

SECTION 00001

PROJECT DIRECTORY

**OWNER:**

**STATE OF MONTANA  
FISH, WILDLIFE & PARKS DEPARTMENT  
DESIGN AND CONSTRUCTION  
PO BOX 200107  
1522 NINTH AVENUE  
HELENA, MONTANA 59620-0107**

**CONTACT: JAMIE MONGOVEN**

[jmongoven@mt.gov](mailto:jmongoven@mt.gov)

**(406) 841-4011**

**ELECTRICAL ENGINEER:**

**FUSSELL ENGINEERING  
2435 Dixon  
MISSOULA, MONTANA 59801  
(406) 721-6996**

**CONTACT: MIKE FUSSELL**

[fussellengineering@me.com](mailto:fussellengineering@me.com)

**ARCHITECT:**

**ROCKING M DESIGN, P.C.  
101 EAST BROADWAY, SUITE 612  
MISSOULA, MT 59802  
(406) 541-8647**

**CONTACT: TERRE MEINERSHAGEN**

[terre@rockingmdesign.com](mailto:terre@rockingmdesign.com)

**FAX: (406) 541-8600**

**STRUCTURAL ENGINEERS**

**DCI ENGINEERS**

**1289 STONERIDGE DRIVE, SUITE 1A  
BOZEMAN, MT 59802  
(406) 556-8600**

**CONTACT:**

**Samanta Fox, PE/ Matthew Hubbard, PE**

**[sfox@dc-engineers.com](mailto:sfox@dc-engineers.com) / [mhubbard@dc-engineers.com](mailto:mhubbard@dc-engineers.com)**

SECTION 00010

TABLE OF CONTENTS

PROCUREMENT AND CONTRACTING REQUIREMENTS

Division 00 -- Procurement and Contracting Requirements

00001 - Project Directory

00010 - Table of Contents

    Invitation for Bids

    Instruction to Bidders

    Proposal

    Federal Debarment Form

    Standard Form of Agreement Between Contractor and Owner

    Performance Bond

    Labor and Material Payment Bond

    Consent of Surety to Final Payment

    Contractor's Affidavit

    General Conditions

    Federal Labor Clauses

    Wage Rates

SPECIFICATIONS

Division 01 -- General Requirements

01100 - Summary

01200 - Price and Payment Procedures

01230 - Alternates

01300 - Administrative Requirements

01400 - Quality Requirements

01500 - Temporary Facilities and Controls

01600 - Product Requirements

01700 - Execution Requirements

01732 - Construction Waste Management and Disposal

01780 - Closeout Submittals

01800 - Provisions for Resource Protection

## Divisions 02 – 16

- 05270 - Stainless Steel Railings 9 pages
- 16010 - Basic Electrical Requirements 4 pages
- 16028 - Codes and Standards 1 page
- 16030 - Test and Demonstration of the Complete Electrical system 1 page
- 16120 - Wires and Cables 4 pages
- 16135 - Electrical Boxes and fittings 3 pages
- 16142 - Electrical Connections for Equipment 4 pages
- 16143 - Wiring Devices 3 pages
- 16195 - Electrical Identification 5 pages
- 16470 - Panelboards and/or Load Centers 7 pages
- 16510 - Interior Cavern Lighting 4 pages
- 16535 - Emergency Lighting 3 pages
- 16900 - Catalog Sheets 1 page plus catalog sheets

## DRAWINGS

Electrical Distribution and Communication

- G0.0 Title Sheet
- G1.0 General Information
- G2.0 General Information
- G3.0 General Information
- E1.0 Cavern Entrance Area
- E1.1 Photos Vicinity Cavern Entrance
- E1.2 Photos Vicinity Cabinet 4
- E2.0 Cathedral Room
- E2.1 Photos Vicinity Beaver Slide
- E2.2 Photos Vicinity Cathedral Room
- E3.0 Pit Bottom
- E3.1 Photos Vicinity Pit Bottom
- E4.0 Halfway Room
- E5.0 Garden of the Gods
- E5.1 Photos Vicinity Garden of the Gods
- E6.0 Brown Waterfall Room
- E6.1 Photos Vicinity Brown Waterfall Room
- E7.0 Paradise Room
- E7.1 Photos Vicinity Paradise Room
- E8.0 Exit Tunnel - Inner Gate
- E9.0 Exit Tunnel - Outer Gate
- E9.1 Photos Vicinity Exit Tunnel
- E10.0 One-Line Diagrams
- E10.1 Panel Schedules

Lighting and Handrail Design and Details

R-1.1	Railings Enlarged Plans & Profiles
R-1.2	Railings Enlarged Plans & Profiles
R-1.3	Railings Enlarged Plans & Profiles
R-1.4	Railings Enlarged Plans & Profiles
R-1.5	Railings Enlarged Plans & Profiles
R-1.6	Railings Enlarged Plans & Profiles
R-1.7	Railings Enlarged Plans & Profiles
R-1.8	Railings Enlarged Plans & Profiles
R-1.9	Railings Enlarged Plans & Profiles
R-1.10	Railings Enlarged Plans & Profiles

Handrail Structural Design and Details

RSD-0.1	Structural General Notes
RSD-1.1	Structural Details
RSD-1.2	Structural Details

END OF TABLE OF CONTENTS

## SECTION 01100

### SUMMARY

#### PART 1 — GENERAL

##### 1.1 PROJECT

- A. Project Name: LEWIS AND CLARK CAVERNS LIGHTING AND LIFE SAFETY DESIGN PROJECT
- B. Owner's Name: STATE OF MONTANA, DEPARTMENT OF FISH, WILDLIFE & PARKS
- C. Project Engineer: FUSSELL ENGINEERING COMPANY
- D. Project Description: The project consists of replacement of existing lighting and power serving the caverns at Lewis and Clark Caverns State Park, near Whitehall, Montana. Replacement of existing and addition of new railings, both lighted and not lighted are included. Demolition and removal of electrical panels and equipment, electrical demolition of lighting and lighting supply conductors are included. Demolition and removal of railings is included.
- E. Alternates have been defined and the Owner will determine which alternates to accept.

