The phase of work where technical drawings and specifications are completed for moving the project into production.

Production Support: Creative and technical support during fabrication of the project to ensure adherence to the project's design intent.

Submittal: All samples, documents (i.e., drawings, schedules, facsimiles), electronic files, and other materials that together represent the level of development of work at a given time.

Theater: A room (sometimes called an auditorium,) primarily dedicated to playback of movies, typically from a digital media player via large screen projection, with the capability to play other programs from optical discs and computers, as well as live presentations. These rooms often have surround sound audio playback. All have assistive listening and audio description playback capability.

Universal Design: The design of products and environments to be usable by all people, to the greatest extent possible, without assistance, adaptation or specialized design.

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Section 2. PROJECT MANAGEMENT

2.1 Introduction

The purpose of the following Project Management tasks are to ensure that scheduling, coordination, overseeing, and managing is effectively accomplished for all work produced and installed under this contract.

2.2 General Requirements

The contractor shall assign a Project Manager to oversee the contract and shall also assign a Project Manager for each task order written under this contract.

2.3 Specific Requirements for Contract Project Management

The Project Manager shall be the primary point of contact between the National Park Service (NPS) Contracting Officer for the contract. The Project Manager shall perform the following work:

- A. Notify the Contracting Officer of any changes to the contractor's business operations that affect work under this contract, including but not limited to:
 - 1. Changes to contractor's address, phone and other contact information.
 - 2. Proposed changes to key personnel.
 - 3. Workload or capacity issues affecting the ability of the contractor to accept additional work.
- B. Communicate with the Contracting Officer regarding major or broad issues affecting task orders written under this contract, including but not limited to:
 - 1. Clarification of work processes that are acceptable or unacceptable to the government under this contract.
 - 2. Informing the Contracting Officer of misunderstandings, inconsistencies, or conflicting instructions encountered when working with different parks and different task order CORs.
- C. Prepare and submit an electronic status report every six months to the COR with a copy to the Contracting Officer which lists all active task orders by number. It shall include, at a minimum, the name of the park and/or client, type of work being performed and results achieved during the reporting period. It shall also include an indication of any current problems that may impede performance, the proposed corrective action, and the completion date.

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2.4 Specific Requirements for Task Order Project Management

The Project Manager shall be the primary point of contact between the contractor and COR for individual task orders and shall perform the following work:

- A. The Project Manager shall have full authority to act for the contractor on all matters relating to a specific task order. The Project Manager shall maintain contact with the COR as necessary, and shall:
 - 1. Be available to take or respond to telephone calls or electronic mail messages during normal hours of operation (8:30 am - 5:00 pm local time). Local time is considered the time wherever the Contractor is performing the work for the National Park Service.
 - 2. Establish office procedures to ensure that messages are relayed to the Project Manager when out of the office or because of time zone differences.
 - 3. Respond to emergency messages from the COR on the same day they are received. All non-urgent messages from the COR shall be responded to in no less than two days.
- B. Provide quality control to ensure that all elements of project work meet the requirements of the contract specifications as follows:
 - 1. Provide inspections of ongoing work.
 - 2. Inform the COR of any issues that could affect work quality or schedule.
 - 3. Ensure that all work not acceptable or compliant with the specifications is corrected prior to review by the COR.
- C. Track work progress to ensure that the project is completed according to the schedule. Coordinate and confirm the dates for all submittals, meetings, and installation with the COR.
- D. Meet with the Contracting Officer and COR in accordance with Section 3, Audiovisual Planning and Design Process, and as specified in individual task orders.
- E. Receive, inspect, and inventory all government-furnished property (GFP) and ensure that this material is forwarded to the appropriate unit or person within the contractor's organization for use in the project. The Project Manager shall notify the COR within seven days after receipt if GFP is missing, incorrect, inadequate, or damaged for their intended purpose. The Project Manager shall notify the COR within two working days after receipt if GFP is lost or damaged while in the contractor's possession.

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- F. The Project Manager shall coordinate and ensure that all specifications for submittals are in accordance with Section 4, Submittals and Reviews, and as specified in individual task orders.
- G. Inspect completed work prior to shipment or final inspection by the COR to ensure that the work meets the standards of quality specified in this contract. Ensure that all the elements of the project are complete and ready for the final inspection. The Project Manager shall notify the COR if any elements of the work will not be ready for final inspection as scheduled.
- H. Coordinate installation of the audiovisual system with both the COR and with the Project Manager at the job site. Additional contacts may include: Project Architect, Electrical Contractor, Building Contractor, and Film Production Team.
- I. Ensure that all work is delivered and installed as scheduled. In the event that the COR reports problems during or after shipment, delivery, and/or installation, the Project Manager shall:
 - 1. Determine the nature of the reported problem, damage, or error and shall provide a written proposal for resolution to the COR for review and approval.
 - 2. Ensure that approved corrections or repairs are made in a satisfactory manner and within the time scheduled by the COR.
- J. Provide onsite support and training for the initial use of the system(s) at the conclusion of the installation as specified in individual task orders.

