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## PREFACE

Preface\_wo\_03\_15\_2004\_m

Delete all but the first paragraph and add the following:

The Forest Service, US Department of Agriculture has adopted FP-03 for construction of National Forest System Roads.

# 101 - TERMS, FORMAT, AND DEFINITIONS

101.00\_nat\_us\_07\_25\_2005

101.01\_nat\_us\_01\_22\_2009

## 101.01 Meaning of Terms

Delete all references to the TAR (Transportation Acquisition Regulations) in the specifications.

101.03\_nat\_us\_06\_16\_2006

## 101.03 Abbreviations.

Add the following to (a) Acronyms:

AFPA	American Forest and Paper Association
MSHA	Mine Safety and Health Administration
NIST	<a href="#">National Institute of Standards and Technology</a>
NESC	National Electrical Safety Code
WCLIB	West Coast Lumber Inspection Bureau

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Add the following to (b) SI symbols:

mp	Milepost
ppm	Part Per Million

101.04\_nat\_us\_03\_29\_2007

## 101.04 Definitions.

Delete the following definitions and substitute the following:

**Bid Schedule**--The Schedule of Items.

**Bridge**--No definition.

**Contractor**--The individual or legal entity contracting with the Government for performance of prescribed work. In a timber sale contract, the contractor is the “purchaser”.

**Culvert**--No definition.

**Right-of-Way**--A general term denoting (1) the privilege to pass over land in some particular line (including easement, lease, permit, or license to occupy, use, or traverse public or private lands), or (2) Real property necessary for the project, including roadway, buffer areas, access, and drainage areas.

Add the following:

**Adjustment in Contract Price**--“Equitable adjustment,” as used in the Federal Acquisition Regulations, or “construction cost adjustment,” as used in the Timber Sale Contract, as applicable.

**Change**--“Change” means “change order” as used in the Federal Acquisition Regulations, or “design change” as used in the Timber Sale Contract.

**Design Quantity**--“Design quantity” is a Forest Service method of measurement from the FS-96 *Forest Service Specifications for the Construction of Roads and Bridges*. Under these FP specifications this term is replaced by the term “Contract Quantities”.

**Forest Service**--The United States of America, acting through the Forest Service, U.S. Department of Agriculture.

**Neat Line**--A line defining the proposed or specified limits of an excavation or structure.

**Pioneer Road**--Temporary construction access built along the route of the project.

**Purchaser**--The individual, partnership, joint venture, or corporation contracting with the Government under the terms of a Timber Sale Contract and acting independently or through agents, employees, or subcontractors.

**Protected Streamcourse**--A drainage shown on the plans or timber sale area map that requires designated mitigation measures.

