Montana Fish, Wildlife & Parks

GENERAL PROVISIONS
SPECIFICATIONS FOR WORK

Contents:

1. PROJECT DESCRIPTION

The Project involves construction work associated with:

Fresno Tailwaters FAS
Erosion Control
Fish, Wildlife & Parks (FWP) project # 7153740
Located in Hill County, MT

The project generally includes stabilizing an eroding bank along the Milk River. The project includes importing backfill material to fill an existing scour hole and excavating material from a mid-channel bar to use as backfill material. The project also includes lining the newly constructed bank with fabric and rip rap. Other incidentals include topsoil, seeding, diverting flows from work area, dewatering and compaction of fill materials.

2. PROJECT RELATED CONTACTS

Project contacts are designated as follows:

Owner:
Montana FWP
1420 E. Sixth Ave.
PO Box 200701
Helena, MT 59620-0701

FWP Project Representative:
Joseph Renenger
FWP Project Manager
1522 9th Avenue
Helena, MT 59620
406-841-4007 (wk)
406-439-9889 (cell)
406-841-4004 (fax)

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. 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.

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 Contractors 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 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.

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. This applies to all FWP projects, whether or not individual construction permits specifically address cleaning of equipment.

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 its 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. Slope stakes located at critical points as determined by the Project Representative.
2. Blue tops every longitudinally and transversely for subgrade and crushed base to verify finish grading of course.
3. Location and grade stakes for drainage features and retaining walls.
4. Location stakes for roadside safety items, permanent and temporary traffic control, and misc. items as determined by the Project Representative.

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 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.

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.

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.

20. ACCESS DURING CONSTRUCTION

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.

24. 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 sums 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), Sixth Edition, April 2010 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 01010 - Summary of Work
SECTION 01450 - Mobilization
SECTION 01750 - Final Cleanup
SECTION 01800 - Erosion and Sediment Control
SECTION 02110 - Geotextiles
SECTION 02207 - Aggregate Materials
SECTION 02240 - Rip Rap
SECTION 02910 - Revegetation

SECTION 01010 - SUMMARY OF WORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Owner and Contractor Responsibilities

B. Contractor use of site and premises.

C. Scope of Work

1.2 Owner and Contractor Responsibilities

A. Owners Responsibilities:

1. Responding to project questions.
2. Final acceptance and inspections.
3. Submittal and material review.
4. Permitting.

B. Contractors Responsibilities:

1. Quality control of work.
2. Completion of project as bid.
3. Coordination with FWP Personnel.
4. Quality assurance testing by independent testing agency

1.3 CONTRACTOR USE OF SITE

A. Limit use of site to allow:

1. Coordinate with FWP to limit public usage in work areas as necessary.

1.3 SCOPE OF WORK

A. Project Objective: Reclaim and permanently protect the eroded bank at Fresno Tailwaters FAS along the Milk River.

B. Scope of Work:

Work includes the following but is not limited to the general description contained herein:

1. Mobilization

- General: This bid item shall include the costs associated with mobilizing to the project site, insurance, bonding, permitting, and submittals.
- Work Included:
  - All labor, tools, equipment, materials, royalties, and incidentals needed to complete the work as specified;
  - Transport and set up all equipment, materials, and other items needed to complete the project;
  - All permits, coordination, and compliance inspections required for the work;
  - Installation of all BMP's and BMP plans;
  - Insurance and bonding;
  - Prepare and provide submittals, construction schedule, and all other paperwork required by the contract documents prior to construction startup.

- Measurement: No measurement shall be taken for this item.

- Payment: Payment shall be by the price bid for the lump sum bid item listed in the proposal on the schedule shown in Section 01450.

2. Furnish and Install Clean Fill

- General: This bid item shall include the costs associated with furnishing and installing clean fill in the scour hole.