##### 1.2 INTENT OF DOCUMENTS

- A. The Contract Documents are intended to provide the basis for proper completion of the work suitable for the intended use of the Owner. Specifications and Drawings included in these Contract Documents establish the performance, quality requirements, location and general arrangement of materials and equipment, and establish the minimum standards for quality of workmanship and appearance. Anything not expressly set forth but which is reasonably implied or necessary for proper performance of the project shall be included. The Contractor shall provide complete and operating systems.
- B. The various portions of the Contract Documents, of which these Specifications are a part, are essential parts of the Agreement, and a requirement occurring in any portion or part is binding as though occurring in all. All portions are intended to be complementary and to describe and provide for a complete work.
- C. In the event of a conflict, discrepancy, contradiction, or inconsistency within the Contract Documents, the Contractor shall immediately contact the Project Engineer for resolution.

##### 1.3 PERMITS AND FEES

- A. Contractor shall be responsible for any and all required permits and fees.

##### 1.4 OWNER OCCUPANCY

- A. Owner intends to occupy the site during construction.
- B. Schedule the Work to accommodate Owner occupancy.
- C. Owner will use the caverns for public tours on December 21, 22, 23, 28, 29, and 30, 2018. There shall be no construction activities in the caverns during the time the Owner is conducting tours. The Contractor shall coordinate with the Owner regarding storage of materials during this time and for times available for construction activities.

##### 1.5 CONTRACTOR USE OF SITE

- A. Refer to other Sections in this document for additional requirements and information.

- B. Contractor shall have access to the site at all times during the construction period except for the days listed above. Construction operations shall be limited to the project site and as required to access and transport material from offsite.
  - C. Arrange use of site and premises to allow:
    - 1. Use of adjacent areas by the Owner.
  - D. Provide access to and from site as required by law and by Owner:
    - 1. Do not obstruct roadways or other public ways without permit.
  - E. Utility Outages and Shutdown:
    - 1. Prevent accidental disruption of utility services to other facilities.
    - 2. If a shutdown is required, notify Owner 48 hours in advance for coordination.
- 1.8 WORK SEQUENCE AND COORDINATION WITH OWNER'S REPRESENTATIVE (CAVE SPECIALIST)
- A. The intent of the Owner is to provide full-time (40 hours per week) on site representation.
  - B. Coordinate construction schedule and operations with Owner and Engineer.
  - C. Contractor shall establish regular working hours, such as 5 – 8 hour days, or 4 – 10 hour days. Provide 48 hours advance notice and coordinate with Owner for overtime work, weekend work or work outside regular working hours.
  - D. Contractor shall field verify dimensions indicated on drawings before fabricating or ordering materials. Do not scale drawings.
  - E. Notify Engineer and Cave Specialist of existing conditions differing substantially from those indicated on the drawings.

END OF SECTION

SECTION 01200

PRICE AND PAYMENT PROCEDURES

PART 1 — GENERAL

1.1 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.

1.2 RELATED DOCUMENTS

- A. Agreement Form: Contract Sum, retainages, payment period.
- B. General Conditions: Additional requirement for progress payments, final payment, changes in the Work.
- C. Section 01300 – Administrative Requirements: Submittals

1.3 SCHEDULE OF VALUES

- A. Submit a completed schedule of values on form provided by Owner.
- B. Submit Schedule of Values within 7 days after date of Notice of Award. Include line items as provided in Cost Breakdown submitted with Bid or as otherwise approved by Engineer.
- C. Incorporate accepted Alternatives in line items and total.
- D. Revise schedule to list approved Change Orders, with each Application for Payment.

1.4 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Present required information in typewritten form.
- C. Form: Payment form provided by Owner
- D. Execute certification by signature of authorized officer.
- E. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work completed and for materials and products stored on site.
- F. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.
- G. Submit three copies of each Application for Payment with continuation sheets.
- H. Include the following with the application:
  - 1. Transmittal letter as specified for Submittals in Section 01300.
  - 2. Construction progress schedule, revised and current as specified in Section 01300.
  - 3. Partial release of liens from major Subcontractors and vendors.
  - 4. Project record documents shall be reviewed for completeness and accuracy at time of application for payment
  - 5. Completion of submittal procedures and other Administrative Requirements shall be reviewed at time of application for payment.
- I. When Engineer or Owner requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.
- J. First Application for Payment will not be processed until all Submittals for Review and all



Submittals for information have been approved by Engineer.

#### 1.5 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, deductions or other adjustments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
  - 1. All closeout procedures specified in General Conditions.
  - 2. All closeout submittals specified in Section 01780.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION - NOT USED

#### PART 4 MEASUREMENT AND PAYMENT

##### 4.1 MEASUREMENT

- A. There will be no direct measurement of items included in the Work of this Project

##### 4.1 PAYMENT

- A. Partial payments for each item of work will be made based on the lump sum amounts indicated in the Schedule of Values including all labor, equipment, materials and incidentals in accordance with the procedures described in Part 1, above.

