

Montana Fish, Wildlife & Parks

SPECIFICATIONS FOR WORK
SPECIAL PROVISIONS

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1. PROJECT DESCRIPTION

The Project involves construction work associated with:

Intake Fishing Access Site (FAS) 2022 Water System

Project # 7153750

Located near Intake, Dawson County, MT

The project generally includes but is not specifically limited to: constructing a new water distribution system to connect to a previously permitted potable water well (MDEQ permit number 18-1942). The proposed distribution system consists of approximately 2,200 feet of 2-inch DR 13.5 HDPE, multiple curb stops, and six frost-free hydrants. The Project is meant to replace the existing potable well (circa 1991 [located on land not owned by MFWP]) and smaller distribution system that only serves a portion of the Intake FAS.

Project contacts are designated as follows:

Owner:	Montana Fish, Wildlife, and Parks PO Box 200701 Helena, MT 59620-0701
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FWP Project Representative:	Thomas M. Mannatt FWP Project Manager 1522 9 th Avenue Helena, MT 59601 406-841-4006 (wk) 406-841-4004 (fax)
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2. 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.

3. 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.

4. 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.

4.1 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. FWP reserves the right to set preliminary construction staking for the project. The Contractor is responsible to notify FWP 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.

4.2 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.

5. 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.

6. 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.

7. 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 their 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.

- 7.1 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.

- 7.2 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).

- 7.3 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.
- 7.4 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.
- 7.5 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.

- 7.6 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.
- 7.7 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.
- 7.8 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.
- 7.9 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.
- 7.10 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.
- 7.11 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.
- 7.12 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.

8. 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.

9. CONSTRUCTION LIMITS AND AREAS OF DISTURBANCE

- 9.1 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.
- 9.2 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.

10. DECONTAMINATE CONSTRUCTION EQUIPMENT

Power wash all construction equipment entering the project site to prevent the spread of noxious weeds and aquatic invasive species. This applies to all FWP projects, whether or not individual construction permits specifically address cleaning of equipment.

11. 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.

12. 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, after the Engineer's set of staking described in Section 01050. 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 is 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.

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.

13. MATERIAL SOURCES AND CONSTRUCTION WATER

The Contractor shall be responsible for locating all necessary material sources, including aggregates, earthen borrow and 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 efforts shall be supplied by the Contractor.

14. 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.

15. 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.

16. STAGING AND STOCKPILING AREA

Contractor shall use staging and stockpiling sites 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.

17. 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.

18. 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.

19. ACCESS DURING CONSTRUCTION

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

20. 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.

21. SANITARY FACILITIES

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

22. 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.

23. MEASUREMENT AND PAYMENT

Review these Contract Documents for additional Measurement and Payment specifications for definitions. Quantities are listed on the Bid Proposal for Payment Items. Additional material quantities, volumes, and measurements may be shown on the Contract Document drawings and/or specifications.

Unit Price quantities and measurements shown on the Bid Proposal are for bidding and contract purpose only. Quantities and measurements supplied, completed for the project, and verified by the Project Representative shall determine payment. Each unit price will be deemed to include an amount considered by the Contractor to be adequate to cover Contractor's overhead and profit for each bid item.

The Owner or Contractor may make a Claim for an adjustment in Contract Unit Price if the quantity of any item of Unit Price Work performed by the Contractor differs materially and/or significantly (increase or decrease by 50%) from the estimated quantity indicated on the Bid Proposal.

Lump sum bid item quantities will not be measured. Payment for these lump sum bid proposal items will be paid in full amount listed on the Bid Proposal when accepted by the Project Representative, unless specified otherwise.

Montana Fish, Wildlife & Parks

**SPECIFICATIONS FOR WORK
TECHNICAL PROVISIONS**

Incorporation of Montana Public Works Technical Specifications.

The Technical Specifications as found in Montana Public Works Standard Specifications (MPWSS), Seventh Edition, April 2021 and/or current Addendums or Revisions; are hereby incorporated by reference and made a part of this Contract:

Incorporation of Montana Fish, Wildlife & Parks Technical Specifications and Modifications to MPWSS Technical Specifications.

In addition to the MPWSS Technical Specifications are the following Montana Fish, Wildlife & Parks Technical Specifications (modifications to MPWSS Technical Specifications).

