

Montana State Parks Foundation

SPECIFICATIONS FOR WORK SPECIAL PROVISIONS

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1. PROJECT DESCRIPTION

The Project involves construction work associated with:

**Lewis and Clark Caverns State Park Cavern Exit Shade Shelter
Project # 7206301
Located in Jefferson County, MT**

The project generally includes construction of a steel and timber framed shade shelter including earthwork and concrete footings and incidentals.

2. PROJECT RELATED CONTACTS

Project contacts are designated as follows:

Owner:

Montana State Parks Foundation
400 West Broadway St.
Suite 101-424
Missoula, MT 59802

Project Representative:

Coby Gierke – Executive Director
406-370-9868

Design Consultant:

Martin Drivdahl, PE
6401 Lone Pine Road
Helena, MT 59602-8712
406-442-2783

3. SITE INSPECTION

All Bidders should satisfy themselves as to the construction conditions by personal examination of the site described in this document. Bidders are encouraged to make any - investigations necessary to assess the nature of the construction and the difficulties to be encountered, see General Conditions, Article 3.

4. SOILS INFORMATION

Geotechnical investigation work has not been done for this Project. It is the responsibility of the Bidders to conduct all investigations and determine the soil type and digging conditions that may be encountered with this Project prior to bid preparation, see General Conditions, Article 3.

5. PROJECT REPRESENTATIVE, INSPECTIONS, AND TESTING

The Contractor's work will be periodically tested and observed to insure compliance with the Contract Documents. Complete payment will not be made until the Contractor has demonstrated that the work is complete and has been performed as required. If the

Project Representative detects a discrepancy between the work and the requirements of the Contract Documents at any time, up to and including final inspection, such work will not be completely paid for until the Contractor has corrected the deficiency, see General Conditions, Article 9.

The Project Representative will periodically monitor the construction of work to determine if the work is being performed in accordance with the contract requirements. The Project Representative does not have the authority or means to control the Contractor's methods of construction. It is, therefore, the Contractor's responsibility to utilize all methods, equipment, personnel, and other means necessary to assure that the work is installed in compliance with the Drawings and Specifications, and laws and regulations applicable to the work. Any discrepancies noted shall be brought to the Contractor's attention, who shall immediately correct the discrepancy. Failure of the Project Representative to detect a discrepancy will not relieve the Contractor of his ultimate responsibility to perform the work as required, see General Conditions, Article 3.

The Contractor shall inspect the work as it is being performed. Any deviation from the Contract requirements shall be immediately corrected. Prior to any scheduled observation by the Project Representative, the Contractor shall again inspect the work and certify to the Project Representative that he has inspected the work and it meets the requirements of the Contract Documents. The Project Representative may require uncovering of work to verify the work was installed according to the contract documents, see General Conditions, Article 12.

The work will be subject to review by the Project Representative. The results of all such observations, and all contract administration, shall be directed to the Contractor only through the Project Representative.

5.1 Services Required by the Contractor. The Contractor shall provide the following services:

- a. Any field surveys to establish locations, elevations, and alignments as stipulated on the Contract Documents. The Owner reserves the right to set preliminary construction staking for the project. The Contractor is responsible to notify the Owner for any construction staking discrepancies.
- b. Preparation and certification of all required shop drawings and submittals as described in the General Conditions, Article 3.
- c. All testing requiring the services of a laboratory to determine compliance with the Contract Documents shall be performed by an independent commercial testing laboratory acceptable to the Project Representative. The laboratory shall be staffed with experienced technicians properly equipped, and fully qualified to perform the tests in accordance with the specified standards.
- d. Preparation and submittal of a construction schedule, including submittals, see General Conditions, Article 3. The schedule shall be updated as required, as

defined in the Contract Documents.

- e. All Quality Control testing as required by the Contractor's internal policies.
- f. All Quality Assurance testing and/or re-testing as stated in the Contract Documents, see General Conditions, Article 13.

5.2 Services Provided by the Owner. The Owner shall provide the following services at no cost to the Contractor except as required for retests as defined in the Contract Documents.

- a. The Project Representative may check compaction of backfill and surfacing courses using laboratory testing submittal information supplied by the Contractor. These tests are to determine if compaction requirements are being fulfilled in accordance with the Contract Documents. It is ultimately the responsibility of the Contractor to ensure that this level of compaction is constant and met in all locations.
- b. Any additional Quality Assurance testing deemed appropriate by the Owner, at the Owner's expense.

6. ENGINEERING INTERPRETATIONS

Timely Engineering decisions on construction activities or results have an important bearing on the Contractor's schedule. When engineering interpretation affects a plan design or specifications change, it should be realized that more than 24 hours may be required to gain the necessary Owner participation in the decision process including time for formal work directive or change order preparation as required.

7. REJECTED WORK

Any defective work or nonconforming materials or equipment that may be discovered at any time prior to the expiration of the warranty period, shall be removed and replaced with work or materials conforming to the provisions of the Contract Documents, see General Conditions, Article 12. Failure on the part of the Project Representative to condemn or reject bad or inferior work, or to note nonconforming materials or equipment on the Contractor's submittals, shall not be construed to imply acceptance of such work. The Owner shall reserve and retain all its rights and remedies at law against the Contractor and its Surety for correction of any and all latent defects discovered after the guarantee period (MCA 27-2-208).