Section 3. AUDIOVISUAL PLANNING AND DESIGN

3.1 Introduction

Planning requirements for this contract includes, but is not limited to, planning for any one of the following or combination thereof: audio and video playback equipment, recording equipment, processors, switchers, distribution amplifiers, video projectors, projection screens, video displays, audio mixers, audio amplifiers, microphones, loudspeakers, equipment controllers, control panels, touch screens, electronic cables, message displays, event timers, and assistive listening systems.

3.2 General Requirements

The contractor shall be responsible for all travel necessary to address the project needs. The contractor shall meet with the COR or their designated representative, be oriented to the site, review available documents and drawings, and meet with park staff.

A. Travel to Site

1. The contractor shall coordinate all travel with the COR or designated representative.
2. The contractor's workdays while on travel shall be eight-hour days.
3. The contractor shall bring all equipment they require while on travel and at the job site.
4. The contractor shall provide for their own transportation while on travel.

B. Meetings and Presentations

1. The contractor shall develop an agenda in coordination with the COR.
2. The contractor shall discuss with the COR expectations for work that shall be presented.
3. The contractor shall identify key participants for meetings.
4. The contractor shall facilitate meetings.
5. The contractor shall document discussions and outcomes and shall submit to the COR for the contract records.
6. The contractor shall determine along with COR whether documents shall be submitted in advance or at the presentation meeting.

Section 4. SUBMITTALS AND REVIEWS

4.1 Introduction

Submittals and reviews are the key communication points between the contractor and the COR that document a project's overall progress and any remedial actions necessary to produce complete and acceptable deliverables.

4.2 General Requirements

- A. The contractor shall coordinate all submittals and review them for legibility, accuracy, completeness, and compliance with contract requirements.
- B. The contractor shall cross-reference all details that occur multiple times in a single or in multiple documents for consistency and accuracy.
- C. The contractor shall ensure that all submittals are delivered to the COR as scheduled for review and approval. Submittals shall be accompanied by a transmittal form describing all contents.
- D. The contractor shall provide each document electronically, unless otherwise specified in individual task orders.
- E. The contractor shall receive all review comments from the COR and take appropriate action as stated below:
 - 1. Approved Submittals – The contractor shall ensure that all changes, revisions, additions, or omissions required by review comments are addressed and incorporated into future submittals.
 - 2. Rejected Submittals – When submittals are rejected, the COR will notify the contractor, in writing, identifying the reasons for rejection. The contractor shall ensure that the submittal is completed and/or revised as required and resubmitted within the time scheduled by the COR. Reasons for rejections include:
 - a. Incomplete Submittals – Approval of the submittal is delayed because required elements are missing. The contractor shall submit all missing elements. When all elements are received and accepted, the COR will approve the submittal.
 - b. Unacceptable Submittals – The submittal is rejected due to poor quality of work or work that does not otherwise meet the established project goals. The contractor shall submit new material.

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4.3 Specific Requirements for Individual Systems

- A. The contractor shall provide systems drawings, including block and line diagrams, showing all components of the existing as well as the new equipment to be installed. Provide building drawings representing the basic facility layout as necessary to accomplish the new work. These shall be simple plans and elevations showing barriers, doorways, windows, equipment locations, etc. Existing drawings are not typically available.
- B. The contractor shall provide a proposed schedule of work for the entire project. The schedule shall include significant landmarks.
 - 1. Each design package shall be submitted to the COR for review and approval prior to moving forward into the next phase.
 - 2. All drawings shall be produced and submitted to the COR in Autodesk AutoCAD using a version no earlier than the last version prior to the most current available and also provided as a PDF. Drawings shall be in black and white, without any reliance on color coding.
 - 3. Drawings and specifications are required for each project. All drawings shall be produced in Auto Desk AutoCAD using a version no earlier than the last version prior to the most current available.
 - 4. Within 30 days following award of a contract, the contractor shall submit to the COR:
 - a. Shop drawings:
 - 1) Floor plan showing any demolition work necessary for new system installation. Show both equipment to be removed and any building structure demolition. Clearly identify who is responsible – the audiovisual contractor, park, or other.
 - 2) Floor plan showing all conduit, power outlets, data and/or phone outlets and any building modifications to be used in the new system. Clearly identify if they are existing or new and who is responsible for them.
 - 3) Floor plan of final layout showing locations of all audiovisual components.
 - 4) Single-line schematic drawings showing signal flow through the system; show different signal types, along with level and impedance variations; indicate actual equipment installed both by a generic description (e.g.: "16-channel audio mixer") and the manufacturer and model (e.g.: "Sonic Arts MX-1601"); indicate input/output terminals using the same terminology and labeling scheme as that appearing on the actual equipment; indicate cable numbers using the same numbering scheme as that used to physically mark the cables. Pictorial system drawings are not acceptable;