**END OF SECTION**

SECTION 01230

ALTERNATES

PART 1 — GENERAL

1.1 SECTION INCLUDES

- A. Alternative submission procedures.
- B. Documentation of changes to Contract Sum.

1.2 RELATED SECTIONS

- A. Document - Instructions to Bidders: Instructions for preparation of pricing for alternatives.
- B. Document - Agreement Form: Incorporating monetary value of accepted alternatives.

1.3 ACCEPTANCE OF ALTERNATIVES

- A. Alternatives quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted alternatives will be identified in the Owner-Contractor Agreement.
- B. The amount of cost difference for each alternative item shall be inclusive of all labor and materials; overhead and profit; insurance and bonds; permits and inspections; and other costs, providing a total amount to add to or subtract from the total base bid amount.
- C. Coordinate related work and modify surrounding work to integrate the Work of each alternative.

1.4 SCHEDULE OF ADDITIVE ALTERNATIVES

Add Alt #1: Delete Stainless Steel Welded Wire Mesh Infill Panels and replace with Glass Infill Panels at Flights #5 & #6 (AO & AP/R-1.9), See Detail 1/R-1.7

1.5 SCHEDULE OF DEDUCTIVE ALTERNATIVES

Deduct Alt #1: Delete new Barrier Railing (unlighted) at Overlook (AU/R-1.10) and Piggy Pit (AV/R-1.10) just inside entry Gate and at Bulkhead at bottom of Flight #6 (Profile C, AO/R-1.9). Existing railing assemblies to remain

Deduct Alt #2: Delete new Barrier Railing 36A (unlighted) between Flights 36 and 37 (Profile B, P/R-1.3) and new Barrier Railing 15A (unlighted) near top of Flight #15 (Profile C, AH/R-1.7)

Deduct Alt #3: Delete requirement to replace LED lighting at existing railings Flights #44- #49 (A-D/R-1.1 and G/R-1.2)

Alt #4: Delete new Barrier Railing (unlighted) at Flights #5 & #6 (AO & AP/R-1.9); existing railing assemblies to remain; provide new lighted handrail mounted to existing railing assembly where indicated

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01300

ADMINISTRATIVE REQUIREMENTS

PART 1 — GENERAL

1.1 SECTION INCLUDES

- A. Pre-bid meeting.
- B. Pre-construction meeting.
- C. Progress meetings.
- D. Construction progress schedule.
- E. Submittals for review, information, and project closeout.
- F. Submittal procedures.

1.2 RELATED SECTIONS

- A. General Conditions: Applications for payment; schedules
- B. Section 01150 – Special Conditions
- C. Section 01600 - Product Requirements: Additional Submittal Requirements
- D. Section 01700 - Execution Requirements: Additional coordination requirements.
- E. Section 01780- Closeout Submittals: Project record documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PRE-BID MEETING

- A. The Pre-Bid Meeting shall be held at the time and place established in the Invitation to Bid.
- B. If additional site visits are required beyond the site visit during the required Pre-Bid Meeting, the Contractor shall contact the Owner (listed In 0001) for access to the cavern.

3.2 PRE-CONSTRUCTION MEETING

- A. Owner will schedule a meeting at Notice of Award.
- B. Attendance Required:
  - 1. Owner
  - 2. Engineer, and other consultants as required
  - 3. Contractor, including Superintendent
  - 4. Major subcontractors invited by Contractor
    - a. Contractor to provide list of proposed attendees prior to meeting
- C. Agenda:
  - 1. Execution of Owner-Contractor Agreement.
  - 2. Notice to Proceed/Date of Commencement
  - 3. Distribution of Contract Documents.
  - 4. Review of list of Subcontractors
  - 5. Review requirements for first Application for Payment
  - 6. Review of Submittal Register/List of Products
  - 7. Review of proposed Construction Progress Schedule

8. Review of Long-lead items
  9. Review of Schedule of Values
  10. Review of Substitutions
  11. Review of Submittals
  12. Review of Forms
  13. Designation of personnel representing the parties to Contract, and Engineer.
  14. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  15. Record Documents
  16. Protection of Cavern Resources
- D. Engineer shall record minutes and distribute copies within five days after meeting to the Owner, other consultants, and Contractor. Contractor shall be responsible for distribution to subcontractors and others affected.

### 3.3 PROGRESS MEETINGS

- A. Schedule and administer meetings at jobsite throughout progress of the Work at monthly intervals coinciding with Contractor's Applications for Payment.
1. Based on Contract Time, there will be approximately 7 Progress Meetings
- B. Engineer will preside at meetings, record minutes and distribute copies within five days after meeting to Owner, other consultants and Contractor. Contractor shall distribute to subcontractors and others affected by decisions made.
- C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Engineer, as appropriate to agenda topics for each meeting.
- D. Agenda:
1. Review minutes of previous meetings.
  2. Review of Work progress.
  3. Field observations, problems, and decisions.
  4. Planned progress during successive work period
  5. Identification of problems which impede planned progress.
  6. Review of submittals schedule and status of submittals.
  7. Maintenance of progress schedule.
  8. Corrective measures to regain projected schedules.
  9. Review upcoming Application for Payment
  10. Other business relating to Work.

### 3.4 CONSTRUCTION PROGRESS SCHEDULE

- A. Construction progress schedule shall be submitted no later than 7 days after Notice to Proceed.