Only the Project Representative will have the authority to reject work which does not conform to the Contract Documents.

8. UTILITIES

The exact locations of existing utilities that may conflict with the work are not precisely

known. It shall be the Contractor's responsibility to contact the owners of the respective utilities and arrange for field location services. **One Call Locators, 1-800-424-5555**

The Contract Documents may show utility locations based on limited field observation and information provided to the Project Representative by others. **The Project Representative cannot guarantee their accuracy.** The Contractor shall immediately notify the Project Representative of any discrepancies with utility locations as shown on the Contract Drawings and/or bury depths that may in any way affect the intent of construction as scoped in these specifications.

There will be no separate payment for exploratory excavation required to locate underground utilities.

8.1 Notification. The Contractor shall contact, in writing, all public and private utility companies that may have utilities encountered during excavation. The notification includes the following information:

- a. The nature of the work that the Contractor will be performing.
- b. The time, date and location that the Contractor will be performing work that may conflict with the utility.
- c. The nature of work that the utility will be required to perform such as moving a power pole, supporting a pole or underground cable, etc.
- d. Requests for field location and identification of utilities.

A copy of the letter of notification shall be provided to the Project Representative. During the course of construction, the Contractor shall keep the utility companies notified of any change in schedule, or nature of work that differs from the original notification.

8.2 Identification. All utilities that may conflict with the work shall be the Contractor's responsibility to locate before any excavation is performed. Field markings provided by the utility companies shall be preserved by the Contractor until actual excavation commences. All utility locations on the Drawings should be considered approximate and should be verified in the field by the Contractor. The Contractor shall also be responsible for locating all utilities that are not located on the Drawings.

Utilities are depicted on the Contract Documents in accordance with their achieved "Quality Levels," as defined in the American Society of Civil Engineer's Document, ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data." Reliance upon these data for risk management purposes during bidding does not relieve the Contractor, or Utility Owner from following all applicable utility damage prevention statutes, policies, and/or procedures during construction. It is important that the Contractor investigates and understands the scope of work between the project Owner and Engineer regarding scope of limits of the utility

investigations leading to these utility depictions. Definitions of Quality Levels are described as follows:

- a. "QUALITY LEVEL A" – (QLA): LOCATING THROUGH EXCAVATION. QLA data are highly accurate and are obtained by surveying an exposed utility. As such, both horizontal and vertical data are recorded. Survey accuracies are typically set at 15mm (1/2-inch) vertically, and to project survey standards horizontally (typically the same as for topography features), although these survey accuracies and precisions are generally left to the owner to specify in a scope of work. In addition to the applicable standard of care and any other additional standards imposed by commercial indemnity clauses, the accuracy of these location data is also typically guaranteed. Other data typically characterized include material type, surface elevation, utility size/capacity, outside dimensions, and configurations, soil type, and utility condition.
- b. "QUALITY LEVEL B" – (QLB): DESIGNATING. QLB information is obtained through the application of appropriate surface geophysical methods to identify the existence and approximate horizontal location of utilities (a utility's "designation") within the project limits, followed by survey, mapping, and professional review of that designation. Underground utilities are identified by interpretation of received signals generated either actively or passively, and through correlating these received signals with visible objects (QLC) and record data (QLD) to determine function. Designated utilities that can't be identified are labeled as "unknowns." Although approximate has no accuracy associated with it, generally the locations are within inches rather than feet. The more utility congested the area or the deeper the utilities, the less likely it is that the designations will achieve that accuracy. These designations are then surveyed to project accuracies and precisions, typically third-order accuracy similar to other topography features. Note that surveying existing one-call marks does not lead to QLB data, since the genesis of the marks was not under the direct responsible charge of the professional certifying the QLB depictions, and one-call generally does not address unknown utilities, privately owned utilities, utilities without records, abandoned utilities, and so on. Nor does the professional have knowledge of the field technician's qualifications, training, and level of effort.
- c. "QUALITY LEVEL C" – (QLC): SURFACE VISIBLE FEATURE SURVEY. QLC builds upon the QLD information by adding an independent detailed topography site survey for surface-visible appurtenances of subsurface utilities including but not limited to fire hydrants, valves, risers, and manholes. Professional judgment is used to correlate the QLD data to the surveyed features, thus increasing the reliability of both utility location and existence. It is a

function of the professional to determine when records and features do not agree and resolve discrepancies. This may be accomplished by depiction of a utility line at quality level D, effectively bypassing or disregarding (but still depicting) a surveyed structure of unknown origin. Additional resolution may result from consultation with utility owners.

- d. "QUALITY LEVEL D" – (QLD): EXISTING RECORDS RESEARCH. QLD is the most basic level of information. Information is obtained from the review and documentation of existing utility records, verbal accounts, and/or one-call markings (to determine the existence of major active utilities and their approximate locations).