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- 5) Wire run lists showing all cables identified by the actual designations affixed to each cable;
- 6) Pin-out schedules or diagrams for all connectors;
- 5) Proposed rack layout elevations;
- 6) Drawings for all custom-fabricated equipment clearly indicating layout, critical dimensions, finish, and textual legends;
- 7) Schematic drawings of all custom circuitry; and
- 8) Installation details for all items to be attached to or integrated into other work.

Drawings shall be reviewed by the COR prior to fabrication or installation.

b. Wiring Schedule:

At a minimum, the contractor shall indicate cable number, type of cable, source name with connector type, and destination name with connector type for all interconnecting cables.

Technical data shall be required for all cables that are not listed as pre-accepted in this specification, or are not pre-accepted for the intended use. Under no circumstances shall the contractor begin installation of any of these cables until approval is granted by the COR.

5. If touch panel controls are part of the work, no less than two weeks prior to commencement of onsite work, the contractor shall submit to the COR files that shall allow the simulation of touch panel functionality on the CORs (PC) computer. After review by the COR, the contractor shall make any requested changes to page layout, nomenclature and functionality, and confirm all changes and resubmit.

- C. The contractor shall provide progress reports containing at a minimum, general information regarding project activity, any failures in the work and proposed solutions for those failures, project landmarks achieved, project landmarks delayed, schedule adherence, and requirements for government provided materials and media.

Section 5. AUDIOVISUAL EQUIPMENT

5.1 Introduction

Equipment selections shall be based on the long-term requirements of the presentation program. The systems shall be easy to operate with minimal training and shall be designed for long life and minimal maintenance.

Equipment and software components shall be carefully coordinated to ensure that all design goals are met.

5.2 General Requirements

- A. The contractor shall provide equipment and systems designed with ease of use in mind, and which requires minimal maintenance.
- B. The contractor shall work with the appropriate project team members to insure that the electrical system in place will accommodate all specified audiovisual and control equipment. This coordination shall begin at the earliest possible opportunity and continue through the duration of the project.
- C. The contractor shall inform the COR of all proposed systems that will require network or Internet connectivity. Plans for such systems shall require additional review and approval by the NPS to ensure compliance with all network security requirements and Information Technology policies in effect at the time of submittal.

5.3 Specific Requirements for Design Development Phase

- A. The contractor shall provide equipment and systems designed with ease of use in mind, and which requires minimal maintenance.
 - 1. In coordination with the overall audiovisual strategy, the contractor shall identify the types of equipment that are proposed for use with each audiovisual system. Sizes and other broad characteristics shall be identified, but specific brands and models are not required at this phase of development..
 - 2. The contractor shall specify locations for all equipment, for signal and control wiring or conduit, and for power circuits/outlets that shall be used by the audiovisual system.
 - 3. The contractor shall develop start-up and shut-down procedures for the audiovisual system. This shall be conducted from a single control panel, or by use of a preprogrammed timer with a manual override function and battery backup. Start-up and shut-down shall be designed for convenient operation. Controls shall have limited access.