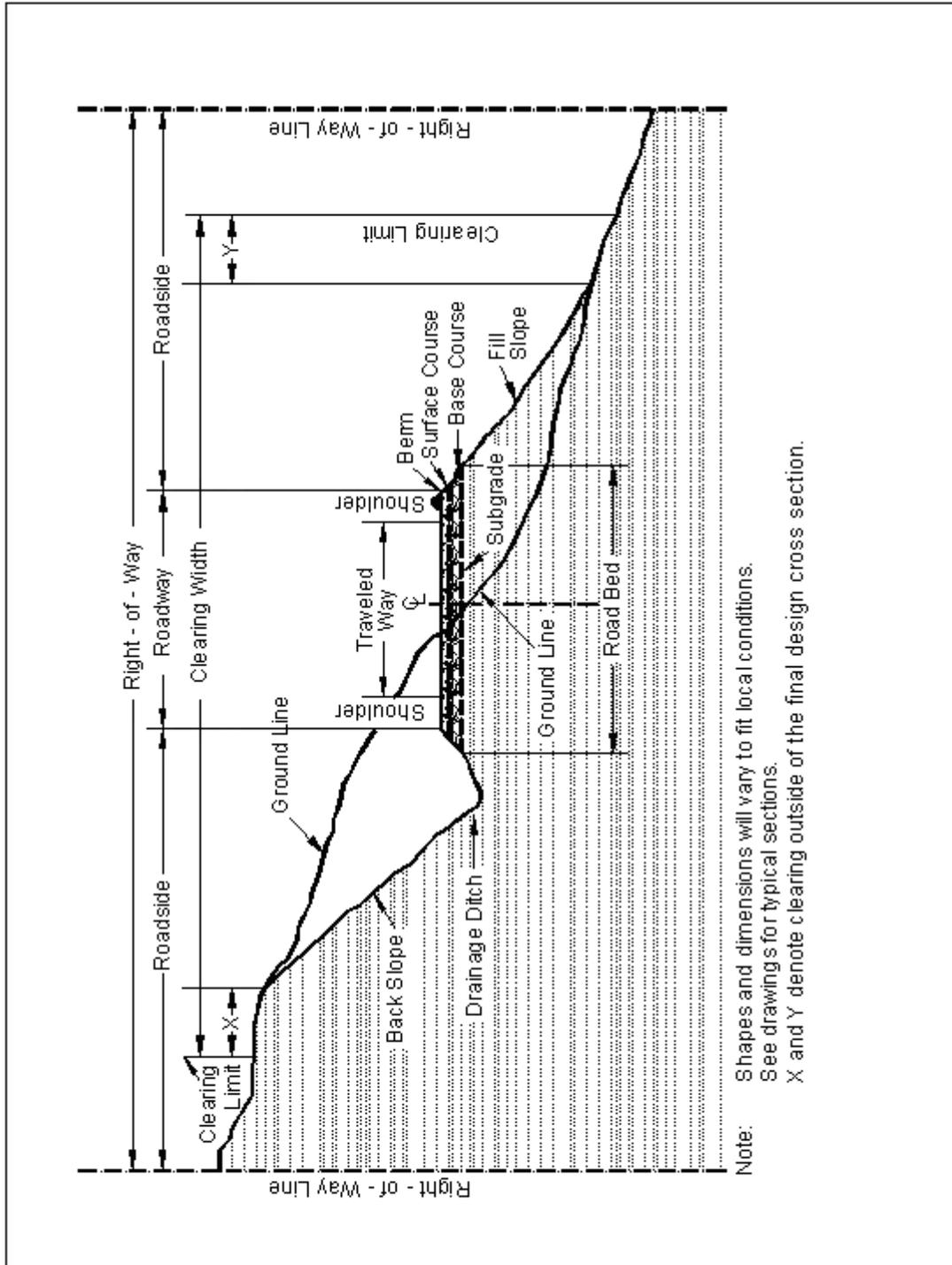
**Road Order**--An order affecting and controlling traffic on roads under Forest Service jurisdiction. Road Orders are issued by a designated Forest Officer under the authorities of 36 CFR, part 260.

**Schedule of Items**--A schedule in the contract that contains a listing and description of construction items, quantities, units of measure, unit price, and amount.

**Utilization Standards**--The minimum size and percent soundness of trees described in the specifications to determine merchantable timber.

Add Figure 101-1—Illustration of road structure terms:

Figure 101-1—Illustration of road structure terms.



## 102 - BID, AWARD, AND EXECUTION OF CONTRACT

102.00\_nat\_us\_02\_16\_2005

### 102 Bid, Award, and Execution of Contract

Delete Section 102 in its entirety.

## 103 - SCOPE OF WORK

103.00\_nat\_us\_02\_16\_2005

### Deletions

Delete all but subsection 103.01 Intent of Contract.

Add the following to Subsection 103.01.

In the fall of 2013, the Lewis and Clark National Forest installed an HDPE ditch liner to intercept surface runoff around two tailings sites within the Carpenter Creek Drainage. This contract is to make repairs and improve the function of the ditch liner system at two locations within the upper tailings site. These locations have been identified as Repair Site 1 and Repair Site 2.

- Repair Site 1: Work includes, but is not limited to, the replacement of a ditch liner section with a tee fitting, the excavation of new short ditch to catch concentrated water source, the lining of the ditch with pre-formed trapezoidal high density polyethylene channel liner, the replacement of erosion control blankets, the construction of riprap splash pads, and the seeding of disturbed native soils.
  - NOTE: Government will provide two sections of HDPE ditch liner. Contractor will have to provide the HDPE ditch tee intersection and HDPE ditch flared end. Contractor will install all ditch system components.
- Repair Site 2: Work includes, but is not limited to, the construction of a rip rap channel over a 30 mil HDPE liner, the replacement of erosion control blankets, the construction of check dams, and the seeding of disturbed native soils.

The project is located adjacent to the Carpenter Creek County Road near Neihart, MT. The project is located in Section 16 and Section PB57, Range 8E Township 14N.

To access the project from Great Falls, MT take US Highway 89/87/MT 200 East for approximately 20 miles, then turn right onto US Highway 89. Continue on US Highway 89 for approximately 33 miles. Turn left onto the Carpenter Creek Road. Continue on the Carpenter Creek Road for approximately 2.1 miles. The lower and upper tailings piles will be on your right. Bear left onto Pioneer Lane and travel for approximately 1.1 miles. The Silver Dyke tailings pile will be on your left.

## 104 - CONTROL OF WORK

104.00\_nat\_us\_06\_16\_2006

### Deletions

Delete Sections 104.01, 104.02, and 104.04.