- SECTION 01050 - Field Engineering
- SECTION 01450 - Mobilization/Demobilization
- SECTION 01750 - Final Cleanup
- SECTION 02112 - Removal Of Existing Pavement, Concrete Curb, Sidewalk,
Driveway And/Or Structures
- SECTION 02230 - Street Excavation, Backfill, and Compaction
- SECTION 02516 - Frost- Proof Hydrant
- SECTION 02665 - Water Systems
- SECTION 02910- Revegetation
- SPECIAL PROVISIONS

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

1.1 CONSTRUCTION SURVEY

- A. Engineer will provide survey control (northing/easting), benchmarks(vertical datum), and grade stakes for all designed alignments and profiles, as shown on the project Plans. Engineer will provide one set of stakes prior to the construction of the various project elements, and one set of follow-up stakes during the construction of the project. The Contractor shall notify the Engineer 72 hours in advance that the site has been prepared and staking is needed to start construction.
- B. Contractor shall perform all additional surveying, staking, recording of data, and calculations as necessary to construct the project from the initial layout to final completion. Reset stakes as many times as necessary to construct the work.
- C. The Engineer will set stakes and key geometric points and described above in item A. The contractor shall set reference stakes, based on the Engineer's stakes as necessary to construct the work.

PART 4 MEASUREMENT AND PAYMENT

- A. Construction Surveying is incidental to the work and no separate payment is made for this item.

END OF SECTION 01050

SECTION 01450

MOBILIZATION/DEMOBILIZATION

PART 1 GENERAL

1.1 DESCRIPTION

- A. This item shall consist of the preparatory 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

- B. Partial payments for mobilization/demobilization will be made based on the lump sum bid price as follows:
 - 25% of the amount bid for mobilization/demobilization when the Contractor has moved on-site and begun construction activities.
 - 50% of the amount bid for mobilization/demobilization when 25% of the contract amount (exclusive mobilization/demobilization) has been completed.

- 75% of the amount bid for mobilization/demobilization when 50% of the contract amount (exclusive mobilization/demobilization) has been completed.
- 100% of the amount bid for mobilization/demobilization when 75% of the contract amount (exclusive mobilization/demobilization) has been completed.

END OF SECTION 01450

SECTION 01750

FINAL CLEANUP

PART 1 GENERAL

1.1 DESCRIPTION

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

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 CONTRACTOR RESPONSIBILITIES

The Contractor shall be responsible for final clean up 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. Re-seeding or re-sodding, or other re-surfacing may be necessary to repair any construction related impacts or damage.

All survey markings set as control points and boundary corners shall not be disturbed. If the contractor encounters a control point or boundary corner and it is in the way of construction it shall be brought to the attention of the FWP project representative so that it can be avoided or properly preserved. The Project surveyor shall identify control points, whenever possible, with a marking/point to be saved.

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. The contractor shall dress all gravel, pavement and concrete edges to eliminate abrupt edges and provide a smooth transition. All construction related temporary sediment control devices shall be removed as soon as practical.

PART 4 MEASUREMENT AND PAYMENT

4.1 PAYMENT

Unless specifically noted otherwise, all final cleanup work shall be incidental to other work items in the contract and no separate payment shall be made.

END OF SECTION 01750

SECTION 02112

REMOVAL OF EXISTING PAVEMENT, CONCRETE CURB, SIDEWALK, DRIVEWAY AND/OR STRUCTURES

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

Add the following:

D. Remove and dispose of all existing frost-proof hydrants specified on the Drawings or as directed by the Engineer. Care shall be exercised in such removal to assure that adjacent facilities or structures, which are to remain, shall not be disturbed.

PART 4 MEASUREMENT AND PAYMENT

Add the following:

4.5 REMOVE EXISTING HYDRANTS

- A. This item shall be measured by the numerical count of existing frost-proof hydrants removed.
- B. Payment shall include all excavation and backfill, removing the existing frost-proof hydrant, all labor and all other work necessary or incidental for completion of the item.

END OF SECTION 02112

SECTION 02230

STREET EXCAVATION, BACKFILL AND COMPACTION

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

PART 1 GENERAL

1.3 DENSITY CONTROL TESTING

A. FIELD DENSITY TESTING

Delete this section and add the following:

In-place field density tests for quality assurance are at Contractor's expense meeting AASHTO T238 (ASTM D2922) and AASHTO T239 (ASTM D3017), Nuclear Densometer Methods. Quality assurance field density testing frequency is once per compacted lift, or as directed by Engineer.

Retesting of failing areas is at the expense of the Contractor.