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B. 100% Design Package

The contractor shall provide detailed specifications for all audiovisual equipment for the system as follows:

1. Specify equipment types and brands that are appropriate for the application, as well as for the environmental conditions in which the equipment shall be installed. Industrial or commercial grade equipment shall be specified. Use of consumer or prosumer grade equipment, while sometimes unavoidable, is discouraged.
2. Specify all ancillary equipment required for a fully operational system, such as surge protectors, uninterruptible power supplies, push buttons, relays, and indicators.
3. All equipment shall be identified by brand name and model number.
4. For each product specified, provide the manufacturer's technical information sheets, the manufacturer and/or supplier's address, telephone number, and information regarding accessories and additional equipment.
5. Provide detailed wiring diagrams for the equipment in each audiovisual system. Wiring diagrams shall show the precise points of connection on each piece of equipment; wiring between systems and controllers, and the interface between audiovisual systems and lighting or other electromechanical devices.
6. Special order items and items that are not normally available from a manufacturer's stock shall be clearly identified as such and shall include lead time for procuring.
7. Architectural specifications including, but not limited to, the number and placement of electrical circuits, voltage and load requirements for each circuit, and the number, type and placement for high and low voltage conduit and device boxes and enclosures.
8. Prices for all equipment shall be included within the Contractor's 100% Design Package.
9. When previously specified equipment has been discontinued or is unavailable through normal means, the contractor shall specify replacement equipment by brand name and model number, and shall provide cut sheets that show all product specifications.

Section 6. ANCILLARY FABRICATION

6.1 Introduction

Work includes, the design, work plan, specifications, and installation as necessary for electric service upgrades, equipment wiring, acoustic treatment, ceilings, walls, partitions, performance stages, and seating. In addition, work required to optimize space for use in diverse media playback for small groups, video teleconferencing, and for general meetings shall require several acoustic and lighting target goals be met.

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Section 7. INSTALLATION

7.1 Introduction

As specified in the individual task orders, general specifications for the planning, installation, and maintenance of audiovisual systems and hardware at NPS and other government locations follow:

A. General Requirements:

1. The contractor shall provide all new equipment and installation materials.
2. Prior to ordering equipment and materials for the audiovisual system, the contractor shall provide the following to the COR as PDFs:
 - a. Shop drawings showing all equipment, cables, connectors, and devices used in the fabrication of the system. All equipment shall be labeled with manufacturer, model number and function. All cables and connection points shall be identified as to type and service. Cables shall be uniquely labeled as to their use and shall be assigned a numeric identifier. Drawings shall be readable when printed on 11" x 17" paper.
 - b. Manufacturer's specifications for all major components specified or proposed for use in the system.
3. The contractor shall guarantee all equipment and materials provided as well as installation practices for a period of one year from the date of acceptance by the COR.
4. The contractor shall be prepared to show by "Proof of Performance" test that the equipment being proposed for use in this project is equal to or better than that specified. This proof shall be provided by actual real time tests and not by printed sales literature.
5. Workers fully competent in the fabrication, installation, and implementation of professional audiovisual, video, sound reinforcement, and cinema playback systems shall perform the work specified.
6. The contractor shall take precautions to guard against electromagnetic and electrostatic hum, spurious oscillation, to provide for adequate ventilation and to install the equipment to provide maximum safety to any user or operator.
7. The contractor shall exercise care in wiring the systems to avoid damage to cables and equipment. All joints and connections shall be made with rosin core solder or with mechanical connectors approved by the COR.

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8. The contractor shall submit to the COR a letter of completion when the system is complete and in proper operating condition. Final tests shall be made in the presence of the COR, who shall be notified of the test date a minimum of one week prior to that date.
9. The contractor shall bring to the attention of the COR any aspects of the designs and specifications included which the contractor anticipates or foresees will cause any problems, setbacks, or other undesirable results in delivery, fabrication, installation, operation, or other aspects of the systems described.
10. Preceding final system training, the contractor shall provide a printed operations manual for use in operation and simple troubleshooting of the audiovisual systems specified in the task order. This manual shall be reviewed by the contractor for accuracy prior to and during the training session(s). The user manual shall include detailed drawings and photographs of system components showing critical control functions, control settings, and user connections. The manual layout as a minimum shall be:
 - a) Cover / Title
 - b) Contents
 - c) Contact data consisting of a page listing names, addresses, telephone and fax numbers, and any other relevant contact information;
 - d) Systems Overview description(s)
 - e) System Operation
 - 1) Daily System Procedures
 - 2) Show Start operation
 - 3) Showing Other Media
 - a) Blu-ray/DVD
 - b) Computer
 - c) Auxiliary sources
 - 4) System Adjustments
 - a) Audio
 - b) Video
 - f) Troubleshooting Guide
 - 1) Video
 - 2) Audio
 - 3) Controls