- 8.3 Removal or Relocation of Utilities. All electric power, street lighting, gas, telephone, and television utilities that require relocation will be the responsibility of the utility owner. A request for extending the specified contract time will be considered if utility owners cause delays.
- 8.4 Public Utilities. Water, sewer, storm drainage, and other utilities owned and operated by the public entities shall, unless otherwise specifically requested by the utility owner, be removed, relocated, supported or adjusted as required by the Contractor at the Contractor's expense. All such work shall be in accordance with these Contract Documents, or the Owner's Standard Specifications or written instructions when the work involved is not covered by these Specifications.
- 8.5 Other Utilities. Utilities owned and operated by private individuals, railroads, school districts, associations, or other entities not covered in these Special Provisions shall, unless otherwise specifically requested by the utility owner, be removed, relocated, supported or adjusted as required by the Contractor at the Contractor's expense. All work shall be in accordance with the utility owner's directions, or by methods recognized as being the standard of the industry when directions are not given by the owner of the utility.
- 8.6 Damage to Utilities and Private Property. The Contractor shall protect all utilities and private property and shall be solely responsible for any damage resulting from his construction activities. The Contractor shall hold the Owner and Project Representative harmless from all actions resulting from his failure to properly protect utilities and private property. All damage to utilities shall be repaired at the Contractor's expense to the full satisfaction of the owner of the damaged utility or property. The Contractor shall provide the Owner with a letter from the owner of the damaged utility or property stating that it has been repaired to the utility owner's full satisfaction.
- 8.7 Structures. The Contractor shall exercise every precaution to prevent damage to existing buildings or structures in the vicinity of his work. In the event of such damages, he shall repair them to the satisfaction of the owner

of the damaged structure at no cost to the Owner.

- 8.8 Overhead Utilities. The Contractor shall use extreme caution to avoid a conflict, contact, or damage to overhead utilities, such as power lines, streetlights, telephone lines, television lines, poles, or other appurtenances during the course of construction of this project.
- 8.9 Buried Gas Lines. The Contractor shall provide some means of overhead support for buried gas lines exposed during trenching to prevent rupture in case of trench caving.
- 8.10 Pavement Removal. Where trench excavation or structure excavation requires the removal of curb and gutter, concrete sidewalks, or asphalt or concrete pavement, the pavement or concrete shall be cut in a straight line parallel to the edge of the excavation by use of a spade-bitted air hammer, concrete saw, colter wheel, or similar approved equipment to obtain a straight, square clean break. Pavement cuts shall be 2 feet wider than the actual trench opening.
- 8.11 Survey Markers and Monuments. The Contractor shall use every care and precaution to protect and not disturb any survey marker or monuments, such as those that might be located at lot or block corners, property pins, intersection of street monuments or addition line demarcation. Such protection includes markings with flagged high lath and close supervision. No monuments shall be disturbed without prior approval of the Project Representative. Any survey marker or monument disturbed by the Contractor during the construction of the project shall be replaced at no cost to the Owner by a licensed land surveyor.
- 8.12 Temporary Utilities. The Contractor shall provide all temporary electrical, lighting, telephone, heating, cooling, ventilating, water, sanitary, fire protection, and other utilities and services necessary for the performance of the work. All fees, charges, and other costs associated therewith shall be paid for by the Contractor.

9. CONSTRUCTION SAFETY

The Contractor shall be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees and subcontractors) and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor (OSHA), and all other applicable federal, state, county, and local laws, ordinances, codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. The Contractor's failure to thoroughly familiarize himself with the

aforementioned safety provisions shall not relieve them from compliance with the obligations and penalties set forth therein, see General Conditions, Article 10.

10. CONSTRUCTION LIMITS AND AREAS OF DISTURBANCE

- 10.1 Construction Limits. Where construction easements or property lines, are not specifically called out on the Contract Documents, limit the construction disturbance to ten (10) feet, when measured from the edge of the slope stake grading, or to the adjacent property line, whichever is less. Disturbance and equipment access beyond this limit is not allowed without the written approval of both the Project Representative and the Owner of the affected property. If so approved, disturbance beyond construction limits shall meet all requirements imposed by the landowner; this includes existing roads used and/or improved as well as the construction of new access roads. Special construction, reclamation, or post-construction reclamation or other closure provisions required by the landowner on access roads beyond the construction limits shall be performed by the Contractor at no additional cost to the Owner.
- 10.2 Areas of Disturbances. Approved areas of disturbance are those areas disturbed by construction activities within the construction limits and along designated or approved access routes. Such areas may require reclamation and revegetation operations, including grading to the original contours, top soiling with salvaged or imported topsoil, seeding, fertilizing, and mulching as specified herein. Other areas that are disturbed by the Contractor's activities outside of the limits noted above will be considered as site damage or unapproved areas of disturbance, see General Conditions, Articles 3 and 10. This includes areas selected by the Contractor outside the defined construction limits for mobilization, offices, equipment, or material storage.

11. DECONTAMINATE CONSTRUCTION EQUIPMENT

Power wash all construction equipment entering the project site to prevent the spread of noxious weeds and aquatic invasive species.

12. TREE PROTECTION AND PRESERVATION

The Contractor and the Owner shall individually inspect all trees within the project construction limits prior to construction. The Owner shall determine which trees are to be removed and which trees are to be preserved. Construction of the grading, utilities and various roadway facilities must not significantly damage the trees root system or hinder it's chances for survival. Reasonable variations from the Contract Documents, as directed by the Project Representative, may be employed to ensure the survival of trees.