B. LABORATORY MAXIMUM DENSITY and OPTIMUM MOISTURE

Delete this section and add the following:

Quality assurance tests will be made by the Contractor's independent testing laboratory for each on-site natural soil or each source of off-site material, including borrow material, to determine the laboratory maximum density values and optimum compaction moisture content under AASHTO T99 or ASTM D698.

PART 3 EXECUTION

3.1 CLEARING AND GRUBBING

Add the following:

Obtain necessary burning permits if cleared and grubbed material is burned on site. All stumps within construction limits shall be grubbed under this contract.

During the clearing and grubbing portion of the work the contractor shall stockpile sufficient desirable topsoil material for constructing the proposed landscape mounds as shown on the Plans.

3.4 EXCAVATION

Add the following:

Sheeting, Shoring, and Bracing: Except where trench banks are cut back on a stable slope, provide and maintain all sheeting, shoring, and bracing necessary to protect workers, and to protect adjoining grades and structures from caving, sliding, erosion or other damage in accordance with Occupational Safety and Health Standards (29 CFR Part 1926 - Construction Standards for Excavations), the Site Specific Health and Safety Plan, and other applicable codes and governing authorities.

PART 4 MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT AND PAYMENT

Delete this section and add the following:

A. CLEARING AND GRUBBING

1. Clearing and grubbing will not be measured for payment and is considered incidental to other work items in this Contract.

B. EXCAVATION AND EMBANKMENT

1. Excavation and embankment will not be measured for payment and is considered incidental to other work items in this Contract

END OF SECTION 02230

SECTION 02516

FROST-PROOF HYDRANT

PART 1 - GENERAL

1.1 SUMMARY

- A. This section specifies the construction and installation of frost-proof hydrants.
- B. Related sections
- C. 01750 - Final Cleanup
- D. 02230 - Street Excavation, Backfill and Compaction
- E. 02600 - Water Distribution
- F. 02665 - Water Systems
- G. 02910 - Revegetation

1.2 RELATED SECTIONS

- A. 01750 - Final Cleanup
- B. 02230 - Street Excavation, Backfill and Compaction
- C. 02600 - Water Distribution
- D. 02665 - Water Systems
- E. 02910 - Revegetation

1.3 SUBMITTALS

- A. Submit sufficient descriptive literature to demonstrate compliance with these specifications.
- B. All products shall conform to the most recent AWWA and ANSI/NSF standards.
- C. All products shall be lead-free and drinking water safe.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Frost-proof Hydrant.
 - 1. Simmons Freeze Flow Sanitary Yard Hydrant, Merrill NA-9000, Woodford Model Y34, or approved equal with internal drain-to-ground and siphon purge drain backflow preventer. Hydrant shall be capable of delivering 20 gallons per minute at 60 pounds per square inch. Hydrant shall have vacuum breaker on nozzle. Bury depth shall be 6'-0" Min.
- B. Nozzle.
 - 1. Threaded with vacuum breaker.
- C. Drain Rock.
 - 1. Round washed gravel, ASTM D448 (AASHTO M 43), Size number 6.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install the frost-proof hydrant at the location shown on the Drawings and according to the manufacturer's recommended installation procedures.

- B. Set the hydrant vertical and at the depth noted in these specifications. Provide hydrant support at the bottom with a concrete block.
 - 1. Drain Tube.
 - a. Before installation, ensure that the 1/4 inch copper drain tube is plumbed vertical and leak tight at the connection to the base of the standpipe.
 - 2. Check drain tube for operation before backfilling by closing hydrant after full flow operation and watching for water to drain out of copper drain tube.
- C. The installed frost-proof hydrants shall be disinfected and pressure tested per Specification Section 02665 - Water Systems.
- D. Install fill station at location and according to the details shown on the Drawings.

PART 4 - MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Measurement will be for each complete Frost-proof Hydrant installed complete including 5 feet of connecting galvanized steel pipe from the standpipe base and fill station.

4.2 BASIS OF PAYMENT

- A. Payment will be at the Contract unit price for each item accepted.