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- g) Equipment list, broken down by system; for each line item, show the quantity provided, the manufacturer's name, the full model number, a brief functional description (e.g.: "1x6 Video Distribution Amplifier"), and serial numbers;
 - h) Consumables list (e.g.: lamps, fuses, or batteries) required to keep the system operating over time, along with sources of supply;
 - i) a recommended maintenance schedule followed by preventive maintenance and user-maintenance procedures, along with details on how to obtain service; include copies of sections from the applicable manufacturer's product manual's maintenance sections, along with any other maintenance procedures recommended by the contractor; clearly highlight any maintenance procedures required by the manufacturer to keep the manufacturer's warranty in force; include a troubleshooting guide detailing the more common malfunctions;
 - j) Shop drawings (11"x17")
11. Using the manual specified, the contractor shall provide no less than two hours of onsite training and instruction to personnel designated by the COR. The contractor shall provide two copies of the marked up draft operations manuals to the COR and park prior to leaving the site. The contractor shall electronically submit the as-built revision(s) of the draft operations manual to the COR for review and approval before final distribution in the close-out documentation.

B. Functions and Objectives

- 1. The contractor shall remove from service all existing audiovisual equipment, hardware, materials and supplies not intended for reuse in the new system and shall turn over all such apparatus and materials to the COR.
- 2. The contractor shall provide and install fully working audiovisual, audio, and video playback systems comprised of contractor provided and GFP as specified in the individual task order.
- 3. The contractor shall provide the audiovisual system free of artifacts such as hum, noise, or distortion of any level above that specified by the manufacturers of the equipment specified and/or provided.
- 4. Acceptance testing shall verify function and purpose of new and existing equipment.

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C. Equipment

1. Government-Furnished Property shall be specified in individual task order. Such equipment will be furnished to the contractor for integration into the audiovisual system. The contractor, at no additional cost to the government, shall replace equipment damaged while in the contractor's possession. The contractor will not be held responsible for performance or warranty of existing equipment or conditions unless the degradation of performance is caused by contractor installed equipment or action.
2. Video and playback requirements shall be as specified in individual task orders.
3. Audio requirements shall be as specified in individual task orders.
4. Control system requirements shall be as specified in individual task orders.
5. Equipment Racks shall be as specified in individual task orders.
6. Hardware, Cable, and Connections
 - a. All support hardware shall be of the highest grade of reliability and rated equal to at least four times the load weight of the equipment being supported.
 - b. Cabling and Connectors: Care shall be taken to bundle and secure all cables that interconnect electronic devices integral to the system with destinations outside the equipment rack. Strain relief, harnesses and segregation of cables according to signal levels must be maintained throughout. Crimp type connections shall be accomplished with ratchet type crimping tools as recommended by the crimp connection device manufacturer. Use of adapters is to be avoided where practical and cabling intermediate connections kept to a minimum. Unused conductors, shields, or drain wires shall be dressed under heat shrink tubing not cut.
7. Cables as manufactured by Belden, West Penn, Alpha, Liberty, or other equivalent manufacturers of premium grade low voltage cables with appropriate UL listings for the application shall be utilized.
8. Connectors as manufactured by Switchcraft, ITT Cannon, Neutrik, Kings, Amphenol, Trompeter, Canare or other equivalent manufacturers of premium grade audio, video, RF, and signal connectors shall be utilized. Metalized plastic shell connectors shall not be used in these systems under any circumstances.

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9. Switches and relays as manufactured by EAO, Switchcraft, Grayhill, Microswitch, Potter & Brumfield, Radio Design Labs or other equivalent manufacturers of premium grade switch and relay products shall be utilized.
10. The contractor shall provide to the COR one set of any specialized tools necessary for dismantling or servicing switches. Lighted switches shall be illuminated by LEDs.

D. Execution

1. As specified in the individual task order, the contractor shall calculate anticipated heat loads for equipment used in the audiovisual system and shall provide a detailed report to the COR. The contractor shall provide and install convection vents and/or cooling fans if required to prevent the equipment's environment temperature from rising no more than 30°F over the ambient temperature of the adjacent space. Fans, if used, shall be selected to provide the maximum amount of airflow with the minimum amount of noise contribution.
2. Persons trained and experienced in audiovisual, sound and video installation technology shall perform all assembly, fabrication, and installation work. All installation practices shall be adhered to as described in pertinent chapters of the following publications:
 - a. Audio Systems Design and Installation; Author - Philip Giddings, Focal Press
 - b. Sound System Engineering – Second Edition; Authors Don and Carolyn Davis, Howard W. Sams & Co.
3. In addition to above references, all requirements of the latest published edition, including but not limited to the following publications shall apply unless otherwise noted. In case of conflict between cited or referenced standards, the more stringent example or standard shall apply to the situation in question.
 - a. National Electrical Code (NEC).
 - b. Federal Communications Commission (FCC).
 - c. Society of Motion Picture and Television Engineers (S.M.P.T.E.).
 - d. American Society for Testing Materials (A.S.T.M.).
 - e. Electronic Industries Association (E.I.A.).