104.06\_nat\_us\_02\_17\_2005

Add the following subsection:

### **104.06 Use of Roads by Contractor**

The Contractor is authorized to use roads under the jurisdiction of the Forest Service for all activities necessary to complete this contract, subject to the limitations and authorizations designated in the Road Order(s) or described in the contract, when such use will not damage the roads or national forest resources, and when traffic can be accommodated safely.

## 105 - CONTROL OF MATERIAL

105.02\_nat\_us\_01\_18\_2007

### 105.02 Material Sources

Add the following before the first paragraph:

Riprap Source – Contractor Furnished – There is no Government source for riprap.

Materials Stockpile Site- Government Provided – The contractor is allowed to stockpile construction materials in the area of the tailings piles. The stockpile of material must be in such a manner as to allow safe passage by the general public and local landowners on all roads.

Bed Course material - Contractor Furnished – There is no available Government source for Bed Course material.

105.05\_nat\_us\_05\_12\_2004

### 105.05 Use of Material Found in the Work.

Delete 105.05 (a) and (b) and the last sentence of the second paragraph and substitute the following:

Materials produced or processed from Government lands in excess of the quantities required for performance of this contract are the property of the Government. The Government is not obligated to make reimbursement for the cost of producing these materials.

## 106 - ACCEPTANCE OF WORK

106.07\_nat\_us\_05\_11\_2004

106.01\_nat\_us\_01\_17\_2013

### 106.01 Conformity with Contract Requirements.

Delete Subsection 106.01 and substitute the following:

Follow the requirements of FAR Clause 52.246-12 Inspection of Construction.

References to standard test methods of AASHTO, ASTM, GSA, and other recognized standard authorities refer to the methods in effect on the date of solicitation for bids.

Perform all work to the lines, grades, cross-sections, dimensions, and processes or material requirements shown on the plans or specified in the contract.

Incorporate manufactured materials into the work according to the manufacturer's recommendations or to these specifications, whichever is more strict.

Plan dimensions and contract specification values are the values to be strived for and complied with as the design values from which any deviations are allowed. Perform work and provide material that is uniform in character and reasonably close to the prescribed value or within the specified tolerance range. The purpose of a tolerance range is to accommodate occasional minor variations from the median zone that are unavoidable for practical reasons.

When standard manufactured items are specified (such as fence, wire, plates, rolled shapes, pipe conduits, etc., that are identified by gauge, unit mass, section dimensions, etc.), the identification will be considered to be nominal masses or dimensions. Unless specific contract tolerances are noted, established manufacturing tolerances will be accepted.

The Government may inspect, sample, or test all work at any time before final acceptance of the project. When the Government tests work, copies of test reports are furnished to the Contractor upon request. Government tests may or may not be performed at the work site. If Contractor testing and inspection is verified by the Government, the Contractor's results may be used by the Government to evaluate work for acceptance. Do not rely on the availability of Government test results for process control.

Acceptable work conforming to the contract will be paid for at the contract unit bid price. Four methods of determining conformity and accepting work are described in Subsections 106.02 to 106.05 inclusive. The primary method of acceptance is specified in each Section of work. However, work may be rejected at any time it is found by any of the methods not to comply with the contract.

Remove and replace work that does not conform to the contract, or to prevailing industry standards where no specific contract requirements are noted, at no cost to the Government.

(a) Disputing Government test results. **If the accuracy of Government test results is disputed, promptly inform the CO. If the dispute is unresolved after reasonable steps are taken to resolve the dispute, further evaluation may be obtained by written request. Include a narrative describing the dispute and a proposed resolution protocol that addresses the following:**

- (1) Sampling method;
- (2) Number of samples;
- (3) Sample transport;
- (4) Test procedures;
- (5) Testing laboratories;
- (6) Reporting;
- (7) Estimated time and costs; and
- (8) Validation process.

If the evaluation requires additional sampling or testing be performed, mutually agree with the Government on witnessing procedures and on sampling and testing by a third party laboratory. Use a third party laboratory accredited by the AASHTO accreditation program. Provide proof of the laboratory's accreditation for the test procedures to be used. Do not use the same laboratory that produced the disputed Government test results or that produced the test results used as a basis for the dispute.

The CO will review the proposed resolution protocol and may modify it before final approval and execution.

The Government will use the approved resolution protocol test results to determine the validity of the disputed testing. If the Government test results are validated, the Contractor will be responsible for all costs associated with developing and performing the resolution protocol. If the Government test results are not validated, the Government will be responsible for all costs associated with developing and performing the resolution protocol. If the validity of the Government test results cannot be determined, the Contractor and Government will equally share all costs associated with developing and carrying out the resolution protocol.