END OF SECTION 02516

**SECTION 02665
WATER SYSTEMS**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Furnishing and Installing Contractor-furnished labor and materials to complete a potable water system and assemblies as shown on the drawings and specified herein.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):

ASTM A 53 REV A-89	Pipe, Steel, Black and Hot-Dipped Zinc-Coated Welded and Seamless
ASTM D 1784-81	Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
ASTM D 1785-89	Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120. Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SOR Series)
ASTM D 2241-89	Socket-Type Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
ASTM D 2466-89	Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
ASTM D 2467-89	Socket-Type Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
ASTM D 2564-88	Solvent Cements for Poly (Vinyl Chloride) (PVC)
ASTM D 2672-89	Plastic Pipe and Fittings Joints for IPS PVC Pipe Using Solvent Cement
ASTM D 2774-72	Underground Installation of Thermoplastic Pressure Piping (R 1983) Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings
ASTM D 2855-83	Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
ASTM F 656 REV A-89	Specification for Threaded Couplings, Steel, Black or Zinc-Coated (Galvanized) Welded or Seamless, for Use in Steel Pipe Joints
ASTM A53/A53M-99B	Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

- B. American Water Works Association (AWWA)

AWWA 651	Standard for Disinfection & Testing
AWWA A100	Water Wells
AWWA C901-20	Polyethylene (PE) Pressure Pipe and Tubing, 3/4 In. (19 mm) Through 3 In. (76 mm), for Water Service

1.3 SUBMITTALS

- A. Manufacturer's Literature: Submit 1 copy of the manufacturer's descriptive data including the manufacturer's list number for valves to be used on this project.
- B. Certificates of Conformance: Submit 1 copy of written certification from the supplier of the Contractor-furnished pipe to be used on this project that it conforms to the requirements of this specification section.
- C. All products shall conform to the most recent AWWA and ANSI/NSF standards.
- D. All products shall be lead-free and drinking water safe.

1.4 QUALITY ASSURANCE

- A. Failure Criteria: Not limited to the following:
 - 1. Evidence of leakage
 - 2. Evidence of breakage of pipe
 - 3. Malfunctioning valves
 - 4. Blockage of piping
 - 5. Contamination of water, rendering it not usable
 - 6. Pressure drops
- B. Labeling Requirements:
 - 1. The factory labels shall remain fixed on "all" the materials, fittings, and devices. Any materials, fittings, or devices that are missing legible factory labels will be considered unidentifiable and not suitable for use on this project. The materials shall be removed from the site at the Contractor's expense.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Storage: Store materials and equipment according to the manufacturer's instructions. Store plastic piping under cover out of direct sunlight.

PART 2 PRODUCTS

2.1 CONTRACTOR-FURNISHED MATERIALS

- A. Pipe and Fittings: Pipe size, type and ratings shall be as shown on the Work Data Sheet and drawings or as specified. Unless specified, fittings shall be the same size as the adjoining pipeline except where reducers are required to enter a valve body or reduce to another pipe size. Fitting pressure ratings shall be equal to or greater than the rating for the adjoining pipeline size. Pipe and fittings shall be manufactured of material approved by NSF for potable water systems.
 - 1. HDPE Pipe: HDPE DR 13.5, 2.0" Diameter.
 - 2. Contractor shall use heat fused butt welded HDPE. Contractor must provide submittals to substantiate performance for approval. This will require that the

manufacture provide a certification of compliance with respect to all physical properties of the HDPE pipe.

- a. The Contractor shall submit manufactures certifications and specifications detailing that the proposed product will perform with adequate reliability.
 - b. The Contractor shall be responsible for adapting the HDPE pipe to all required metal pipe, valves, and devices.
 - c. All joints must be heat fused; internal sleeves and mechanically fastened joints will be unacceptable.
- K. Curb Stop Valve: Mueller H-10287 or equal with these features: 1-1/2 inch and 2-inch diameter O-ring type valve, 1/4 turn check, 175 psi working pressure, Minneapolis top threads. The body, tee-head and stem shall be made of brass or bronze. No drain ports.
- L. Curb Stop Valve W/Drain: Mueller H-10288 or equal with these features: One-inch diameter O-ring type valve, I.P. threaded inlet and outlet, 1/4 turn check, 175 psi working pressure,
- M. Curb Box: Ford or equal, with these features: telescoping type, cast iron and steel construction, brass pentagon head plug, Minneapolis pattern base, 66-inch minimum length stationary shut-off rod, asphalt base coating. The curb box shall be compatible with curb stop valves described herein. The curb box shall extend 4 inches above ground surface when attached to valve buried at pipe depth shown on Work Data Sheet. Note the threads shall be such that they screw onto curb stop as per manufacture's specifications.
- N. Curb Box Key: Shall have a minimum length of 18 inches. Tee handles type, for removing the pentagon plug and operating stationary shut-off-rod. Compatible with curb boxes described herein.
- O. Sump Gravel: Gravel shall be 1/2 inch to 3/4 inch and shall be washed free of all fines under 1/2 inch in size.
- P. Wood Fence Posts: Posts shall be straight, single stem and sound.