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- f. Handbook for Riggers 1977 Revised Edition, W.G. Newberry; Calgary, Alberta Canada.
- g. Basic Principles for Suspended Loudspeaker Systems, Technical Notes Volume 1, Number 19, JBL Professional Division.

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Section 8. ACCESSIBILITY

8.1 Introduction

Park visitors who have physical, sensory, or cognitive disabilities have legally established civil rights to receive the same information and context that NPS interpretive media provide fellow citizens.

All work performed under this contract shall be in accordance with the Programmatic Accessibility Guidelines for NPS Interpretive Media, version 2.1, February 2012, or latest version available at www.nps.gov/hfc/accessibility. The Guidelines combine laws, policies, and best practices to offer design and presentation solutions that are acceptable in most situations. Contractors are advised to understand that physical access shall be required for employees to operate equipment.

In addition to Universal Design principles, specific design requirements for accessibility are mandated by statute. Laws that apply to work performed under this contract include the Americans with Disabilities Act, the Architectural Barriers Act, for Federal Government buildings and facilities, and Section 508 of the Rehabilitation Act, for electronic and information technology purchased by the Federal Government. Detailed information on these statutes may be found at www.access-board.gov.

Section 9. MEDIA PRODUCTION

9.1 Introduction

In some instances the contractor may be required to provide limited audiovisual production services and inter-format media transfers in order to fulfill the requirements of a task order. These services will typically be limited to captioning, audio describing, encoding, transferring, replicating and/or duplicating Government-Furnished Property (GFP) audiovisual programs. Production requirements and specifications shall be listed in individual task orders.

9.2 Captioning

The Department of the Interior (DOI) policy states that all training and informational video productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, shall be captioned. DOI policy also requires that the captions shall be displayed at all times. Captions shall be displayed on-screen; the display format (size, font, location) shall be specified in individual task orders. All programs shall be captioned under this contract and shall be GFP, unless otherwise specified in individual task orders. NPS standard shall be to use Subtitles for the Deaf and Hard of Hearing (SDHH) which shall include indicators for music and sound effects. The terms "captions" and "subtitles" are synonymous. The programs shall typically be delivered to the contractor as High Definition video programs on a professional videotape formats such as HDCAM, HDCAM-SR, DVCPRO-HD or as Quicktime or Apple ProRes files. The government shall furnish electronic Microsoft Word copies of all scripts to be captioned, unless otherwise specified in individual task orders.

A. Caption Specifications

1. The contractor shall provide open captions, unless otherwise specified in the task order.
2. The government shall furnish jpeg files as samples for caption placement and font. Captions are typically one line, with no fixed maximum line length. Lines shall be broken at sentences or prepositional phrases where practical, with each line typically 50 characters or less, unless otherwise specified in the task order.
3. Captions shall use upper and lower case characters, unless otherwise specified in individual task orders.
4. Captions shall be pop-on/pop-off versus roll-up.
5. Captions shall distinguish between narration and spoken dialogue, by appearing in all caps followed by a colon, (NARRATOR:, RANGER MARY:) and shall indicate the presence of music and sound effects (SDHH).

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6. Captions shall be displayed at the bottom of the viewing area of the screen. When images or on-screen titles interfere with caption readability, the caption placement may temporarily switch from the bottom to the top of the screen.
- B. Caption Review, Approval, and Deliverables
1. The contractor shall submit all captions for review and approval by the COR. Caption review and approval shall be seven calendar days, unless otherwise specified in individual task orders.
 2. The contractor shall provide an open-captioned optical disc or electronic file with visual time code and an electronic Microsoft Word file of the proposed caption script for review and approval by the COR. The contractor shall provide a second set if specified in individual task orders. The contractor shall not proceed with the final deliverables until the check disc or file and caption script are approved by the COR, which may require the submission of additional revised check discs and scripts before final approval.
 3. Upon approval of the captions, the contractor shall deliver the final captioned programs as specified in individual task orders.
 4. The contractor shall deliver an electronic Microsoft Word file of the final approved caption script in the close out documents.

