Project Specifications for the Bandmann Flats Trailhead Improvements

Montana Fish, Wildlife, and Parks
FWP #76507

Missoula County, Montana

May 2021

BANDMANN FLATS TRAILHEAD IMPROVEMENTS
MISSOULA COUNTY, MONTANA
FWP # 76507
SPECIFICATIONS FOR WORK - TECHNICAL PROVISIONS

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SECTION 01000
DIVISION 1 – GENERAL REQUIREMENTS

This contract will be constructed and administered under the requirements of the Montana Public Works Standard Specifications (MPWSS), Sixth Edition, April 2010, as Amended, and all supplemental documents contained herein. The MPWSS are included in their entirety, as applicable, and as modified, amended, added, or replaced as follows:

01010	Summary of Work (MPWSS, as amended)
01030	Permits (Added Section)
01041	Project Coordination (MPWSS, as amended)
01047	Mobilization (Added Section)
01050	Field Engineering (MPWSS, as amended)
01300	Submittals (Added Section)
01400	Contractor Quality Control and Contractor Quality Assurance (MPWSS, as amended)
01500	Construction and Temporary Facilities (MPWSS, as amended)
01570	Construction Traffic Control (MPWSS, as amended)
01750	Final Cleanup and Closeout (Added Section)

SECTION 01010
SUMMARY OF WORK (MPWSS, as amended)

DELETE SECTION 01010 “SUMMARY OF WORK” IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING

“PART 1: GENERAL

1.1 SUMMARY

A. PROJECT LOCATION: The project is located on Deer Creek Road near East Missoula, Montana.

B. General work included in this section:

1. Furnish all labor, materials, and equipment required in accordance with provisions of the Contract Documents.

2. Completely coordinate with work of all other trades.

3. Although such work may not be specifically indicated, furnish and install all miscellaneous items incidental to or necessary to complete finish product as specified.

1.2 CONTRACT DOCUMENTS

A. Contract Documents are defined in Article 1 of the General Conditions, Paragraph 1.1 Basic Definitions, Section 1.1.1 Contract Documents.

1.3 WORK COVERED BY CONTRACT

A. Base bid work to be performed includes, but is not limited to:

Work generally consists of trail head improvements. Work will include the construction of access to Deer Creek Road, parking lot, vault toilet site preparation, sidewalk and trail construction, drainage basin, big block modular wall, large opening gate, excavation, embankments, seeding, restoration, and incidental construction.

Bid Alternative 1 generally includes the providing additional excavation and associated work to increase the gravel trail width from 5 feet to 10 feet.

1.4 CONTRACT TIME

A. Contract time shall be 90 calendar days. No additional days shall be allowed with the selection of Bid Alternate 1. Notice to Proceed is anticipated for June 28, 2021. Final project completion shall be in 2021.

B. Work associated with gravel trail needs to be completed by September 10, 2021 due to funding requirements.

1.5 OWNER FURNISHED ITEMS

A. Owner furnished items, as indicated on the plans, include the following:

- Vault Toilets

1.6 SALVAGED ITEMS

A. The following items shall be salvaged by Contractor and provided to Owner at a location determined by Owner or re-used on site as indicated on the plans:

- Large Landscape Rocks
- Vehicle gate

1.7 WORK SEQUENCE

A. General: Construct work in stages to allow for uninterrupted public access during construction to the extent possible. Coordinate construction schedule and operations, to include traffic control, with the Owner and Engineer. The Contractor shall plan, schedule, and coordinate his construction operations and activities in a manner that will facilitate the progress of the work included in these Contract Documents, while minimizing disruption and inconvenience of any landowners and general public. The Contractor shall maintain access for utility companies.

B. The Contractor shall develop and submit to the Owner and Engineer for approval an initial baseline construction schedule at, or prior to, the pre-construction conference. The schedule must be in conformance with the requirements of section 3.10 within the General Conditions.

C. The Contractor shall be required to attend weekly construction meetings with the Owner and the Engineer as required. Location and dates of these meetings shall be determined at the Preconstruction meeting. These meetings will be conducted to discuss the Contractor's schedule, progress, and to coordinate construction issues.

D. The Contractor shall coordinate all activities with the Engineer, Owner, landowners, and utility companies associated with the Project, and with any other contractors working within the Project limits. If the Contractor does not achieve any critical dates as listed below, the Owner shall have the authority to stop all other work on the Project until such critical work has been completed. The contractor shall have no claim for additional time or cost associated with such stoppage of work to complete the critical work item.

Listed below is a summary of the general project phasing, and includes an overall summary of the work to be performed and milestones that must be met by the Contractor. Critical schedule constraints are provided in **bold** lettering. Work elements shown are not necessarily on a critical path and may be done simultaneously. Critical work elements shown are not necessarily complete and others may occur as the Work proceeds. The Contractor shall submit a detailed

work sequence schedule to accomplish the Work in accordance with the General Conditions and these Special Provisions. The Contractor shall sequence all work to comply with critical dates and sequencing listed below. The Owner will perform any activities that are underlined, if any. All other activities shall be performed by the Contractor as part of the approved work sequence schedule. Refer to the Special Provisions for detailed specifications and conditions associated with each major area of work.