### 3.5 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
1. Product data.
  2. Shop drawings.
  3. Samples for selection.
  4. Samples for verification.
- B. All Submittals for Review shall be submitted to and approved by Engineer prior to first Application for Payment.
- C. Submit to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

- D. Samples and mock-ups will be reviewed for aesthetic, color, or finish selection.
- E. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01780 - CLOSEOUT SUBMITTALS.

### 3.6 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
  - 1. Design data.
  - 2. Certificates.
  - 3. Test reports.
  - 4. Inspection reports.
  - 5. Manufacturer's instructions.
  - 6. Manufacturer's field reports.
  - 7. Qualifications information
  - 8. Other types indicated.
- B. All Submittals for Information shall be submitted to and approved by Engineer prior to first Application for Payment.
- C. Submit for Engineer's knowledge as contract administrator and for Owner's benefit during and after project completion.

### 3.7 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit the following at project closeout:
  - 1. Project record documents.
  - 2. Operation and maintenance data.
  - 3. Warranties.
  - 4. Other types as indicated.
- B. See Section 01780 for additional closeout submittal requirements
- C. Submit for Owner's benefit during and after project completion.

### 3.8 SUBMITTAL FORMAT AND NUMBER OF COPIES

- A. Documents for Review: electronic files in PDF format (1 copy)
- B. Documents for Information: electronic files in PDF format (1 copy)
- C. Samples: Submit two samples if requested by the Project Engineer.
- D. Documents for Project Closeout: Make two copies for final submittal. Engineer will retain one copy and forward one copy to Owner. See Section 01780 for additional Closeout Submittal requirements.

### 3.9 SUBMITTAL PROCEDURES

- A. Submittal Register/List of Products: The Contractor shall submit to the Engineer a register indicating the required submittals for all items for which a submittal is required. The register shall be Contractor's form as approved. The register shall be submitted to the Engineer by the Contractor within seven (7) days after the Notice of Award.
- B. Transmit each submittal with AIA Form G810 or form as otherwise approved.
- C. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- D. Identify Project, Owner, Engineer, Contractor, Subcontractor or supplier; pertinent drawing and

detail number, and specification section number, as appropriate on each copy.

- E. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- F. Deliver submittals to Engineer at business address or if in PDF format send them to the Engineer's email address.
- G. Schedule submittals to expedite the Project, and coordinate submission of related items.
- H. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- I. Provide space for Contractor and Engineer review stamps.
- J. Submittals shall be complete with all information required in each Section. Partial or incomplete submittals will returned rejected.
- K. When revised for resubmission, identify all changes made since previous submission. Each resubmission shall be complete with all required information.
- L. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- M. Submittals not requested will not be recognized or processed.
- N. Review of first submittal request for any item or like group of items will be performed by the Engineer at no cost to the Contractor. Subsequent submittals will be reviewed by the Engineer; however, the Engineer will document the work hours and other expenses required for such review(s) and the Contractor may be required to reimburse the Owner for the charges of the Engineer with a deduction from the Contractor's application for payment.

END OF SECTION

## SECTION 01400

### QUALITY REQUIREMENTS

#### PART 1 — GENERAL

##### 1.1 SECTION INCLUDES

- A. References and standards.
- B. Quality assurance submittals.
- C. Control of installation.
- D. Tolerances.
- E. Testing and inspection services.

##### 1.2 RELATED SECTIONS

- A. General Conditions: Inspections and approvals required by public authorities.
- B. Section 01300 - Administrative Requirements: Submittal procedures.
- C. Section 01600 - Product Requirements: Requirements for material and product quality.

##### 1.3 SUBMITTALS

- A. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Engineer, in quantities specified for Product Data.
  - 1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- B. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

##### 1.4 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

##### 1.5 TESTING AND INSPECTION AGENCIES

- A. As indicated in individual specification sections, Owner or Contractor shall employ and pay for services of an independent testing agency to perform specified testing.
- B. Contractor shall employ and pay for services of an independent testing agency to perform all other testing and inspection.
- C. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- D. Contractor Employed Agency shall be approved by Engineer and Owner

## PART 3 EXECUTION

### 2.1 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

### 2.2 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### 2.3 TESTING AND INSPECTION

- A. See individual specification sections and Structural General Notes for testing required.
- B. Testing Agency Duties:
  - 1. Test samples of mixes submitted by Contractor.
  - 2. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
  - 3. Perform specified sampling and testing of products in accordance with specified standards.
  - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  - 5. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of Work or products.
  - 6. Perform additional tests and inspections required by Engineer.
  - 7. Submit reports of all tests/inspections specified.



- C. Limits on Testing/Inspection Agency Authority:
  - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  - 2. Agency may not approve or accept any portion of the Work.
  - 3. Agency may not assume any duties of Contractor.
  - 4. Agency has no authority to stop the Work.
  
- D. Contractor Responsibilities:
  - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.
  - 2. Cooperate with laboratory personnel, and provide access to the Work.
  - 3. Provide incidental labor and facilities:
    - a. To provide access to Work to be tested/inspected.
    - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
    - c. To facilitate tests/inspections.
    - d. To provide storage and curing of test samples.
  - 4. Notify Engineer and laboratory 48 hours prior to expected time for operations requiring testing/inspection services.
  - 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
  - 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
  
- E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Engineer. Contractor shall be responsible for costs of all re-testing.

#### 2.4 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Engineer, it is not practical to remove and replace the Work, Engineer and Owner will direct an appropriate remedy or adjust payment.