PART 3 EXECUTION

3.1 PREPARATION

- A. Clearing and Grubbing: Shall be according to Section titled - Street Excavation, Backfill, and Compaction.
- B. Excavation and Backfill: Shall be according to Section titled - Street Excavation, Backfill and Compaction.

3.2 INSTALLATION

- A. General: Interior of the pipe shall be kept clean. The pipe shall not be covered until the pressure tests have been approved.

- B. The ends of the pipe shall be covered during the progress of the work to keep the interior of the pipe clean.
- C. Thread Compound: Thread Compound used shall be suitable for potable water systems.
- D. Bedding: Shall be according to Section titled - Street Excavation, Backfilling and Compacting.
- E. Assemblies: Refer to the drawings for locations of all assemblies. All pipe and fittings in assemblies shall be the same size as the adjoining pipeline except where otherwise specified or where reducers are needed to enter a valve body.
- F. Curb Stop Valve Assembly: Install curb stop valve, curb box, stationary rod, slip-to-thread adapters and reducers if required. Each curb stop requires a 6" long brass or stainless-steel nipple on each side. No Male threads shall be used at the assembly.
- G. Curb Stop Valve w/Drain Assembly: Install curb stop valve w/drain, a one cubic foot gravel sump with 6 mil polyethylene covering, curb box, stationary rod, slip-to-thread adapters, reducer and valve box. Each curb stop requires a 6" long brass or stainless-steel nipple on each side.
- H. All materials must be installed per AWWA standards and manufacturer's recommendations.

3.3 FIELD QUALITY CONTROL

- 1. General: It is the Contractor's responsibility to perform all required tests. The Contractor shall supply and temporarily install a gauge on each portion of pipeline being pressure tested, to monitor any pressure drop during the test. The four-hour pressure tests, before backfill shall be performed immediately when a segment as detailed by the Contractor's work schedule, is completed and flushed. The flow tests shall be done before backfilling.
- A. Pressure and Leak Testing Procedure shall be in accordance with AWWA Standards.

Tests shall be conducted as follows:

- 1. The presence of the Contracting Officer or his representative is not required at the first pressure test. The portion to be tested shall be pressurized to the maximum operating pressure. Fill and flush the line being tested to eliminate air from the line. Do not fill the pipe at a rate greater than 1 ft. per second. Correct all deficiencies evident during this test and repeat the test.
- 2. For the second pressure test, the Contractor shall notify the Contracting Officer 24 hours prior to testing. The State or their representative shall witness this test. Failure to notify the State shall result in a repeat of the test even if that requires re-excavation of the portion being tested. The portion being tested shall be pressurized to maximum operating pressure. Do not fill the pipe at a rate greater than 1 foot per second. The pressure shall be held for a minimum of 4 hours; then inspected for failure criteria. Failure shall be considered a pressure drop in excess of 5 PSI over the 4-hour test. Correct deficiencies evident during the test and repeat the test until approved. After approval, the Contractor shall perform the flow test.

3. In the event water enters the trench, and pressure testing with water indicates a leak which cannot be visibly or otherwise located for repair, the Contractor shall at his option; either dewater the trench or air test the line. When the line has been repaired, repeat the 4-hour water test.

B. Final Test: A final test shall be conducted on the total system after completion of backfilling. Pressurize the system in accordance with 3.3.B. The pressure shall be maintained for a period of 24 hours; then the system will be inspected for failure criteria.

3.4 DISINFECTION

Disinfection shall be in accordance with AWWA Standard 651.

A. New potable water piping shall be disinfected prior to use.

B. Prior to disinfection, the system shall be flushed with clean water until no dirty water appears at points of outlet.

C. The system shall be filled with a water-chlorine solution containing at least 50 mg per liter of chlorine and then valved off and allowed to stand for 24 hours; or the system shall be filled with a water-chlorine solution containing at least 200 mg per liter of chlorine and then valved off and allowed to stand for 3 hours.

D. Following the allowed standing period, the system shall be flushed with clean water until no chlorine remains in the water flushing from the system. Chlorinated water shall be hauled to a permitted facility for disposal and shall not be discharged into the Yellowstone River or on-site latrines.

E. Supplier shall then make bacteriological examination. If contamination is still shown in the system, this disinfection procedure and bacteriological examination shall be repeated until no contamination remains in the system.