- Work Included:
  - Furnishing fill material that meets requirements outlined in Section 02207;
  - Delivering, stockpiling, and handling of material to be installed according to plans;
  - Compaction of fill material to 95% standard proctor;
  - Dewatering or Watering as necessary to meet optimum moisture requirements for compaction;
  - Payment to independent testing agency for services outlined in Section 02207;
  - Ensuring fill meets elevation requirements;
  - Submittals to ensure material meets requirements

- Measurement: Measurement shall be taken per cubic yard of fill imported and installed according to the plans and specifications.

- Payment: Payment shall be by the price bid per cubic yard of "Furnish and Install Clean Fill" as listed in the proposal.

3. Furnish and Install Class III Rip Rap

- General: This bid item shall include furnishing and installing class III rip rap as shown on the plans.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Furnishing and Installing Class III rip rap.
  - Furnishing and Installing non-woven geotextile underneath rip rap as shown in the plans.
  - Material submittals for fabric and rip rap.

- Measurement: Measurement shall be per cubic yard of Class III Rip Rap furnished and installed. Measurement shall be to the nearest cubic yard.
- Payment: Payment shall be by the price bid per cubic yard of "Furnish and Install Class III Rip Rap" as listed in the proposal.

4. Salvage Fill from Island

- General: This bid item shall include stripping and salvaging 300 cubic yards of fill from the island.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Removing +/- 1.5' of fill from the mid-channel bar;
  - Stockpiling fill to allow material to dry before installation;
  - Moving material as necessary to build temporary dikes for dewatering of scour hole;
  - Mixing dried salvaged fill into imported fill for backfilling of scour hole;
  - Ensuring salvaged fill is not tested by independent testing agency with imported fill proctors;
  - Stripping mid-channel bar to bed surface elevation of main channel and creating one continuous riffle;

- Measurement: Measurement shall be per cubic yard of fill stockpiled and salvaged into scour hole. Measurement shall be rounded to the nearest cubic yard and taken from the stockpiles.

- Payment: Payment shall be by the price bid for the cubic yard of "Salvage Fill from Island" as listed in the proposal.

5. Install Class III Rip Rap

- General: This bid item shall include installing class III rip rap as shown on the plans from existing stockpiles.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Hauling class III rip rap from current onsite stockpiles
  - Installing Class III rip rap according to plans
  - Furnishing and Installing non-woven geotextile underneath rip rap as shown in the plans.
  - Material submittals for fabric.

- Measurement: Measurement shall be per cubic yard of Class III Rip Rap installed. Measurement shall be to the nearest cubic yard.
- Payment: Payment shall be by the price bid per cubic yard of "Install Class III Rip Rap" as listed in the proposal.

6. Topsoil

- General: This bid item shall include installation of 6" lift of topsoil on top of embankment.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Furnishing and Installing 6" lift of screened topsoil;
  - This bid item shall include installation of 60 CY of class II rip rap and 85 CY of railroad ballast on upstream embankment slopes to armor slopes.
  - Seeding and fertilizing all installed topsoil and dressed slopes that are roughened;
  - Submittals of topsoil, fertilizer and seed.

- Measurement: Measurement shall be per cubic yard of topsoil furnished and installed. Measurement shall be rounded to the nearest cubic yard. Installation of railroad ballast and class II

rip rap shall not be measured for payment and shall be considered incidental to the spreading of topsoil. Include costs to install 60 CY of class II rip rap and 85 CY of railroad ballast in unit price for "Topsoil".

- Payment: Payment shall be by the unit price bid for the cubic yard of "Topsoil" as listed in the proposal.

C. CONTRACTS:

All work shall be done under one general contract provided by the Montana Department of Fish Wildlife and Parks Design and Construction.

D. PROPOSAL:

1. Proposal shall include all costs to complete the work as described in the plans and specifications, utility locates, required insurance costs and 1% MDOR Contractor Gross Receipts Tax of 1%.

END OF SECTION

SECTION 01450

MOBILIZATION/DEMOBILIZATION

Added Section.

PART 1 GENERAL

1.1 DESCRIPTION

A. This item shall consist of the prepatory 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 fro 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

Added Section.

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 RESPONSIBILITES

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 mater 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, stakes, temporary paint marks, flagging and other devices shall be removed regardless of who installed them. All excess pavement, 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. 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.