END OF SECTION

## SECTION 01500

### TEMPORARY FACILITIES AND CONTROLS

#### PART 1 — GENERAL

##### 1.1 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary telephone service.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Barriers, enclosures, and fencing.
- E. Security requirements.
- F. Vehicular access and parking.
- G. Waste removal facilities and services.
- H. Project identification sign.

##### 1.2 TEMPORARY UTILITIES

- A. Coordinate with Owner for use of on site electrical service for construction purposes. There is a host site electrical pedestal adjacent to the Cave Visitor's Parking lot. This pedestal can be used to power the Contractor's trailer(s). The Owner will pay for the electricity used.
- B. Contractor shall provide all water for construction purposes. No water is available at the construction site.

##### 1.3 COMMUNICATIONS SERVICES

- A. The Engineer believes that Verizon and AT&T do have reception at the Cave Visitor's Center and Parking Lot. Signal quality may vary.

##### 1.4 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization. Owner's facilities will not be available.
- B. Maintain daily in clean and sanitary condition.

##### 1.5 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas for public safety and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

##### 1.6 SECURITY

- A. Provide security and facilities to protect Work, and existing facilities from unauthorized entry, vandalism, or theft.

##### 1.7 VEHICULAR ACCESS AND PARKING

- A. Coordinate access and haul routes with governing authorities and the Owner.
- B. Provide means of removing mud from vehicle wheels before entering streets.

- C. All vehicles entering site shall be free from mud, dirt, construction debris, noxious weeds and seeds: wash mud from previous work site off of tires, top and underneath of all equipment before bringing it onto the work site. The contractor is responsible for all contractor vehicles and tools being in compliance with the requirements for preventing the transfer of disease to the bat population. These requirements are listed in the drawings.
- D. Only designated existing on-site roads may be used for construction traffic.
- E. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking. Coordinate with Owner.
- F. The Contractor shall maintain the access road from the access gate just above the Park Visitor's Center (down by the highway) to the Cavern Visitor's Center Parking lot for the Contractor's work. In addition, the contractor is required to maintain the trails from the Cavern Visitor's Center Parking lot to the cavern upper entrance and from the Cavern Visitor's Center Parking lot to the cavern lower exit for the Contractor's work. The word 'maintain' means plowing and sanding the road and plowing the trails as a result of snow. The path to the lower cavern exit can be plowed with an ATV. The upper trail can be plowed by a snow blower with the snow removal on the stairs using a snow shovel.
- H. There is no overnight accommodations including trailers, trailer hookups, or cabins available within Lewis and Clark Caverns State Park.

#### 1.8 WASTE REMOVAL

- A. See Section 01732 - Waste Management, for additional requirements.
- B. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- C. Provide containers with lids. Remove trash from site weekly.

#### 1.9 PROJECT IDENTIFICATION

- A. Provide site identification sign as approved by Owner and Engineer for deliveries and inspections.
- B. Erect on site at location established by Engineer.
- C. No other signs are allowed without Owner permission except those required by law.

#### 1.10 TRAFFIC CONTROL AND SIGNING

- A. Traffic control and signing for this project shall be provided by the contractor. No additional compensation will be made for traffic control on this project.
- B. The traffic control shall meet all requirements set forth by the Manual of Uniform Traffic Control Devices.

#### 1.11 MAINTENANCE OF TRAFFIC AND ACCESS FOR EMERGENCY

- A. It is the Contractor's responsibility to maintain private and emergency vehicle traffic routes at all times. It is the Contractor's responsibility to sign the routes when they are temporarily closed and to sign an approved detour. No additional compensation will be allowed for this modification to work.

#### 1.12 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Final Application for Payment inspection.
- B. Clean and repair damage caused by installation or use of temporary work.

C. Restore existing facilities used during construction to original condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

## SECTION 01600

### PRODUCT REQUIREMENTS

#### PART 1 — GENERAL

##### 1.1 SECTION INCLUDES

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements, including substitution limitations and procedures, including substitution procedures prior to bid date.

##### 1.2 RELATED SECTIONS

- A. Instructions to Bidders: Product options and substitution procedures prior to bid date.
- B. Section 01300 - Administrative Requirements: Additional Submittal Requirements and Procedures
- C. Section 01400 - Quality Requirements: Product quality monitoring.

##### 1.3 SUBMITTALS

- A. Proposed Products List/Submittal Register: Submit list of products proposed for use for which submittals are required, with name of manufacturer, trade name, and model number of each product.
  - 1. Submit within 7 days after Notice of Award
  - 2. For products specified only by reference standards, list applicable reference standards.
- B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project. Submit data only on products intended for use on this project. Do not submit data on products not intended for use on this project. If literature contains such information, delete or mark out.
- C. Shop Drawing Submittals: Prepared specifically for this Project.
  - 1. Shop drawings shall consist of all drawings, diagrams, illustrations and other data prepared by or for the Contractor to illustrate distinct portions of the work.
  - 2. Shop drawings shall clearly illustrate the product or component including dimensions, size, anchorage to, connection with and location relative to other work. Clearly indicate adjacent work provided by others.
  - 3. Shop drawing shall be drafted and prepared in a professional manner to clearly communicate the intended information.
- D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

#### PART 2 PRODUCTS

##### 2.1 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. Do not use products having any of the following characteristics:
  - 1. Made using or containing CFC's or HCFC's.

## 2.2 PRODUCT OPTIONS

- A. Products requiring submittals/approvals: Only products which have received approval may be used. No substitutions will be considered after Contract award due to poor timing of work or due to failure to comply with approval requirements. See Substitution Procedures listed below.
- B. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- C. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- D. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.
- E. For product specifications which allow for substitutions requiring prior approval, the substitution request shall be made during the bid period as noted in Substitution Procedures below.