13. CONSTRUCTION SURVEYS

The Contractor will be responsible for all layout and construction staking utilizing the Project Representative's existing control and coordinate data for the project. Dimensions and elevations indicated in layout of work shall be verified by the Contractor. Discrepancies between Drawings, Specifications, and existing conditions shall be referred to the Project Representative for adjustment before work is performed. The Project Representative may set location and grade stakes prior to construction; however, it is ultimately the responsibility of the Contractor to check and verify all construction staking for the project.

Existing survey control (horizontal and vertical) has been set for use in the design and ultimately the construction of these improvements. A listing of the coordinates and vertical elevation for each of these control points may be included in the project drawings.

The Contractor will be responsible for preserving and protecting the survey control until proper referencing by the Contractor has been completed. Any survey control obliterated, removed, or otherwise lost during construction will be replaced at the Contractor's expense.

Contractor shall be aware of property pins and survey monuments. Damage to these pins will require replacement of such by a registered land surveyor at no cost to the owner.

The Contractor shall provide construction staking from the Contractor's layouts and the control points. Contractor's construction staking includes at a minimum:

1. Offsets to column centerlines adequate to ensure location identified by Project Representative.
2. Removal of existing asphalt to neat lines as required for footing excavation.

Original field notes, computations and other records take by the Contractor for the purpose of quantity and progress surveys shall be furnished promptly to the Project Representative and shall be used to the extent necessary in determining the proper amount of payment due to the Contractor.

14. MATERIAL SOURCES AND CONSTRUCTION WATER

The Contractor shall be responsible for locating all necessary material sources, including water, necessary to complete the work. The Contractor shall be responsible for meeting all transportation and environmental regulations as well as paying any royalties. The Contractor shall provide the Project Representative with written approvals of landowners from whom materials are to be obtained, prior to approval.

The Contractor may use materials from any source, providing the materials have been

tested through representative samples and will meet the Specifications.

Water for compaction and clean-up efforts shall be supplied by the Contractor.

15. MATERIALS SALVAGE AND DISPOSAL

Notify the Owner for any material salvaged from the project site not identified in the Contract Documents. The Owner reserves the right to maintain salvaged material at the project site, compensate the Contractor for relocation of salvaged material, or agreed compensation to Owner for material salvaged by the Contractor.

Haul and waste all waste material to a legal site and obey all state, county, and local disposal restrictions and regulations. Waste material may be wasted at a site within the state park at a location identified in advance by the Owner.

16. STORED MATERIALS

Contractor shall use an approved storage area for materials. Materials and/or equipment purchased by the Contractor may be compensated on a monthly basis. For compensation, provide the Project Representative invoices for said materials, shop drawings and/or submittals for approval, and applicable insurance coverage, see General Conditions, Article 9.

17. STAGING AND STOCKPILING AREA

Contractor shall use staging and stockpiling sites for to facilitate the project as approved by the Owner. Contract Documents may show approved staging and stockpiling locations. Notify Owner within 24 hours for approval of staging and stockpiling sites not shown on the Contract Drawings.

18. SECURITY

The Contractor shall provide all security measures necessary to assure the protection of equipment, materials in storage, completed work, and the project in general.

19. CLEANUP

Cleanup for each item of work shall be fully completed and accepted before the item is considered final. If the Contractor fails to perform cleanup within a timely manner the Owner reserves the right to withhold final payment.

Review these Contract Documents for additional Final Cleanup specifications for specific measures, associated with Contractor responsibilities and final payment.

20. ACCESS DURING CONSTRUCTION

Provide access to all public and private roadways and approaches within the project throughout the construction period.

Provide emergency access at all times within the project throughout the construction period.

21. CONSTRUCTION TRAFFIC CONTROL

The Contractor is responsible for providing safe construction and work zones within the project limits by implementing the rules, regulations, and practices of the Manual on Uniform Traffic Control Devices, current edition.

22. SANITARY FACILITIES

Provide on-site toilet facilities for employees of Contractor and Sub-Contractors and maintain in a sanitary condition.

23. CONTRACT CLOSEOUT

The Contractor's Superintendent shall maintain at the project site, a "Record Set of Drawings" showing field changes, as-built elevations, unusual conditions encountered during construction, and such other data as required to provide the Owner with an accurate "as constructed" set of record drawings. The Contractor shall furnish the "Record Set" to the Project Representative following the Final Inspection of the Project.

The Contractor's final payment will not be processed until the "Record Set" of drawings are received and approved by the Project Representative.

**SPECIFICATIONS FOR
WORK TECHNICAL
PROVISIONS**

Incorporation of Montana Public Works Technical Specifications.

The Technical Specifications as found in Montana Public Works Standard Specifications (MPWSS), Sixth Edition, April 2010; are hereby incorporated by reference and made a part of this Contract:

Incorporation of Montana State Parks Foundation Technical Specifications and Modifications to MPW Technical Specifications.

In addition to the MPWSS Technical Specifications are the following Montana State Parks Foundation Technical Specifications (modifications to MPWSS Technical Specifications).

SECTION 01050 - Field Engineering
SECTION 01400 - Contractor Quality Control and Owner Quality Assurance
SECTION 01450 - Mobilization/Demobilization

SECTION 01050

FIELD ENGINEERING

All applicable portions of this specification section in the MPWSS shall apply with the following additions, deletions and/or modifications.