The existing railroad ballast ramp shall be graded upon completion of the project.

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 01800

EROSION AND SEDIMENT CONTROL

Added Section.

PART 1 GENERAL

1.1 DESCRIPTION

A. This work consists of furnishing, constructing, and maintaining permanent and temporary erosion control and sediment control measures as shown on the project drawings and/or project related construction permits, or as directed by the Owner during construction as BMPs are needed.

PART 2 PRODUCTS

2.1 GENERAL

A. Temporary and erosion control products utilized include but are not limited to backfill material; berms; brush barriers; erosion control blankets, bales, wattles, logs, rolls; erosion control culvert pipe; detention basins; fertilizer; geotextile; mulch; plastic lining; riprap; sandbags; seed; silt fence; and water.

2.2 EROSION CONTROL WATTLES

A. Where designated, provide a sediment retention product made from straw and coconut fiber reinforced with a 100% bio-degradable netting. Use wood stakes to secure sediment retention product in place, spacing per the manufacturer's recommendations. An acceptable product is *Sediment Stop*, manufactured by *North American Green*, or approved equal.

2.2 EROSION CONTROL BLANKETS

A. Where designated, provide a sediment retention product made from straw and coconut fiber reinforced with a 100% bio-degradable netting. Use wood stakes to secure sediment retention product in place, spacing per the manufacturer's recommendations. An acceptable product is *BioNet® S150BN™*, manufactured by *North American Green*, or approved equal.

PART 3 EXECUTION

3.1 INSTALLATION

A. Provide permanent and temporary erosion control measures to minimize erosion and sedimentation during and after construction according to the contract erosion control plan, environmental permits, and as directed by the Project Representative. These

erosion control measures shall be designed, implemented, and maintained by the Contractor in accordance with Best Management Practices (BMPs) to control erosion and sediment release from the work site.

B. Install permanent and temporary erosion control measures according to the Storm Water Pollution Prevention Plan (SWPPP), if applicable, approved construction permits, and erosion control drawings.

C. When erosion control measures are not functioning as intended, immediately take corrective action.

PART 4 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT AND PAYMENT

A. Unless specifically noted otherwise, Erosion and Sediment controls shall be incidental to other work items in the contract and no separate payment shall be made.

END OF SECTION 01800

SECTION 02110

GEOTEXTILES

PART 1 GENERAL

1.1 DESCRIPTION

Add the following:

This work also includes the installation of high-survivability, non-woven geotextile beneath rip rap.

1.2 REFERENCES

C. Delete this section and add the following:

Provide geotextile meeting the strength requirements from Table 1.

Table 1. High Survivability, Non-Woven Geotextile Requirements

	TEST METHODS	UNITS	REQUIREMENTS
Grab Elongation	ASTM D 4632	%	>50
Grab Strength	ASTM D 4632	lbs	>200
Sewn Seam Strength	ASTM D 4632	lbs	>180
Tear Strength	ASTM D 4533	lbs	>80
Puncture Strength	ASTM D 4833	lbs	>80
Permittivity	ASTM D 4491	Sec^{-1}	≥0.02
Apparent Opening Size	ASTM D 4751	Sieve Size (in)	#30 (≤0.024)
Ultraviolet Stability (Retained Strength)	ASTM D 4355	%	≥50 after 500 hours of exposure

PART 2 MEASUREMENT AND PAYMENT

2.1 MEASUREMENT

A. No Measurement will be taken for this item.

2.2 PAYMENT

A. Payment will be included in the unit cost for installation of rip rap.

END OF SECTION 02110

SECTION 02207

AGGREGATE MATERIALS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submittals

B. Aggregate materials

C. Source quality control

D. Stockpiling

E. Stockpile clean up

F. Field Density Requirements

1.3 SUBMITTALS

A. Submit laboratory test results for each type of aggregate material 5 days prior to installation, for Project Manager approval.

1. Each aggregate material used as a fill material shall have as a minimum the following laboratory tests completed:

I. Sieve Analysis
II. Proctor
III. Atterberg Limit Test (crushed top surfacing only)
VI. Fracture Analysis (crushed materials only)

B. Materials Source: Submit name of imported materials suppliers. Provide materials from same source throughout the work.