## PART 3 EXECUTION

### 3.1 SUBSTITUTION PROCEDURES

- A. For substitutions requiring prior approval, all requests for substitution shall be submitted to the Engineer at least 12 days prior to date of bid opening. Response to these substitution requests will be in the form of Addenda to be issued by the Engineer not less than 7 days prior to the date of bid opening. Comply with requirements specified in this section.
- B. Engineer will consider requests for substitutions for all other products which allow substitutions only within 7 days of Notice of Award. Comply with requirements specified in this section.
- C. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- D. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. This shall include complete product data for originally specified product and equivalent data for proposed substitution indicating compliance with each listed characteristic.
- E. A request for substitution constitutes a representation that the submitter:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  - 2. Will provide the same warranty for the substitution as for the specified product.
  - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
- F. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- G. Substitution Submittal Procedure:
  - 1. Submit one copy of request for substitution for consideration. Limit each request to one proposed substitution.
  - 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
  - 3. The Engineer will notify Contractor in writing of decision to accept or reject request.
  - 4. Review of first substitution request for any item or like group of items will be performed by

the Engineer at no cost to the Contractor. Subsequent submittals will be reviewed by the Engineer; however, the Engineer will document the work hours and other expenses required for such review(s) and the Contractor may be required to reimburse the Owner for the charges of the Engineer with a deduction from the Contractor's application for payment.

### 3.2 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions and requirements of Construction Documents.
- C. Transport materials in covered trucks to prevent contamination of product and littering.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent contamination, soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

### 3.3 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- G. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- H. Prevent contact with material that may cause contamination, corrosion, discoloration, or staining.
- I. Provide equipment and personnel to store products by methods to prevent contamination, soiling, disfigurement, or damage.
- J. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

## SECTION 01700

### EXECUTION REQUIREMENTS

#### PART 1 — GENERAL

##### 1.1 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Cutting and patching.
- C. Surveying for laying out the work.
- D. Cleaning and protection.
- E. Starting of systems and equipment.
- F. Demonstration and instruction of Owner personnel.

##### 1.2 RELATED SECTIONS

- A. General Conditions: Closeout procedures
- B. Section 01100 - Summary: Identification of salvaged and relocated materials.
- C. Section 01300 - Administrative Requirements: Submittals procedures.
- D. Section 01400- Quality Requirements: Testing and inspection procedures.
- E. Section 01500 - Temporary Facilities and Controls
- F. Section 01732 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.
- G. Section 01780 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.

##### 1.3 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration which affects:
  - 1. Structural integrity of any element of Project.
  - 2. Integrity of weather exposed or moisture resistant element.
  - 3. Efficiency, maintenance, or safety of any operational element.
  - 4. Visual qualities of sight exposed elements.
  - 5. Work of Owner or separate Contractor.
  - 6. Include in request:
    - a. Identification of Project.
    - b. Location and description of affected work.
    - c. Necessity for cutting or alteration.
    - d. Description of proposed work and products to be used.
    - e. Alternatives to cutting and patching.
    - f. Effect on work of Owner or separate Contractor.
    - g. Written permission of affected separate Contractor.
    - h. Date and time work will be executed.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities.



## 1.4 PROJECT CONDITIONS

- A. Grade site to drain. Maintain excavations free of water.
- B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere.
- C. Minimize amount of bare soil exposed at one time.
- D. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.
- E. Control of spread of noxious weeds: Provide methods, means and facilities to prevent contamination of soil from spread of noxious weeds to or from site.
- F. Pets: Pets or domestic animals of any type shall not be allowed on the construction site or within State Park boundaries.

## 1.5 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate completion and cleanup of work of separate sections.
- E. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

## PART 2 PRODUCTS

### 2.1 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01600.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or mis-fabrication.

- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

### 3.2 PREPARATION

- A. Provide for protection of adjacent existing elements to remain.
- B. Clean substrate surfaces prior to applying next material or substance.

### 3.3 LAYING OUT THE WORK

- A. Contractor shall be responsible for all Field Engineering
- B. Establish locations of layout control points from existing conditions prior to starting work.
- C. Promptly notify Cave Specialist of any discrepancies discovered.
- D. Contractor shall locate and protect survey control and reference points.
- E. Control datum for survey is that indicated on Drawings.
- F. Maintain a complete and accurate log of control and survey work as it progresses. Record on Record Drawings.

### 3.4 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make neat transitions between different surfaces, maintaining texture and appearance.

### 3.5 CUTTING AND PATCHING

- A. Execute cutting and patching including excavation and fill to complete the work, to uncover work in order to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing when requested, to provide openings in the work for penetration of mechanical and electrical work, to execute patching to complement adjacent work, and to fit products together to integrate with other work.
- B. Execute work by methods to avoid damage to other work, and which will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- C. Restore work with new products in accordance with requirements of Contract Documents.
- D. Make neat transitions. Patch work to match adjacent work in texture and appearance. Where new work abuts or aligns with existing, perform a smooth and even transition.

### 3.6 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition and in compliance with the resource protection requirements.
- B. Collect and remove waste materials, debris, and trash/rubbish from site weekly and dispose off-site;

do not burn or bury.