9.3 Audio Description

NPS policy requires that all training and informational video productions which support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described. Audio description helps to ensure that people who are blind or have low vision enjoy equal access to film and video programs by providing additional descriptive narration of key visual elements. Audio description uses the natural pauses in the existing soundtrack to insert descriptions of essential visual elements such as actions, settings, appearance of characters, body language, costumes, lighting, on-screen text, etc., when such information is not offered in the existing soundtrack. This prerecorded narration is delivered on a separate audio track that is synchronized with the program's primary audio track.

In theater settings, audio description is typically played from a separate audio track or device and is not heard over the main loudspeaker(s). Visitors requesting audio description typically receive a headset and receiver. The audio description track is then transmitted to the headset via a radio frequency or infrared signal. Only those visitors with headsets hear the audio description track. In exhibit settings, where video programs are often activated via pushbutton or motion sensor, the audio description soundtrack may also be activated via pushbutton or motion sensor. The playback method shall be specified in individual task orders.

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All programs to be audio described under this contract will be GFP, unless otherwise specified in the task order. The programs will typically be delivered to the contractor on DVD or as an MPEG or Quicktime file with visual time code. The government will also furnish electronic Microsoft Word copies of existing scripts, unless otherwise specified in the task order. In some instances, the government may require the contractor to record the final approved audio description track onto the unused audio tracks of a GFP prerecorded tape. These programs will typically be delivered to the Contractor on a professional videotape format such as HDCAM, HDCAM-SR, DVCPRO-HD, or Digital Betacam and will contain prerecorded video and stereo audio. The contractor shall, in these instances, record the approved audio description onto an open channel of the prerecorded master.

A. Audio Description Specifications

1. All audio description shall be written, narrated, and recorded by trained, professional audio description providers.
2. All audio description shall conform to accepted industry standards and practices such as those provided by Audio Description International (<http://adinternational.org>) and the Audio Description Coalition (<http://www.audiodescriptioncoalition.org>).
3. All digital audio shall be created at a sampling rate of 48 KHz, unless otherwise specified in the task order.

B. Audio Description Review, Approval, and Deliverables

1. The contractor shall submit all audio description scripts electronically in Microsoft Word for review and approval by the COR.
2. Prior to recording the audio description soundtrack, the contractor shall provide an electronic Microsoft Word file of the proposed script to the COR for review and approval. Each block of text in the audio description script shall reference a time code number from the media, along with the preceding line from the program's original narration track. The contractor shall not proceed with the final deliverables until the audio description script is approved by the COR, which may require additional script submittals before final approval. Each resubmission of the script shall include a clean revised script without any comments.
3. Upon approval of the audio description script, the contractor shall record the audio description soundtrack in a professional studio using a professional audio description narrator. The contractor shall then provide a CD check disc or MP3 file of the edited audio description track for review and approval by the COR. Upon final approval by the COR, the contractor shall transfer the final edited track to a tape or file format to be specified in the task order.

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4. All master tapes shall have continuous non-drop frame SMPTE time code.
5. The contractor shall deliver a backup copy of the final approved audio description soundtrack on a CD as an .wav and MP-3 digital audio file. The disc shall be labeled in accordance with the specifications provided at the end of this section. The contractor shall also deliver an electronic Microsoft Word file of the final approved audio description script. These shall be submitted with the close-out documentation.

9.4 Media Duplication, Replication, Encoding, and Transfer Services

In some instances the contractor may be required to duplicate, replicate, encode and/or transfer GFP audiovisual programs. This shall occur in small quantities as needed to support an audiovisual systems installation. The government will typically furnish programs on a professional videotape format such as HDCAM, HDCAM-SR, DVCPRO-HD Digital Betacam, or Betacam SP. The contractor shall, in some instances, caption and/or audio describe these masters as described in Items 9.2, Captioning, and 9.3, Audio Description, and then make backup copies in a specified tape format or as a digital file. In some instances the contractor may be required to provide MPEG encoding services and/or transfer programs to disc-based servers or solid-state media players in order to complete an audiovisual systems installation. Production requirements and technical specifications will be listed in each task order.