(b) **Alternatives to removing and replacing non-conforming work.** As an alternative to removal and replacement, the Contractor may submit a written request to:

- (1) Have the work accepted at a reduced price; or

(2) Be given permission to perform corrective measures to bring the work into conformity.

The request must contain supporting rationale and documentation. Include references or data justifying the proposal based on an evaluation of test results, effect on service life, value of material or work, quality, aesthetics, and other tangible engineering basis. The CO will determine disposition of the nonconforming work.

#### **106.07 Delete**

Delete subsection 106.07.

## **107 - LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC**

### **107.02 Protection and Restoration of Property and Landscape.**

Add the following:

Minimize disturbance of the tailings to the maximum extent possible with tracked or wheeled equipment. The equipment shall be of reasonable size and operate in a manner that shall minimize the disturbance of the site. Submit a list of equipment to be utilized on the project for approval from the CO two (2) weeks prior to the start of construction.

When crossing the tailings to a location of construction, use the same route to transport equipment, so as little disturbance takes place as possible.

Work done within the stream corridor shall be done during low flow conditions.

107.05\_nat\_us\_05\_11\_2004

### **107.05 Responsibility for Damage Claims.**

Delete the entire subsection.

107.06\_nat\_us\_06\_16\_2006

### **107.06 Contractor's Responsibility for Work.**

Delete the following from the first paragraph.

“except as provided in Subsection 106.07”.

### **107.08 Sanitation, Health, and Safety.**

Add the following.

Site work will require the handling of mine waste containing metals that are listed as hazardous substances under the comprehensive Environmental Response, Compensation and Liability Act. (CERCLA) 42 USC 9601 and 9602. Hazardous materials are present at the site and present a threat to human health.

The contractor shall submit a Health and Safety Plan to the CO prior to commencement of work. Minimum information to be included in the health and safety plan are:

1. Proposed Equipment
2. Proposed Communication System
3. Proposed Personal Protective Equipment
4. First Aid Station

All employees working on the site are required to have completed OSHA 40 hour Hazardous Waste Operations Training (HAZWOPER). The Contractor shall provide written documentation that all employees working on the site have completed and are current with the HAZWOPER training required under 29 CFR 1910.120.

The Contractor shall prepare and submit a Vehicle Decontamination Plan before work commences. The plan shall include at a minimum:

1. Methods of decontaminating vehicles.
2. Locations of decontamination stations.

The Vehicle Decontamination Plan shall be subject to review and approval, in writing, by the CO. No work may commence until approvals of the Vehicle Decontamination Plan have been secured.

107.09\_nat\_us\_06\_16\_2006

### **107.09 Legal Relationship of the Parties.**

Delete the entire subsection.

107.10\_nat\_us\_06\_16\_2006

### **107.10 Environmental Protection.**

Add the following:

Design and locate equipment repair shops, stationary refueling sites, or other facilities to minimize the potential and impacts of hazardous material spills on Government land.

Before beginning any work, submit a Hazardous Spill Plan. List actions to be taken in the event of a spill. Incorporate preventive measures to be taken, such as the location of mobile refueling facilities, storage and handling of hazardous materials, and similar information. Immediately notify the CO of all hazardous material spills. Provide a written narrative report form no later than 24 hours after the initial report and include the following:

- Description of the item spilled (including identity, quantity, manifest number, and other identifying information).
- Whether amount spilled is EPA or state reportable, and if so whether it was reported, and to whom.
- Exact time and location of spill including a description of the area involved.
- Containment procedures.
- Summary of any communications the Contractor had with news media, Federal, state and local regulatory agencies and officials, or Forest Service officials.
- Description of clean-up procedures employed or to be employed at the site including final disposition and disposal location of spill residue.

When available provide copies of all spill related clean up and closure documentation and correspondence from regulatory agencies.

The Contractor is solely responsible for all spills or leaks that occur during the performance of this contract. Clean up spills or leaks to the satisfaction of the CO and in a manner that complies with Federal, state, and local laws and regulations.

## 108 - PROSECUTION AND PROGRESS

108.00\_nat\_us\_02\_16\_2005

### 108 Delete.

Delete Section 108 in its entirety.

## 109 – MEASUREMENT AND PAYMENT

### 109 Deletions

Delete the following entire subsections:

**109.06 Pricing of Adjustments.**

**109.07 Eliminated Work.**

**109.08 Progress Payments.**

**109.09 Final Payment.**

### 109.02 Measurement Terms and Definitions.

**(b) Contract quantity.**

Add the following:

Contract quantities will be adjusted only when there are errors in the original design of 15% or more.

One of the following Methods of Measurement for determining final payment is designated in the Schedule of Items for each Pay Item:

[a] Contract Quantities (CQ) – As previously defined.