### 3.7 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage or contamination by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

### 3.8 STARTING SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Engineer and Owner seven days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper control sequence, and for conditions which may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable Contractor personnel in accordance with manufacturers' instructions.
- G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

### 3.9 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate operation and maintenance of products to Owner's personnel seven days prior to date of Substantial Completion.
- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- C. For equipment or systems requiring seasonal operation, perform demonstration for each season.
- D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.
- E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

### 3.10 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

### 3.11 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
  - 1. Clean areas to be occupied by Owner prior to Final Completion before Owner occupancy.

- B. Clean work area inside the cavern and clean the outside cavern area occupied and used by the Contractor.
- C. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in accordance with Section 01732; do not burn or bury.

END OF SECTION

## SECTION 01732

### CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

#### PART 1 — GENERAL

##### 1.1 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Methods of trash/waste disposal that are not acceptable are:
  - 1. Burning on the project site.
  - 2. Burying on the project site.
  - 3. Dumping or burying on other property, public or private.
  - 4. Other illegal dumping or burying.
- E. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, State and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

##### 1.2 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitability, corrosively, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitability, corrosively, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

- L. Sediment: Soil and other debris that has been eroded and transported by storm or other run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

## PART 2 PRODUCTS - NOT USED

## PART 3 EXECUTION

### 3.1 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Instruction: Provide on-site instruction of appropriate separation, handling, and salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- B. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
  - 1. As a minimum, provide:
    - a. Recycling bins at worker lunch area.
  - 2. Provide containers as required.
  - 3. Provide adequate space for pick-up and delivery and convenience to subcontractors.
  - 4. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- C. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- D. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- E. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- F. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

## SECTION 01780

### CLOSEOUT SUBMITTALS

#### PART 1 — GENERAL

##### 1.1 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

##### 1.2 RELATED SECTIONS

- A. General Conditions: Performance bond and labor and material payment bonds, warranty, correction of work, and closeout procedures
- B. Section 01 300 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

##### 1.3 SUBMITTALS

- A. Project Record Documents:
  - 1. Submit one copy of completed documents prior to Substantial Completion. This copy will be reviewed and returned, with Engineer comments. Revise content and format of all documents as required prior to final submission.
  - 2. Submit two set of revised final documents in final form prior to final application for payment.
- B. Operation and Maintenance Data:
  - 1. Submit one copy of preliminary draft or proposed formats and outlines of contents 7 days after Notice to Proceed. Engineer will review draft and return one copy with comments.
  - 2. Submit 1 copy of completed documents 7 days before Date of Substantial Completion. This copy will be reviewed and returned, with Engineer comments. Revise content of all document sets as required prior to Final Submission.
  - 3. Submit two sets of revised final documents in final form prior to final application for payment

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION

##### 3.1 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed shop drawings, product data, and samples.
  - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.

- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - 2. Field changes of dimension and detail.
  - 3. Details not on original Contract drawings.

### 3.2 OPERATION AND MAINTENANCE DATA

- A. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Include manufacturer's printed operation and maintenance instructions.
- D. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- E. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- F. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

### 3.3 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
  - 1. Description of unit or system, and component parts.
  - 2. Identify function, normal operating characteristics, and limiting conditions.
  - 3. Complete nomenclature and model number of replaceable parts.
- B. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- C. Maintenance Requirements: Include routine procedures and guide for maintenance and trouble shooting.
- D. Include manufacturer's printed operation and maintenance instructions.
- E. Include sequence of operation by controls manufacturer.
- F. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- G. Additional Requirements: As specified in individual product specification sections.

### 3.4 OPERATION AND MAINTENANCE MANUALS

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described



products.

- B. Prepare data in the form of an instructional manual.
- C. Binders: Commercial quality, 8-1/2 x 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.
- F. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.
- G. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size to fit in pocketed inserts the same size of text pages.
- H. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
- I. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.
- J. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Engineer, Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.

### 3.5 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

## SECTION 01800

### PROVISIONS FOR RESOURCE PROTECTION

#### PART 1 — GENERAL

##### 1.1 SECTION INCLUDES

- A. Special Conditions.

##### 1.2 RELATED SECTIONS

- A. General Conditions: Performance bond and labor and material payment bonds, warranty, correction of work, and closeout procedures
- B. Section 01 300 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.
- E. Special conditions on Drawing Sheet G2.0 apply. Where there is duplication, the most restrictive shall apply.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION

##### 1.0 GENERAL

- 1.1. Lewis and Clark Caverns requires constant steward ship to protect its fragile environment and geological treasures. The uniqueness of the Caverns requires special care to prevent any possible change and/or damage. Millions of years of natural development can be drastically altered in an instant. Anyone working in the Caverns must be aware of the possibilities, and everyone must make it a personal goal to take only memories and leave only footprints inside Lewis & Clark Caverns State Park.
- 1.2 The Contractor shall take all necessary precautions to prevent damage to all natural formations inside the Caverns. The Contractor, with the approval of the Cave Specialist, shall clearly mark with engineering marking tape the paths where workers must follow when off the existing path. All workers shall stay within the marked lines of the temporary paths. The Contractor shall remove the temporary markings when the work is completed.
- 1.3 The Contractor must seek approval from the Cave Specialist before removing any natural materials from the Caverns. All material removed must be documented as to type, quantity and disposition.
- 1.4 Accidental damage to the Caverns must be reported to the Cave Specialist immediately, documenting the time, day, date, conditions, and person causing the damage and supervisor.
- 1.5 The Contractor shall be responsible for any malicious damage to the Caverns during the construction project. Employees causing malicious damage shall be dismissed immediately and banned from the project permanently. Malicious damage to the Caverns shall be prosecuted to the fullest extent of the law.