- A) Final delivered show quality shall not be visibly degraded from the original.
- B) Digital encodings shall be in the same display resolution as the media provided.
- C) Digital encodings shall include two seconds of black at the head and at the tail of the programs.
- D) An encoding specification report for each audio and/or video show shall be provided to the COR in .txt format and at a minimum shall include the following:
 1. Park acronym and show name (e.g. – REDW “Land of the Giants”)
 2. File size (e.g.- 688 MB)
 3. Encoded by and date (e.g. - XYZStudios 10/1/09)
 4. Container (e.g.-MPEG-4,Transport Stream, 1 vid, 1 aud, bitrate 21452 kb/s VBR)
 5. Video dimensions and frame rate (e.g. - 1920 x 1080 x 29.97p)
 6. Audio data (e.g. – MP2, 48 kHz, 384 kb/s, Stereo)

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9.5 Master Tape Requirements

All master tapes produced under this contract shall conform to the following specifications:

<u>Event</u>	<u>Time Code Start</u>	<u>Time Code End</u>
Tape Start	00:58:00:00	
Black/Silence	00:58:00:00	00:58:30:00
SMPTE Color Bars/Tone	00:58:30:00	00:59:30:00
Slate	00:59:30:00	00:59:35:00
Black/Silence	00:59:35:00	01:00:00:00
Program	01:00:00:00	01:XX:XX:XX
Black/Silence (30 seconds)		
SMPTE Color Bars (5 seconds)		
Black/Silence (30 to 60 seconds)		

9.6 Labeling Requirements for Master Tapes, Discs, and Slates

- A. All tapes, discs, and slates produced under this contract shall be labeled as follows:

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TV-XXXX (Note: this is a tape number that will be government-furnished with each task order)

“Title of Program”

XX:XX (total running time of the program)

Audio Configuration (mono, stereo, etc.)

Captioning and/or Audio Description Information (e.g. “Closed Captioned on top two lines,” “Open Captioned,” “SDHH,” “Audio Description on Channel 4”)

Production Company

Mastering Date

- B. Memory cards shall be labeled at a minimum with the four letter park designator, number identifier of the show, date, and venue where shown. Labels shall be adhered to the top facing of the card.
- C. Digital files shall follow the naming convention of the memory cards, ex. “XXXX0000.xxx”.
- D. Digital files created for a special purpose shall have that purpose clearly identified.
- E. When the show is presented in a language other than English the two-letter country code shall be added. Country codes shall be in accordance with ISO 3166.
- F. Naming example: Park is Salinas Pueblo Missions, Show is “Breath of Life”, Language is Spanish, file name is “SAPU0859ES.mpg”. When an audio file is an Audio Description of the Spanish.

Section 10. CLOSEOUT PACKAGE

10.1 Introduction

At the conclusion of work, the contractor shall return all GFP and all other outstanding materials as specified in the individual task order. All material generated by the contractor in the process of completing a task order is the property of the government.

10.2 Specific Requirements for Closeout Package

Closeout Submittals - The contractor shall provide two hard copies and two electronic copies on optical disc(s) of the closeout submittals as specified below. All submittals shall be in the English language unless otherwise specified in the task order.

1. Final as-built shop drawings. Electronic versions of the drawings on an optical disc in Autodesk AutoCAD using a version no earlier than the last version prior to the most current available and also provided as an 11" x 17" or larger PDF. Showing all modifications to off-the-shelf equipment; final settings of set-up and alignment controls for electronic processors and power amplifiers; tap connections of 70V components; configuration settings of all mode switches, DIP switches, screwdriver adjustments, and programmable hardware supplied under the contract, if different from the factory default;
2. Final as-built operations manual consisting of binders sectioned by tabs and an electronic version containing:
 - a. updated manual provided at the training session revised as needed.
 - b. manufacturer's manuals for each unique piece of installed equipment or software;
 - c. operating instructions for custom-fabricated equipment; and
 - d. a manufacturer's warranty certificate for each unique piece of equipment; if warranties are required to be registered, supply proof of a completed warranty registration form for each piece of equipment registered in the name of the National Park Service.
3. Control system programming source files, compiled files, and documentation. All other digital signal processors source files including digital media player; source files, compiled files and documentation. The documentation shall be generated from the software's standard report and/or print out capabilities. Provide electronically on a CD-R.

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4. Photographs of installed system to include wide shots and close-ups of all equipment. The photographs shall be of a quantity and quality to document the installation and allow a service technician to remotely talk a park employee through initial trouble shooting. Provide on CD-R.
5. Provide two exact copies of all media player memory devices as installed. Provide on media type as specified by COR.
6. The final approved caption script(s) as an electronic Microsoft Word in electronic form and hard copy in the operations manual. The final captioned master(s) as specified in the task order.
7. The backup copy of the final approved audio description soundtrack(s) on a CD as an MP-3 digital audio file. And an electronic Microsoft Word file(s) of the final approved audio description script(s) in electronic form and hard copy in the operations manual.