C. Change of source requires Engineer's approval.

PART 2 PRODUCTS

2.1 AGGREGATE MATERIALS

A. Clean Fill, 6" (-) free of shale, clay, friable material and debris; graded in accordance with AASHTO T-11 and T-27, within the following limits:

TABLE OF GRADATIONS
Percentage of Weights Passing Square Mesh Sieves

	Gradation
6 Inch Sieve	95-100%
No. 4 Sieve	35-65%
No. 40 Sieve	10-30%
No. 200 Sieve	2-10%

1. Material shall be evenly graded.
2. 5% oversized material is permitted.

The aggregate for all grades, including added binder or filler, shall meet the following supplemental requirements.

(1) Dust Ration. The portion passing the No. 200 Sieve shall not be greater than 2/3 of the portion passing the No. 40 Sieve.

(2) No intermediate sizes for cover aggregate, or for other purposes, shall be removed from the material in the course of production unless authorized in writing by the Architect/Engineer.

2.2 SOURCE QUALITY CONTROL

A. Field inspection and testing will be the responsibility of the contractor.

B. Tests and analysis of aggregate material will be performed in accordance with AASHTO T-11 and T-27 and as specified in this Section.

C. If tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.1 STOCKPILING

A. Stockpile materials on site at locations approved by Engineer.

B. Separate differing materials with dividers or stockpile apart to prevent mixing.

C. Stockpile in sufficient quantities to meet project schedule and requirements.

D. Direct surface water away from stockpile site so as to prevent erosion or deterioration of materials.

E. Maintain optimum moisture content of backfill materials to attain required compaction density.

3.2 STOCKPILE CLEANUP

A. Remove stockpile, leave area in a clean, neat condition reseed as necessary. Grade site surface to prevent freestanding surface water.

3.3 FIELD DENSITY REQUIREMENTS

A. Contractor shall place material in compacted lifts no larger than 12".

B. Contractor shall have independent testing agency conduct in-place density tests on every 3rd lift. There shall be a minimum of 4 lifts tested in two locations throughout fill operations. More tests may be deemed necessary if failing or questionable results are obtained at the contractor's expense.

C. If test fails, contractor shall compact entire area and new random testing location should be selected.

C. Contractor shall compact all lifts to 95% of standard proctor.

D. Contractor shall take care to have imported fill tested in lifts separate from salvaged fill to ensure proper density of soils.

E. Contractor shall maintain the same construction procedures on lifts that are not tested. Engineer has the right to order additional tests of intermediate lifts. If additional tests are deemed necessary, the contractor shall be responsible for payment of all failing tests. The Owner will be responsible for payment of any additional test ordered that pass 95% compaction of standard proctor.

F. Independent Testing Agency shall submit their tests of each lift to the Engineer for

review and approval. Contractor can continue fill operations after tests are approved by Engineer.

G. Compaction testing will be performed in accordance with ANSI/ASTM D698, ASTM D2922, ASTM D3017.

PART 4 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Furnish and Install Clean Fill– Measurement will be taken by the cubic yard of clean fill installed.

4.2 PAYMENT

A. Payment will be made under the unit price included in the proposal for "FURNISH AND INSTALL CLEAN FILL". Include all costs incidental to the placement of this item in the unit price.

END OF SECTION

SECTION 02240

RIPRAP

Added Section.

PART 1 GENERAL

1.1 DESCRIPTION

A. This work consists of furnishing, placing, and finishing riprap rock placement at designated areas on the project drawings.