3.5 SEPARATION WITH SEWERS

A. Water mains must be laid at least 10 feet horizontally from any existing or proposed gravity sanitary or storm sewer, septic tank, or subsoil treatment system. The distance must be measured edge-to-edge.

B. Water mains crossing gravity sanitary or storm sewers must be laid with a minimum vertical separation distance of 18 inches between the outside of the water main and the outside of the sewer. This must be the case where the water main is either above or below the sewer. The crossing must be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support must be provided for the sewer to maintain line and grade and to prevent damage to the water main.

C. If the proper vertical separation as described above cannot be obtained, the crossings must comply with the following:

1. Vertical separation at crossings between water and sewer mains must be at least six inches.
2. Sewers must be constructed of slip-on or mechanical joint pipe complying with public water supply design standards and be pressure tested to a minimum of 150 psi to assume watertightness.
3. At crossings, one standard length of new pipe must be centered at approximately a 90-degree angle in respect to the existing pipe.
4. Sewer services utilizing in-line fittings and extending to the property lines, or beyond, must be installed and tested within 10 feet of the crossing. Saddles are not acceptable.
5. Either the water or sewer main must be encased in a watertight carrier pipe which extends 10 feet on both sides of the crossing or the mains must be encased in a minimum of six inches of flowable fill for a minimum of 10 feet on each side of the crossing pipes. If the minimum six-inch separation is not viable, the water line must be relocated and vertical separation at crossings between water and sewer mains must be at least 18 inches.

- D. No unprotected cross-connections may exist between the distribution system and any pipes, pumps, hydrants, or tanks whereby unsafe water or other contaminating materials may be discharged or drawn into the system. Cross-connections must be eliminated in conformance with ARM Title 17, chapter 38, subchapter 3 for public systems.

3.6 ABANDONMENT OF EXISTING MAINS

- A. Mains must be abandoned in a manner to prevent cross-connections and must be entirely or partially removed to prevent future connection to the abandoned main.

PART 4 MEASUREMENT AND PAYMENT

4.1 WATER LINE

- A. Measurement of water line shall be made in lineal feet along the centerline of pipe through all valves, fittings, and appurtenances.
- B. Payment for water mains will be made at the contract unit price bid, which price shall include furnishing and installing pipe, all excavation, backfill, and compaction, and other work necessary or incidental for completion of the item.

4.2 FITTINGS

- A. Measurement of water main fittings will be by numerical count of the types and sizes listed in the Bid Proposal.
- B. Payment for fittings will be made at the contract unit price bid for each fitting, which price shall include furnishing and installing the fittings as required, thrust blocking and any other work necessary or incidental for completion of the item.

4.3 CURB STOPS

- A. Measurement for this item will be by numerical count for payment determined by the actual number of each (EA) curb stop / box furnished and installed.
- B. Payment for curb stops will be made at the contract unit price bid for each unit, which price shall include furnishing and installing the curb stop as required, and any other work necessary or incidental for completion of the item.

4.4 CONNECT TO EXISTING 2" WATERLINE

- A. This item shall be measured by numerical count of connections to existing water mains.
- B. Payment shall include all materials, equipment, tools, labor and other incidentals necessary to connect the new fittings to the existing water main.

END OF SECTION 02665

SECTION 02910

REVEGETATION

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

PART 1 GENERAL

1.1 DESCRIPTION

Add following:

This work also includes conserving, placing, and finishing topsoil placement at designated areas on the project drawings or as directed by the Engineer.

PART 2 PRODUCTS

2.1 SEED

Utilize the following seed mix for all areas to be seeded.

Seed Name	% Pure Live Seed	Lbs. Per Acre
Western Wheatgrass	30	*
Bluebunch Wheatgrass	20	*
Hard Fescue	20	*
Slender Wheatgrass	15	*
Green Needlegrass	15	*

* Drilled Rate = 25 lbs/acre, Broadcast and Hydroseed Rate = 50 lbs/acre

2.2 TOPSOIL

Add the following:

Utilize all salvaged topsoil conserved from clearing and grubbing operations to cover excavation and embankment slopes prior to fertilizing, seeding, or mulching.

2.4 FERTILIZER

Delete this Section.

PART 4 MEASUREMENT AND PAYMENT

4.1 GENERAL

A. Delete this Section and add the following:

Revegetation is measured by the square yard and paid for at the unit price bid including topsoil salvage and/or importing, topsoil placement, seedbed preparation, and seeding, complete in place and accepted by the Engineer.

END OF SECTION 02910