1. Contractor shall submit overall phasing plan, schedule of construction, and initial traffic control procedures as required by the specifications and special provisions for approval.

2. Contractor shall comply with Storm Water Pollution Prevention Plan and install all BMP's necessary prior to the start of construction.

4. The Contractor shall generally be able to work in the project area as desired with minimal restrictions with the exception of traffic control restrictions, and allowing for utility company access.

5. Contractor shall commence work on the gravel trail to ensure completion by September 10, 2021.

E. SEQUENCING: Sequences other than those specified above will be considered by the Owner and Engineer, provided they afford a benefit to public convenience, and follow the general guidelines provide within the special provisions. Owner and Engineer shall have final approval of phasing plan.

F. WORK HOURS: Work outside the regular working hours, including night work, weekends, and federal holidays will not be allowed without prior approval of the Owner, with evidence that it is in the interest of public convenience and timely completion of the project. No additional payment or contract time will be allowed if a variance is required. Regular work hours shall be 8 A.M. – 6 P.M., Monday – Friday.

1.8 Contractor USE OF PREMISES

A. Contractor shall delineate routes with traffic control devices as needed to facilitate access for utility companies and the Contractor's project needs. Contractor shall secure and safely store equipment and materials for the project duration."

1.9 DUST CONTROL

A. The CONTRACTOR shall be required to provide dust control throughout the duration of the Project. The Contractor shall use due diligence to water excavated materials, haul roads, etc. to the extent warranted to minimize dust impacts. All costs associated with dust control, including supply of water, shall be incidental to the work.

1.10 SUBSTANTIAL COMPLETION

A. All work associated with this project shall be Substantially Complete with all roadways open to traffic by the date, or within the number of Calendar days set forth in the Agreement. For the purposes of establishing when the project is Substantially Complete and suitable for its intended purpose, all components and work elements described on the plans and within the specification shall be complete with the exception of those items listed within Final Acceptance below.

B. Final Acceptance of total project: Additional work elements that shall be completed for Final Project Acceptance, and are not required for Substantial Completion, include:

1. Any required repairs to the Contractor staging and storage areas.

2. Final punchlist items specifically allowed by the Owner.

3. Final documentation as required within the General Conditions and specifications.

1.11 REGULATORY REQUIREMENTS

A. The CONTRACTOR shall comply with all Federal, State, and local laws, regulations, codes, and ordinance applicable to the Work.

B. References in the Contract Documents to local codes shall mean Lake County, Montana

C. Other standards and codes that apply to the Work are designated in the Specifications.

END OF SECTION 01010

SECTION 01030
PERMITS (Added Section)

PART 1: GENERAL

1.1 DESCRIPTION

A. This section specifies the requirements for Contractor to secure and comply with all local, state, and federal regulations required for the project. Contractor shall be responsible for obtaining all permits detailed within the Contract Documents or required by any local, state, or federal regulations, unless specifically stated within the Contract Documents that Owner will provide.

B. Contractor shall comply with Section 3.7 of the General Conditions.

1.2 PERMITS

A. The Contractor shall be required to secure and pay all fees associated with obtaining Authorization for Storm Water Discharge Associated with construction activity under the Montana Pollutant Discharge Elimination System (MPDES). All fees associated with this permit application and any subsequent annual fees or resubmittal fees will be paid for by the Contractor. See section 02270 for additional information.

Contractor should note that the storm water discharge permit does not cover construction dewatering associated with trench excavation. Any permitting required to discharge construction dewatering shall be obtained by the Contractor. The Contractor may contact the Montana Department of Environmental Quality to obtain permit applications and associated fees for construction dewatering.

B. Contactor will be responsible to acquire ALL additional permits necessary and to pay fees and charges for such, unless otherwise specified. Such permits may include, but no limited to; building permit fees, electrical, plumbing, sewer and water connection fees, impact fees, fess associated with construction water as required, and right-of-way permit fees.

1.3 OWNER PERMITS

A. FWP will obtain the septic permit for the latrine installations. FWP will also obtain the approach permit from Missoula County to include the new approach to Deer Creek Road.

PART 4: MEASUREMENT AND PAYMENT

4.1 PAYMENT

A. All fees associated with permit acquisition shall be incidental to other work items in the contract and no separate payment shall be made.

END OF SECTION 01030

SECTION 01041
PROJECT COORDINATION (MPWSS, as amended)

DELETE SECTION 01041 "PROJECT COORDINATION" IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

"PART 1: GENERAL

1.1 DESCRIPTION

A. This section specifies the requirements for coordinating, communicating, and sequencing the work under the Contract Documents with public and private parties.