[b] Actual Quantities (AQ) – These quantities are determined from measurements of completed work.

[c] Lump Sum Quantities (LSQ) – These quantities denote one complete unit of work as described in 109.02 (h).

Change the following:

“(b) Cubic yard” to “(c) Cubic yard”.

Add the following definition:

**(p) Thousand Board Feet (Mbf).** 1,000 board feet based on nominal widths, thickness, and extreme usable length of each piece of lumber or timber actually incorporated in the job. For glued laminated timber, 1,000 board feet based on actual width, thickness, and length of each piece actually incorporated in the job.

## 151 - MOBILIZATION

151.00\_01\_us\_10\_11\_2006

Delete Section 151 in its entirety and replace with the following.

### Description

**151.01** This work consists of moving personnel, equipment, material, and incidentals to the project and performing all work necessary before beginning work at the project site; obtaining of permits, insurance, and bonds. This work also includes washing and treating construction equipment and vehicles necessary for equipment transport to remove seeds, plants, and plant fragments before the equipment is used on Forest Service lands, according to the requirements within.

### Construction Requirements

Wash the sides, tops, and undercarriages of all construction equipment. Remove all seeds, plants, plant fragments, dirt, and debris from the construction equipment. Only equipment inspected by the Forest Service will be allowed to operate within the project area. All subsequent move-ins of equipment to the project area will be treated in the same manner as the initial move-in. This requirement does not apply to cars, pickup trucks, and other vehicles that regularly travel between the construction site and areas off the National Forest.

Equipment will be considered free of soil, seed, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment, components or the need for specialized inspection tools is not required.

Notify the CO in writing at least 72 hours before moving any construction equipment onto the national forest. Notification will include an agreed upon location where the equipment will be available for inspection by the Forest Service. Inspection will be required after every cleaning.

Use methods of cleaning and locations for cleaning approved by the CO.

For work at a commercial washing facility, use an approved facility.

New infestations of noxious weeds of concern to Forest Service and identified by either Contractor or Forest Service, in the Project Area or on the haul route, will be promptly reported to the other party. Contractor and Forest Service will agree on treatment methods to reduce or stop the spread of noxious weeds when new infestations are found. A current list of noxious weeds of concern to Forest Service is available at each Forest Service office.

### Measurement

**151.02**\_Clean equipment prior to moving onto this project. The initial cleaning will not be included in the measurement for payment. Payment for cleaning will only be made if subsequent cleanings are ordered by the CO. Measurement shall be on an “each” basis, meaning one complete cleaning of all equipment required for this contract. Subsequent cleanings necessitated by the Contractor’s actions but not directed by the CO will not be included in the measurement for payment.

Measure mobilization according to Subsection 109.02.

### **Payment**

151.03\_The accepted quantity, measured as provided in Subsection 109.02, will be paid at the contract price per unit of measurement for the Section 151 pay item shown in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Progress payments for mobilization lump sum will be paid as follows:

- (a) If applicable, bond premiums will be reimbursed according to FAR Clause 52.232-5 Payments Under Fixed-Price Construction Contracts, after receipt of the evidence of payment.
- (b) When 5 percent of the original contract amount is earned from other bid items, 50 percent of the mobilization item, or 5 percent of the original contract amount, whichever is less, will be paid.
- (c) When 10 percent of the original contract amount is earned from other bid items, 100 percent of the mobilization item, or 10 percent of the original contract amount, whichever is less, will be paid.
- (d) Any portion of the mobilization item in excess of 10 percent of the original contract amount will be paid after final acceptance.

Include all costs associated with the initial cleaning of equipment in the unit bid price for Mobilization. Cleaning for subsequent move-ins will not be paid for unless after a suspension ordered by the CO.

## 153 – CONTRACTOR QUALITY CONTROL

### 153.07. Project Submittals

Add the following:

At a minimum the contractor shall provide project submittals as shown on the below Submittal Log. Submittal requirements are listed in the Standard Specifications, Supplemental Specifications, and Plans.

<b>SUBMITTAL LOG</b>				
<b>No.</b>	<b>Description</b>	<b>Applicable Spec. Section or Plans</b>	<b>Date Rec'd</b>	<b>Date Approved</b>
1	Material Stockpile Locations	105		
2	Hazardous Spill Plan	107		
3	Equipment List	107		
4	Vehicle Decontamination Plan	107		
5	Noxious Weed Control	151		
6	Riprap-Material Certification	251		
7	Bed Course-Material Certification	608		
8	HDPE Mat-Material Certification	608		
9	HDPE Ditch Liner T Intersection-Shop Drawings/Material Certifications	608		
10	HDPE Ditch Liner Flared End Section-Shop Drawings/Material Certifications	608		
11	Turf Reinforcement Mat -Material Certification	629		

## 155 - SCHEDULES FOR CONSTRUCTION CONTRACTS

155.00\_nat\_us\_05\_11\_2004

### 155 Delete.

Delete Section 155 in its entirety.