PART 3 EXECUTION

Add the following:

1.3 CONSTRUCTION SURVEY

- A. Owner will provide survey control (northing/easting), benchmarks (local datum), and column center points, as shown on the project drawings.

PART 4 MEASUREMENT AND PAYMENT

Add the following:

- A. Contractor construction surveying will not be measured for payment and is considered incidental to other bid items in this contract.

END OF SECTION 01050

SECTION 01400

CONTRACTOR QUALITY CONTROL AND OWNER QUALITY ASSURANCE

All applicable portions of this specification section in the MPWSS shall apply with the following additions, deletions and/or modifications.

PART 3 EXECUTION

3.1 GENERAL

C. Replace with the following:

The Contractor is responsible for providing all quality assurance testing by an independent testing agency. The Contractor will pay for all quality assurance testing by an independent testing agency.

PART 4 MEASUREMENT AND PAYMENT

Replace with the following:

4.1 PAYMENT FOR TESTING

The Contractor will pay for all quality control testing. The Contractor will pay for all quality assurance testing by an independent testing agency. The Contractor will pay for all associated re-testing efforts (both quality control and quality assurance).

END OF SECTION 01400

SECTION 01450

MOBILIZATION/DEMOBILIZATION

Added Section.

PART 1 GENERAL

1.1 DESCRIPTION

- A. This item shall consist of the predatory work and operations necessary performed by the Contractor for the movement of personnel, equipment, supplies, and incidentals to and from the work site. The work includes those actions necessary for obtaining necessary permits required for mobilization; for the establishment of all offices and facilities necessary to work on the project; for premiums on contract bonds; for insurance for the contract; and for other work on the various items on the project site. Mobilization costs for subcontracted work shall be considered to be included.
- B. Contractor's cost for administration, bonding, insurance, and site documents shall be included in mobilization and shall not be paid as a separate item.
- C. All equipment moved to the project sites shall be in good mechanical condition and free of fuel, oil, lubrication, or other fuel leaks. The Contractor shall immediately remove any equipment potentially or actually discharging environmentally damaging fluids.
- D. All equipment moved to the project sites shall be thoroughly cleaned before it is brought to the sites to prevent the introduction of weed seeds. Equipment removed from the sites may not be returned to the sites again until it is thoroughly cleaned again.

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 this item.

4.2 PAYMENT

- A. Mobilization/demobilization will be included in the lump sum bid price.

END OF SECTION 01450

SECTION SP - SPECIAL PROJECT REQUIREMENTS

SP.01 DESCRIPTION

This section of the Specifications covers project requirements unique to this project or not fully covered elsewhere in the Technical Specifications.

SP.02 STANDARD SPECIFICATIONS

This contract will be constructed and administered under the requirements of the Montana Public Works Standard Specifications (MPWSS), current edition, as amended, and all supplemental documents contained herein. The MPWSS are included in their entirety; as applicable, and as modified, amended, supplemented or replaced by the Plans and Technical Specifications.

SP.03 SUBMITTALS

The Contractor shall submit the following items to the Owner for review and approval:

No shop drawings need to be submitted, but the contractor will be solely responsible to meet all materials specifications and to fabricate and construct all elements to fit properly.

SP.04 MEASUREMENT AND PAYMENT

No items in this project will be measured or paid for on a unit price basis. The lump sum bid prices and payments for the Basic Bid will include all workmanship and materials shown on the drawings or specified herein.

SP.05 EQUIPMENT RESTRICTIONS

In order to prevent undue damage to the existing asphalt surfacing, equipment will be restricted to small equipment in-so-far as possible. In no case will skid-steer loaders or steel cleated track equipment be permitted.

SP.06 REFERENCE DRAWINGS AND TECHNICAL SPECIFICATIONS

1. Drawings No. S1 thru S8 of 8.
2. Technical Specifications. Sections 1 thru 10.

End of Section

SECTION 1 - DEMOLITION AND REMOVALS

1.01 DESCRIPTION

This section of the Specifications covers work requirements and details for completing that portion of the project shown on the drawings as described below:

- A. Removal of old asphalt surfacing in the areas shown on the drawings where new concrete foundations will be poured for the shade shelter columns.
- B. Removal and relocation of existing benches and curbs where shown on the drawings or necessary to complete the work.

1.02 GENERAL

All work and disposal methods shall be done in a manner acceptable to the project representatives of the Owner. The existing asphalt surfacing shall be cut with an asphalt cutting blade to the neat lines shown on the drawings. Removal shall include hand methods if necessary, to prevent any damage to the cut-off asphalt edges to remain in place.

1.03 DISPOSAL

All removed demolition materials and other disposables generated by site preparation work shall be removed from the job site and transported by the Contractor to a suitable disposal site. Disposal methods shall meet all local ordinances, State codes, and Federal requirements, as applicable. Any and all fees for use of a disposal site shall be born by the Contractor.

1.04 REFERENCE DRAWINGS

Sheets S2 and S4.

End of Section

SECTION 2 - EXCAVATION

2.01 DESCRIPTION

This section covers excavation, and any associated work shown on the drawings or specified herein for the following:

- A. Removal and disposal of soils to be excavated to pour concrete footings within the neat lines shown on the drawings.