PART 2 PRODUCTS

2.1 RIPRAP GRADATION

A. Furnish hard, durable, angular rock that is resistant to weathering and water action and free of organic or other unsuitable material. Do not use shale, rock with shale seams, or other fissle or fissured rock that may break into smaller pieces in the process of handling and placing. Incorporate the following gradation for riprap installations as shown in Table 1:

Table 1. Riprap Gradation

TABLE OF GRADATIONS - RANDOM RIPRAP

Class	Weight Of Stone	Equivalent Spherical Diameter[1]	% Of Total Weight That Must Be Smaller Than Given Size
I	100 pounds (45 kg) 60 pounds (27 kg) 25 pounds (11 kg) 2 pounds (0.90 kg)	1.05 feet (320 mm) 0.88 feet (270 mm) 0.66 feet (200 mm) 0.27 feet (80 mm)	100 70-90 40-60 0-10
II	700 pounds (318 kg) 500 pounds (227 kg) 200 pounds (91 kg) 20 pounds (9.0 kg)	2.00 feet (610 mm) 1.79 feet (545 mm) 1.32 feet (400 mm) 0.61 feet (190 mm)	100 70-90 40-60 0-10
III	2,000 pounds (09 kg) 1,400 pounds (35 kg) 700 pounds (318 kg) 40 pounds (18 kg)	2.82 feet (860 mm) 2.53 feet (770 mm) 2.00 feet (610 mm) 0.77 feet (235 mm)	100 70-90 40-60 0-10

Note 1. Based on unit weight of 165 pounds per cubic foot (2,675 kg/m^3).

PART 3 EXECUTION

3.1 GENERAL

A. Place riprap to form a well-graded mass to its full thickness in operation to avoid displacing the underlying geotextile or other material. Do not place riprap material by methods that cause segregation or damage to the prepared surface. Place or rearrange individual rocks by mechanical or hand methods to obtain a dense uniform blanket with a reasonably smooth surface.

B. Install conserved and/or imported riprap according to the project drawings or as directed by the Project Representative.

PART 4 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be taken by the cubic yard of "Furnish and Install Class III Rip Rap" according to the plans or as directed by the project manager. Measurement will not be taken for rip rap installed not according to the plans or as directed by the project manager.

B. Measurement will be taken for "Install Class III Rip Rap" by the amount of rip rap installed by the contractors from existing stockpiles. Measurement will not be taken for rip rap installed not according to the plans or as directed by the project manager.

3.2 PAYMENT

A. Payment will be at the unit price listed in the proposal for "Furnish and Install Class III Rip Rap" and "Install Class III Rip Rap". Payment will be made for completed work.

END OF SECTION 02240

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 furnishing, conserving, placing, and finishing topsoil placement at top of embankment as shown on the project drawings or as directed by the Engineer. This does not include installation of topsoil on the dressed 2:1 slopes that shall have roughened surface consisting of railroad ballast and class II rip rap.

PART 2 PRODUCTS

2.1 SEED

Add the following:

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

Seed Name	% Pure Live Seed	Lbs. Per Acre
Western Wheatgrass	30	*
Blue bunch Wheatgrass	20	*
Hard Fescue	20	*
Slender Wheatgrass	15	*
Green Needlegrass	10-15	*

* Drilled Rate = 8 lbs/acre, Broadcast and Hydroseed Rate = 16 lbs/acre

2.2 TOPSOIL

Add the following:

Utilize all salvaged topsoil conserved from clearing and grubbing operations to cover embankment prior to fertilizing, seeding, or mulching. Place furnished topsoil over top of embankment. Do not add topsoil to any sloped embankment. Sloped embankment is to remain clean fill with roughened surfaces consisting of class II rip rap and railroad ballast for water dissipation. All disturbed slopes and topsoil are to be seeded.

2.4 FERTILIZER

Add the following:

When broadcast seeding, apply the fertilizer separately. When drill seeding, do not apply seed and fertilizer in a single mixture. The fertilizer must be applied separately, either broadcast before seed application, or surface banded during seeding.

PART 4 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Placing conserved topsoil will not be measured for payment and is considered incidental to other work items in this Contract.

B. Seeding and revegetation will not be measured for payment and will be considered incidental to furnished topsoil.

C. Furnished topsoil will be measured by the square yard of topsoil installed at 6” depth.

4.2 PAYMENT

A. Payment will be at the unit price listed in the proposal for “Topsoil”. Payment will be made for completed work.

END OF SECTION 02910