## 157 - SOIL EROSION CONTROL

157.03\_nat\_us\_02\_24\_2005

### 157.02 Materials.

Add the following:

Provide bales, wattles, logs, and rolls from a certified noxious weed free source.

### 157.03 General

Delete the entire subsection and replace with the following:

Minimize erosion and sedimentation during and after construction. Do not begin work until the necessary controls for that particular phase of work have been implemented. Do not modify the type, size, or location of any control. An alternate erosion control plan with all necessary permits may be submitted 30 days before intended use.

Incorporate all permanent erosion control features into the project at the earliest practicable time, as outlined in the approved plan.

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

### 157.10 Waterway and Slope Protection and Stabilization.

#### (c) Check dams.

Delete the entire subsection (c) Check dams and replace with the following:

Construct check dams using class 3 rip rap per the drawings.

## 158 – WATERING FOR DUST CONTROL

### Description

#### 158.01

Delete and replace with the following:

This work consists of furnishing and applying water for the control of dust caused by the work.

### Construction Requirements

#### 158.03 General

Delete the entire subsection and replace with the following:

Provide adequate water supply and apply water needed at all hours as necessary to control dust. Uniformly apply water using pressure-type distributors, pipelines, pipelines equipped with spray systems, or hoses with nozzles.

### Measurement

#### 158.05

Delete the entire subsection and replace with the following:

Do not measure dust control for payment.

## 203 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS

### Construction Requirements

#### 203.03 Salvaging Material.

Delete the last sentence and replace with the following:

No materials on the project are designated for salvage.

#### 203.05 Disposing of Material.

Delete the methods shown and replace with the following:

**(a) Scattering.** Scatter construction slash outside the clearing limits in areas designated by the CO. Limb all logs. Place logs and stumps away from trees, positioned so they will not roll and are not on top of another. Limb and scatter other construction slash to reduce slash concentrations.

**(b) Hydrological Sensitive Placement.** Use this method in combination with method (a), in disposing of material, to reduce erosion and to aid in re-vegetation:

1. Place logs on contours to act as erosion barriers. Place logs so that 80% of their length is on the ground surface.
2. Scatter slash on bare or disturbed areas outside the clearing limits as directed.
3. Place larger stumps in an upright position in created swales/divots to form planting pockets.

## 204 – EXCAVATION AND EMBANKMENT

### Construction Requirements

#### **204.14 Disposal of Unsuitable or Excess Material.**

Delete the entire subsection and replace with the following:

Place excess excavation as shown on the drawings or as directed by the CO.

Shape and compact the waste material in its final location. Do not mix clearing or other material in the excess excavation material.

## **209 - STRUCTURE EXCAVATION AND BACKFILL**

### **Description**

#### **209.01**

Delete the second sentence and replace with the following:

The work includes preserving channels; shoring and bracing; sealing foundations; dewatering; excavating for the construction of Paved Waterway, Section 608; stockpiling; preparing foundations; bedding; and backfilling.

### **Construction Requirements**

#### **209.11 Compacting.**

Delete this subsection and replace with the following:

Compact according to Subsection 208.11.

## **251 – RIPRAP**

### **Description**

#### **251.01**

Replace the first sentence with the following:

This work consists of furnishing, hauling, and placing riprap for bank protection, slope protection, drainage structures, erosion control, and rock cross-vane structures.

### **Material**

#### **251.02 Material.**

Add the following:

Project allows use of suitable on-site Riprap as designated on the plans. All of the other riprap material must come from a commercial source. Contractor must get CO approval on all riprap material to be used on this project.

### **Construction Requirements**

#### **251.04 Placed Riprap.**

#### **251.07 Acceptance.**

First two sentences: Delete the sampling and testing requirements of Table 251-1 and make inapplicable the certification requirements of Subsection 106.03.

### **Measurement**

#### **251.08**

Add the following:

Measure Check Dam Structures by the number of structures constructed.

## 608 – PAVED WATERWAYS

### Description

#### 608.01

Delete the entire subsection and replace with the following:

This work consists of constructing paved and lined ditches, gutter, spillways, and similar waterways.

Paved waterways are designated as follows:

Type 1 – High Density Polyethylene Ditch Liner.