2.02 EXCAVATION

- A. Excavations shall be done with extreme care so as not to damage the saw cut asphalt edges where the old asphalt pavement is to be removed. It is anticipated that hand methods will be needed to cut and remove a portion of the soils to result in providing vertical sides to the excavations as near as practicable along the perimeters of the asphalt edges. If any of the asphalt edges are damaged during excavating, suitable repairs shall be made or formed block-outs provided in order that the concrete be poured to provide straight true edges.

2.03 DISPOSAL OF EXCAVATED SOILS

- A. All excavated soil and rocks shall be removed from the immediate project area and wasted at a site within the park acceptable to the Owner.

2.04 REFERENCE

DRAWINGS S2 and S4

End of Section

SECTION 3 - SURVEYING

3.01 DESCRIPTION

This section of the Specifications covers the Contractor's requirement in providing surveying and staking as necessary for constructing the new shade shelter.

3.02 SPECIFIC REQUIREMENTS

FWP personnel have set and identified on the plans control points at the centers of each of the shade shelter columns. The Contractor shall be responsible for surveying and setting right angle and centerline of structure offsets in order to be able to establish neat lines for pavement cuts and exact locations for drilling and setting the threaded anchor rods after the concrete footings are poured. The contractor is also responsible for providing level work to set the bottoms of all column base plates at the same elevation.

3.03 REFERENCE DRAWINGS

Sheet 2, S4, and S8.

End of Section

SECTION 4 - STRUCTURAL CONCRETE

4.01 DESCRIPTION

This section covers all poured-in-place concrete and non-shrink grouting for the following parts of this project.

- A. New concrete footings for shade shelter columns.
- B. Non-shrink grout pads below column base plates.

4.02 GENERAL

Concrete proportioning, nuxmg, transporting, forming, placing, curing, and other construction methods shall conform to all applicable specifications contained in Section 03310 of the Montana Public Works Standard Specifications, current edition.

4.03 CONCRETE CLASSIFICATION AND SPECIFICATIONS

All poured-in-place concrete shall be Class M-4000. Concrete mixes and strengths shall meet the following requirements:

Minimum 7-day lab strength -----	,800 psi
Minimum 28-day lab strength -----	,000 psi
Maximum aggregate size -----	3/4"
Maximum water to cement ratio -----	6 gal./sack (.50 by weight)
Slump range-----	1-1/2" to 4" maximum
Entrained air content-----	4% to 7%

4.04 NON-SHRINK GROUT

Where non-shrink grout is shown on the plans, provide 1107 Advantage Grout as manufactured by Dayton Superior, or equal. This product is furnished in 50# bags and is available from all Macon Supply centers in Montana.

4.05 MIXING AND PLACING NON-SHRINK GROUT

This product shall be mixed and placed as a dry-pack mortar using the recommended proportion of mix water. Grout shall be mixed, placed, and cured in accordance with the manufacturer's written instructions. Slope exposed edges as shown on the plans.

4.06 CONCRETE FINISHES AND CURING

- A. **Foundation Elements** - Float finish tops of concrete footings.

4.07 CONCRETE SAMPLING AND TESTING

- A. Concrete sampling and testing will be required. The actual sampling and testing will be done by an independent testing lab.
- B. The following concrete sampling and testing applies for this project:
 - 1. One (1) sample per pour - test for slump and air content.
 - 2. Make three (3) cylinders for lab compressive testing.
 - 3. Break one (1) cylinder at 7 days.
 - 4. Break two (2) cylinders at 28 days.
 - 5. Send all test reports to Owner within 2 days.
- C. Costs for Concrete Sampling and Testing - The Contractor will be required to pay for concrete sampling and testing as specified above.

4.08 REFERENCE DRAWINGS

Drawings S2 and S4.

End of Section

SECTION 5 - REINFORCING STEEL AND ANCHOR BOLTS AND RODS

5.01 DESCRIPTION

This section covers furnishing and placing all concrete reinforcing steel of the quantity type, and size shown in the drawings and all requirements as specified herein. It also covers anchor bolts and threaded rods placed in the concrete foundations.

5.02 GENERAL

Materials and workmanship for furnishing and placing reinforcing steel shall meet all applicable requirements of Section 03210 of the Montana Public Works Specification, current edition.

5.03 MATERIALS

All material used in this work shall be new and shall meet the following requirements:

- A **Reinforcing Steel** - Reinforcing steel shall be of the deformed type and shall meet the requirements of ASTM A-615, Grade 60 or Grade 40.
- B. **Anchor Bolts** - **36 KSI** Minimum yield point steel bolts. Use threaded rods where shown or noted on the drawings. Rods may have a plated metal finish.

5.04 INSTALLATION REQUIREMENTS

- A **Reinforcing Steel** - Reinforcing steel shall be accurately placed as detailed on the project drawings, bent and lapped as shown, and securely tied before concrete is poured. Masonry blocks and steel chairs shall be used if necessary, to assure accurate placement and bars shall be wire-tied at all intersections and lapped bar locations.
- B. **Threaded Rods** - Drill holes 1 / 8" larger than rods to depth shown. Blow holes clean and epoxy grout rods. Use a 2-part epoxy such as Fastenal Propoxy 300, or equal. Holes shall be cleaned using high pressure compressed air and a tube that reaches to the bottom of each hole. Use a bottle brush to thoroughly remove all concrete particles and dust. Blow holes out twice, once after each brushing.