- 1.6 The Contractor, its employees including all sub-contractors and their employees, must attend a four-hour orientation by the Lewis & Clark Caverns Staff prior to commencing any work inside the Caverns. This orientation shall be provided to the Contractor by Lewis & Clark Caverns staff without any additional cost to either party. The Contractor shall make employees available at no additional cost to Lewis & Clark Caverns for this orientation.
- 1.7 Contractors and their employees must wear gloves inside the Caverns to prevent the touching of any geological formations by a person's hands.
- 1.8 Contractors and their employees must wear all standard safety equipment, including work shoes, safety glasses when required, and head gear.
- 1.9 No food or drinks, except water, shall be taken into or used inside the Caverns.
- 1.10 No tobacco products of any kind may be taken into or used inside the Caverns.
- 1.11 All conduits, cables, junction boxes, control panels and other electrical equipment shall be concealed from the public view to the maximum extent possible, with the exception of exact locations directed in these plans and accompanying photos. If conduit must be installed underground, conceal and/or cover the excavated area with materials native to the Caverns.

## 2.0 WORK SURFACES/STAGING AREAS

- 2.1 The Contractor may use the existing paths and steps for temporary work surfaces and staging areas. The Contractor must provide adequate protection when using the existing paths and/or steps. The Contractor shall provide a list of areas to be used and the suggested protection required. The Lewis & Clark Caverns Staff must approve the suggested protection needed for each area prior to the Contractor proceeding. The existing paths and steps must be returned to the original condition upon completion of the work, unless the work is upgrading the existing paths and steps.
- 2.2 Geological formations shall not be used for temporary work surfaces in any manner. When directed by the Cave Specialist, the use of any part of the Caverns shall be terminated immediately.
- 2.3 Before proceeding, the Contractor shall provide details of any work areas, staging areas and temporary storage facilities to be established outside the Caverns. The details shall include ground plans, heights, weights and utilities required for temporary structures; list of materials with particular attention to any hazardous materials to be stored in the temporary facilities. The Contractor must receive Lewis & Clark Caverns written approval before proceeding.

## 3.0 TOOLS/ELECTRICAL MATERIALS

- 3.1 Powered tools used inside the Caverns shall be limited to electrically powered tools. Any electrically powered tools producing heat shall be pre-approved for use by the Project Engineer. Note that there are about four or five receptacles scattered within the cavern
- 3.2 No paints or solvents of any type may be used inside the Caverns without prior approval by the Project Engineer.
- 3.3 Electrical tape used inside the Caverns shall be limited to 3M Scotch Type 70, self-fusing silicone rubber electrical tape, Class "H" Insulation, and 3M Scotch 130C Linerless Rubber Silicone tape for low and hi voltage (thru 69KV). No other electrical tape may be used.

3.4 No commercially available pulling lubricant, such as Scotch Yellow 77, shall be used inside the Caverns. When required, pulling lubricant shall be water.

3.5 Substitutions for any of the above materials may be proposed by the Contractor in writing. Substitution products proposed by the Contractor must demonstrate the same characteristics as the original. The Contractor shall be responsible for providing test results substantiating the characteristics, for submission of samples to the Fussell Engineering, and for sufficient time for the Project Engineer's evaluation. Substitutions may not be used unless approved in writing by the Project Engineer.

#### 4. DEMOLITION

4.1 All demolition activities shall be undertaken in such manner as to prevent damage to the cave.

4.2 Materials to be removed shall be separated into pieces of sufficiently small size and weight to allow easy removal without touching cave surfaces during transport. If necessary provide protective wrappings.

4.3 When cutting materials provide means to confine and capture all pieces, filings, dust and other small particles resulting from the cutting operations. Completely remove all demolished materials from the cavern and dispose of properly off-site, unless specifically noted otherwise.

#### 4.0 SPECIAL SUBMITTALS

4.1 In general, for a procedure, method, or proposed action that might put the cavern environment at risk, the Contractor shall clear such procedure, method, or proposed action with the Owner and/or the Project Engineer. It is the intent of these requirements to assist the Contractor in protecting the cavern environment while allowing the Contractor to propose a best solution for a specific task.

4.2 For demolition, the Contractor shall prepare a demolition plan indicating proposed means and methods to confine, contain and remove all materials for each type of demolition activity.

4.3 For drilling and saw cutting in the cavern, the Contractor shall prepare a submittal for each type of drilling and saw cutting of the cavern floor, trail or other saw cutting activity. The submittal should include at least the method of drilling or cutting, any drilling fluid to be used, and the means and methods to confine the drilling fluid to the area of work and to prevent its escape into the cavern environment.

4.4 For trail concrete work, the Contractor shall prepare a submittal for the means and methods for patching the trail after saw cutting the trail.

4.5 For step/stair modifications concrete work, the Contractor shall prepare a submittal for the means and methods for adding to or modifying the existing steps.

#### 5.0 CONCRETE

5.1 Refer to structural general notes and drawing details included in these construction documents for all concrete work.

#### 6.0 MISCELLANEOUS SPECIAL CONDITIONS

6.1 Notwithstanding of other provisions of the contract, if there is a conflict between various sections of the contract documents including specifications and drawings, the Contractor shall notify the Project

Engineer. The Project Engineer, as required, will provide a suitable clarification or explanation to resolve the conflict. In no case can a preordained hierarchy of contract components be assumed by the Contractor.

- 6.2 The Contractor is responsible for restoring all roadways, trails, and site areas disturbed by construction activities to their pre-existing conditions.

END OF SECTION