Type 2 – Placed Riprap

### Material

#### 608.02

Delete the entire subsection and replace with the following:

Conform to the following Sections and Subsections:

Bed course	704.09
Granular backfill	704.03
Riprap rock	705.02
HDPE Ditch Liner	725.30
HDPE Mat	725.31
Self-tapping screws	725.32
Joint sealant	725.33
Earth anchor	725.34
Erosion control blanket	629

### Construction Requirements

### **608.03 General**

After the first paragraph, add the following:

High Density Polyethylene Lined Waterway-

Subgrade on which the HDPE lining will be placed shall be prepared to remove all large clumps, roots, brush, sod or rocks that might endanger the liner. Trim and remove any tree roots.

Remove unstable soils and replace with compacted granular backfill material. In rocky areas, a bedding layer of fine granular soil shall be provided as a protection against irregularities that cannot be removed. Subgrade shall be approved by the CO prior to installing the liner. The ditch shall be excavated to the shape and size of the HDPE ditch liner prior to placement.

The ditch subgrade of suitable material shall provide uniform and continuous support against the HDPE ditch liner sidewalls.

Bedding backfill and general installation requirements shall be in accordance with section 209 and manufacturer's recommendations.

The moisture content and methods of placing and compaction the material shall ensure a firm and stable embankment results. The fill material shall be placed in horizontal lifts of such thickness that proper compaction and prescribed densities are obtained. Fill material shall be compacted according to Section 209.

Install foam gasket sealant at each joint as supplied by the manufacturer. All joints shall be free of debris prior to placement. Contractor shall ensure a tight seal.

HDPE ditch liner sections shall be connected using self-tapping screws as supplied by the manufacturer. Install a minimum of 9 self-tapping screws per joint for the 24" trapezoidal HDPE ditch liner.

Earth anchor kits, as supplied by the manufacturer of the HDPE ditch liner, shall be installed to secure the HDPE ditch liner. At a minimum, install anchors at each joint and mid-section along the top knuckle on each side of the HDPE ditch liner. A minimum anchor depth of 30 inches is required.

HDPE ditch liners offers a variety of fitting pieces for trapezoidal HDPE ditch liners such as tees, bulkhead end sections, directional gates, and flared end sections. When these are specified on the plans, install as per manufacturers recommendation. These fitting must be supplied by the same manufacturer as the HDPE ditch liner. These fitting must seal, and be installed as per the manufacturer's recommendations.

In locations where the ditch will receive lateral flows, edge protection shall be installed. Edge protection shall be attached to the HDPE ditch liner, overlap the top knuckle and be buried into the side slope along ditch. Refer to standard detail drawings for edge protection.

All HDPE products shall have shop drawings and specifications submitted for approval to the CO prior to ordering any material.

**608.04 Grouted Rubble Paved Waterway (type 1)**

Delete the entire subsection:

**608.05 Mortared Rubble Paved Waterway (Type 2)**

Delete the entire subsection:

**608.06 Concrete and Rubble Paved Waterway (Type 3)**

Delete the entire subsection:

**608.07 Concrete Paved Waterway (Type 4)**

Delete the entire subsection:

**608.08 Asphalt Paved Waterway (Type 5)**

Delete the entire subsection and replace with the following:

**608.08 HDPE Ditch Liner Waterway (Type 1)**

**608.09 Placed Riprap Waterway (Type 6)**

Delete this subsection and replace with the following:

**608.09 Placed Riprap Waterway (Type 2)**

**608.10 Acceptance.**

Add the following:

HDPE ditch liner will be evaluated under subsections 106.02 and 106.03.

**Measurement**

**608.11**

Add the following:

Do not measure excavation required for construction of HDPE Ditch Liner and do not measure excess excavation placements.

## 625 – TURF ESTABLISHMENT

### Description

#### 625.01

Add the following:

Scarify and reseed all disturbed native soils including soils impacted from mobilizing equipment to the site.

### Material

**625.02** Conform to the following Subsection:

Seed	713.04
------	--------

### Construction Requirements

#### 625.03 General.

Add the following:

Seed all disturbed areas. The seed mix is as follows:

Slender wheatgrass (*Elymus trachycaulus* ssp. *trachycaulus*) variety Pryor

Rate: 10 lbs PLS/acre

Mountain brome (*Bromus marginatus*) variety Garnet preferred, Bromar acceptable

Rate: 10 lbs PLS/acre

Blue wildrye (*Elymus glaucous*) variety Elkton preferred, Arlington acceptable

Rate: 10 lbs PLS/acre

Sandberg bluegrass (*Poa sandbergii*) variety Canbar or High Plains Germplasm

Rate: 5 lbs PLS/acre

Conduct final cleanup of all trash and waste materials.

**625.04 Acceptance.** Turf establishment will be evaluated under subsections 106.02; 106.03 and 106.04. Submit seed product Certification for approval prior to ordering material.