5.05 REFERENCE DRAWINGS

Drawings S2 and S8.

End of Section

SECTION 6 - STRUCTURAL STEEL AND BOLTS

6.01 DESCRIPTION

This section of the specifications covers furnishing and installing structural steel and bolted connections as follows:

- A. Shop fabricated steel columns, splice plates, brackets and associated welded and bolted connections as shown on the drawings and/ or specified herein.

The Contractor shall furnish and install all items of steel and metal work required for or incidental to completion of the work. The Contractor alone shall be responsible for all errors of fabrication and/ or installation for the correct fitting of all items.

6.02 MATERIALS SPECIFICATIONS

Materials shall meet the following standards and specifications:

- A. **Rolled Steel Shapes** - ASTM A-992 having a minimum $F_y = 36$ KSI.
- B. **Bolts for Steel Connections** - Standard Hex Head Bolts - Minimum 36 KSI yield point strength. Furnish with lock washers and hex head nuts. Furnish carriage bolts with nuts and lock washers where noted.
- C. Lag Screws (Bolts) - Furnish and fit with flat washers.
- D. Finish - Plated or black metal.

6.03 STANDARDS AND CODES

The following specifications and codes apply to materials, fabrication, and installation of steel and metals for this project.

- A. ASTM Standards as applicable.
- B. AISC Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings.
- C. AWS Code for Welding in Building Construction.

6.04 FABRICATION AND INSTALLATION

Fabrication and installation work shall conform to all applicable requirements of the codes standards and specifications referred to in Article 6.04 of this Section and to the details and notes on the drawings. Work shall be true to detail with clean, straight, sharply defined lines. Metals shall have smooth finished surfaces where exposed. Weld joints of steel framing to make a strong, rigid assembly. Additional welding beyond that detailed on the drawings will be done if necessary to secure all components. Dress exposed faces of welds flush and smooth. All field welding shall be done by competent, qualified welders with proven experience in the trade.

6.05 INSTALLATION OF LAG SCREWS (Bolts)

Lag screws shall not be installed without pre-drilling pilot holes for the threaded part of the screws and holes matching the shank diameter to the shank depth only. Pilot holes shall be 1/4" diameter for 3/8" lag screws and 5/16" diameter for 1/2" lag screws. Fit all lag screws with flatwashers when installed.

6.06 SHOP PAINT

Apply **one (1) shop coat** of zinc oxide oil primer or other approved shop paint to structural steel and welded steel parts before delivery to job site. No shop paint shall be applied to areas to be field welded or encased in concrete. Remove all dirt, rust, and mill scale and other substances before painting.

6.07 REFERENCE DRAWINGS

Sheets No. S2, SS, S6, S7, and S8.

End of
Section

SECTION 7 - WOOD PRODUCTS AND CONSTRUCTION

7.01 DESCRIPTION

This section of the Specifications covers furnishing and installing the following items for the project.

- A Structural framing lumber for shade shelter roof and columns.
- B. Boards for roof sheathing and gable ends.
- C. Framing lumber and planks for seating benches and backrests.
- D. Wood fasteners.

7.02 MATERIALS

Wood products for the above items shall conform to the following requirements contained in current West Coast Lumber Bureau (WCLB) standards or equivalent local building codes.

A Lumber Grades and Species - Lumber shall conform to the following requirements for grade, species, and finish.

- A. **Lumber for shade shelter framing** - Douglas fir, rough cut to full dimensions shown on the drawings. Quality must meet WCLB requirements for No. 1 or better.
- B. **1" Rough lumber for roof, gable ends, and trim** - Rough cut Douglas fir sawed to full dimension. WCLB "construction" grade. All trim- 4" width; Gable ends - 6" width; Roof - Random widths from 6"min. to 10" max.
- C. **Lumber for bench seats and backrests** - Dressed commercial lumber surfaced four sides (S4S) and sanded. **Selected structural** fir-larch or Douglas fir.

B. General Requirements for Rough Cut Lumber - Rough cut lumber for this project may be unseasoned lumber produced by a local sawmill and need not be grade stamped. However, if the quality of any products is questionable, the herein specified grading rules may be applied and defective products will be rejected.

7.03 STANDARDS

A Lumber Grades shall comply with the current standard grading rules of the West Coast Lumber Inspection Bureau or Western Wood Products Association.

7.04 WORKMANSHIP

General - Carpentry shall be done in a professional method with all wood members properly cut and joined in the manner shown on the drawings. Lumber shall be furnished slightly over length to allow for field fitting and trimming. Elements shall be constructed to be plumb and true to the alignments and dimensions as planned.

Fastenings - Install metal fasteners of the type and at the locations shown on the drawings. Nailed and screwed connections shall be as detailed or specified herein. Where fastenings are not specifically noted on the drawings, install fastenings consistent with normal methods and standards for the trade and meet minimum requirements contained in the International Building Code, current edition.

7.05 SPECIFIC FASTENING REQUIREMENTS FOR THIS PROJECT

A. Exterior bronze ceramic coated screws (by Powerpro or equal). These screws shall be used for the following fastenings.