## **Payment**

**625.06** The accepted quantities will be paid at the contract unit price per unit of measurement for the Section 625 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

## **629 - ROLLED EROSION CONTROL PRODUCTS AND CELLULAR CONFINEMENT SYSTEMS**

### **Construction Requirements**

**629.05 Erosion Control Blanket, Open Weave Textile, and Turf Reinforcement Mat (RECP, Types 1.B, 1.C, 1.D, 2.B, 2.C, 2.D,3.B, 4, 5.A, 5.B, and 5.C).**

First paragraph, add the following type of RECP:

RECP, Type 5.D, Permanent Turf Reinforcement Mat

Delete the third paragraph and replace with the following:

Use staples that are at least 24 inches long, of the type recommended by the manufacturer, to secure the RECP.

Add the following to this subsection:

Submit a material Certification for approval prior to ordering material.

## 704 – SOIL

### 704.03 Backfill Material.

**(b) For plastic pipe:**

Delete (b) and replace with the following:

**(a) For plastic pipe and HDPE Ditch Liner:**

## **705 – ROCK**

### **705.02 Riprap Rock**

Delete the second sentence of this subsection. Additionally delete the requirements specified for (a), (b), and (c).

**713.18 Permanent Rolled Erosion Control Products.**

Add the following:

**(d) Type 5.D, permanent turf reinforcement mat.** Furnish a non-degradable turf reinforcement mat with sufficient thickness, strength and void space for permanent erosion protection and void space for permanent erosion protection on geotechnical stable slopes up to 2V:1H, channels with design shear stress up to 16 pounds per square foot, and other areas where design flow conditions exceed the natural limits of soil stability.

Companies that have indicated they are manufacturers of materials or equipment as called for in this contract are:

Propex Operating Company, LLC  
 6025 Lee Highway, Suite 425  
 Chattanooga, TN 37422

Phone: (423) 899-0444  
 (800) 621-1273

www.geotextile.com

This manufacturer and its suppliers or an approved alternative must be utilized.

Delete Table 713-4 and replace with the following:

**Table 713-4  
 Permanent Turf Reinforcement Mat**

Properties <sup>(1)</sup>	Rolled Erosion Control Product Type				Test Method
	5.A	5.B	5.C	5.D	
Minimum tensile strength <sup>(2)(3)</sup> (pounds per foot)	125	150	175	3000	ASTM D4595
UV stability (minimum % tensile retention)	80	80	80	80	ASTM D 4355 (500- hour exposure)
Minimum thickness <sup>(2)</sup> (inches)	1/4	1/4	1/4	0.4	ASTM D 6525
Minimum permissible shear stress <sup>(4)</sup> (pounds per square foot )	6.0	8.0	10.0	16.0	ASTM D 6460 or other qualified independent test <sup>(5)</sup>

(1) For turf reinforcement mats containing degradable components, obtain all property values on the nondegradable portion of the matting alone.

(2) Minimum average roll values, machine direction only.

(3) Field conditions with high loading and high survivability requirements may warrant the use of turf reinforcement mats with tensile strengths of 3,000 pounds per foot or greater.

(4) Minimum shear stress the turf reinforcement mat (fully vegetated) can sustain without physical damage or

excess erosion (>1/2-inch soil loss) during a 30-minute flow event in large-scale testing. These performance test values should be supported by periodic bench scale testing under similar test conditions and failure criteria using Erosion Control Technology Council Test Method #3.

(5) Other large-scale test methods determined acceptable by the CO.

## **725 – MISCELLANEOUS MATERIAL**

### **725.30 HDPE Ditch Liner**

Add the following subsection:

Companies that have indicated they are suppliers of materials or equipment as called for in this contract are:

HD Fowler  
Bozeman Branch  
401 East Main Street  
Belgrade MT 59714  
Phone: (406) 388-1169

Northwest Pipe Company  
404 17th Ave Ne  
Great Falls, MT 59404  
Phone: (406) 727-9843

These suppliers or an approved alternative must be utilized.

### **725.31 HDPE Mat**

Add the following subsection:

The HDPE mat shall be high density polyethylene material. The minimum thickness of the liner shall be 30 mil. The HDPE mat shall meet the HDPE ditch liner manufacturer's recommendation.

### **725.32 Self Tapping Screws**

Add the following subsection:

The self-tapping screws shall meet the HDPE ditch liner manufacturer's recommendation.

### **725.33 Joint Sealant**

Add the following subsection:

The joint sealant shall meet the HDPE ditch liner manufacturer's recommendation.

### **725.34 Earth Anchor**

Add the following subsection:

The earth anchor shall meet the HDPE ditch liner manufacturer's recommendation.