1. 1" Roof lumber to 2"x 6" framing lumber under eaves - 2" screws.
2. 1"x 6" boards to gable end framing - 2" screws.
3. 1"x 4" rough cut trim boards to support members - 2" screws.
4. Seating planks to support framing and back rest construction - 2-1/2" screws.

B. Sinker Nails - use 10d sinker nails to fasten 1" rough cut roof boards to purlins and blocking.

7.06 REFERENCE DRAWINGS

Sheet number S2, S5, S6, S7, and S8.

End of
Section

SECTION 10 - FINAL CLEANUP

10.01 DESCRIPTION

A. This work consists of final cleanup of the project site prior to final acceptance.

10.2 EXECUTION

CONTRACTOR RESPONSIBILITIES

The contractor shall be responsible for final cleanup at the end of the project to a level satisfactory to the Owner. All construction debris, no matter how small, shall be collected and removed from the site. All wheel ruts shall be filled in and be leveled to match the adjacent grade and material. Reseeding or other resurfacing may be necessary to repair any construction related impacts or damage.

All survey markings, stakes, temporary paint marks, flagging and other devices shall be removed regardless of who installed them. All excess concrete, gravel, soil, or other construction materials not intended for permanent use shall be removed.

All final slopes shall be dressed manually to remove woody debris accumulated trash and oversized material. Any new slope or topsoil surfaces shall be hand raked to provide a uniform appearance. All construction related temporary sediment control devices shall be removed as soon as practical.

10.03 PAYMENT

All final cleanup work shall be incidental to other work items in the contract and no separate payment shall be made for final cleanup.

End of Section

SECTION 9 - PAINTING AND FINISHING

9.01 DESCRIPTION

- A. This section of the Specifications covers painting and other preparations and wood finishes for the following:
1. Exposed wood and metal surfaces for the main support frames, purlins, blocking, bottom sides of roof boards, secondary framing and both sides of gable ends and trim boards.
 2. Bench seats, backrests, and wood furred column surfaces.

9.02 GENERAL

- A. The intent of finish applications for painting the wood and metal surfaces of the items listed in 9.01 A 1 above is to match the paint mixtures and color schemes used on the park's upper visitor center and lower group use pavilion.
- B. The intent for finishes on the seating benches and backrests is to provide a durable, transparent coating, and the intent for the rough lumber column furring is to provide a clear, durable surface sealer.

9.03 MATERIALS AND PAINT COLORS FOR 9.02 A

Paint product specifications and color formulas will be provided by an Owner's representative at the project pre-bid meeting scheduled for February 13, 2020.

COLOR SCHEME: All exposed wood and metal portions of the main support frames, purlins, blocking, and all exposed surfaces of the 1x4" trim boards for the roof shall receive the dark brown colored product.

The cream-colored paint product shall be applied to the following wood surfaces:

1. Insides, bottom edges, and outsides of 1"x 6" rough cut boards used on the gable ends.
2. Bottom sides of 1" boards used on the roof.
3. Exposed surfaces of secondary framing members inside the shelter roof structure including the rough cut 2"x 6"s used at the eaves and gable ends.

9.04 MATERIALS FOR 9.02 B

- A Tops and exposed vertical and sloping surfaces of bench seats and backrests shall receive 2 coats of semigloss clear Aqua Master Varnish by Rodda Paint, or approved equal.
- B. The exposed surfaces of the 2" rough cut furring around the columns as well as the 1"x 4" trim boards at the column bases shall receive 1 coat of Rural Manor semi-transparent exterior stain, or equal.

9.05 PRIME COATINGS

- A Bolt heads, nuts, and washers shall receive a prime coating of red or grey sprayed on primer before finished paint coatings are applied.
- B. All steel angle brackets, plates, and other fabricated steel will receive a shop primer as outlined in Sec. 6.06.
- C. Wood surfaces will not receive a prime coating.

9.06 WORKMANSHIP

All surfaces to receive a coating shall be clean and free of moisture or any other substances that would prevent good adhesion. Indents where recessed screws are placed shall be filled with an exterior caulking that matches the wood color before a transparent finish is applied. Air temperatures shall be within the suitable range recommended for the products to be applied. All work shall be done in a professional manner consistent with the highest standards for the trade.

9.07 REFERENCE DRAWINGS

Sheets S1, S2, S3, and S8

End of Section

SECTION 10 - FINAL CLEANUP

10.01 DESCRIPTION

A. This work consists of final cleanup of the project site prior to final acceptance.

10.2 EXECUTION

CONTRACTOR RESPONSIBILITIES

The contractor shall be responsible for final cleanup at the end of the project to a level satisfactory to the Owner. All construction debris, no matter how small, shall be collected and removed from the site. All wheel ruts shall be filled in and be leveled to match the adjacent grade and material. Reseeding or other resurfacing may be necessary to repair any construction related impacts or damage.

All survey markings, stakes, temporary paint marks, flagging and other devices shall be removed regardless of who installed them. All excess concrete, gravel, soil, or other construction materials not intended for permanent use shall be removed.

All final slopes shall be dressed manually to remove woody debris accumulated trash and oversized material. Any new slope or topsoil surfaces shall be hand raked to provide a uniform appearance. All construction related temporary sediment control devices shall be removed as soon as practical.

10.03 PAYMENT

All final cleanup work shall be incidental to other work items in the contract and no separate payment shall be made for final cleanup.

End of Section