1.2 COORDINATION WITH PUBLIC AND PRIVATE AGENCIES

A. UTILITY COORDINATION: Project work must be coordinated with the utility companies when working near existing facilities. Under no circumstances will a delay in coordination or working around utility facilities be considered as justification for additional compensation or additional extension of time. The Contractor shall be responsible to coordinate all installation of new utilities, and the bracing of existing utilities as shown on the plans or as needed during construction.

The Contractor's attention is directed to the utility facilities shown on the plans. Contractor shall work around and protect existing facilities which exist within the project boundary. Contact the respective utility representative prior to conducting any work in this vicinity.

Contractor shall coordinate all new utility installation as shown on the plans. Contractor shall accommodate the installation of new utilities and shall be responsible for contacting the utility companies and coordinating all phases of the dry utility installation for the project.

1. NorthWestern Energy – Electric/Gas: Contact Cory Monroe (406) 425-4626. Cory.monroe@northwesternenergy.com

2. CenturyLink – Telephone: Contact John Olson (406) 543-2218 . John.olson@centurylink.com

3. Spectrum – Communications: Contact Benny Murphy (406) 370-7205. Benny.murphy@chater.com

4. Blackfoot Communications – Telephone/Fiber: Contact Dan Patterson, (406) 541-5232.

PART 2: PRODUCTS – NOT USED

PART 3: EXECUTION

3.1 UNDERGROUND UTILITIES AND STRUCTURES

A. CONTRACTOR shall be required to contact the local one-call agency to verify the location of all underground utilities. Pipelines and other existing underground installations and structures in the vicinity of the work to be done hereunder are indicated on the plans according to information available. The Engineer and the Owner do not guarantee the accuracy of such information. The Contractor shall be required to verify and locate all other pipelines and other existing underground installations and structures in the vicinity of the work prior to beginning excavation.

Except where otherwise specified, any delay or extra cost to the Contactor caused by pipelines or other underground structures or obstructions not shown by the plans, or found in locations different from those indicated, shall not constitute a claim for extra work, additional payment or damages.

B. All utilities, when encountered, shall be supported, shored, and protected wherever exposed in the trench or other excavation. Any existing utility that is damaged during excavation shall be immediately repaired at the contractor's expense. All potholing of existing utilities required to perform the work shall be at the Contractor's expense.

PART 4: MEASUREMENT AND PAYMENT

4.1 PROJECT COORDINATION AND COMMUNICATION

A. Include all costs associated with coordination and project communications in other items of work included in the contract. No separate payment will be made for project coordination or communications."

END OF SECTION 01041

SECTION 01047
MOBILIZATION AND PREPARATORY WORK (*Added Section*)

PART 1: GENERAL

1.1 DESCRIPTION

A. Mobilization/de-mobilization and preparatory work will include allowance for performance and payment bond costs, insurance costs, move-in and move-out costs, and other preparatory costs.

PART 2: PRODUCTS – NOT USED

PART 3: EXECUTION – NOT USED

PART 4: MEASUREMENT AND PAYMENT

4.1 PAYMENT

A. Measurement and payment for mobilization/de-mobilization and preparatory work will be made at the lump-sum price listed in the contract for “Mobilization”. Progress payments for mobilization and preparatory work will be made as follows:

1. The total amount of premiums paid by the Contractor to obtain performance and payment bonds and specified insurance will be paid with the first monthly payment.

2. When five percent (5%) of the total original contract amount is earned from contract items other than mobilization/de-mobilization and preparatory work, $10,000 or fifty percent (50%) of the amount bid for mobilization and preparatory work (whichever is less) will be paid.

3. When ten percent (10%) of the total original contract amount is earned from contract items other than mobilization/de-mobilization and preparatory work, $10,000 or the balance of the amount bid for mobilization and preparatory work (whichever is less) will be paid.

4. If the amount bid for mobilization/de-mobilization and preparatory work exceeds the total under Items 2 and 3, the balance will be paid when the total original contract amount earned from proposal items other than mobilization/de-mobilization and preparatory work is thirty percent (30%).

5. Progress payments for mobilization/de-mobilization and preparatory work will be subject to retainage as provided by the General Conditions of the specifications.

END OF SECTION 01047

SECTION 01050
FIELD ENGINEERING (MPWSS, as amended)

PART 1: GENERAL

1.1 ENGINEERING SURVEYS

Delete Paragraphs A – D in their entirety and replace with the following:

"A. All work will be done to the lines, grades, and elevations shown on the plans.

B. The Engineer (Owner's Consultant) will be responsible for initial layout and construction staking, utilizing the Engineer's existing field control and coordinate data. 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 Engineer for adjustments before work affected is performed.

C. The Contractor shall keep the Engineer informed, a reasonable time (5 days) in advance of the times and places at which he wishes to do work, so the horizontal and vertical control points may be established and any checking deemed necessary by the Engineer may be done with reasonable notice to the Engineer and minimum delay to the Contractor.

D. The following construction staking will be provided by the Engineer. All other construction staking and layout is the responsibility of the Contractor (such as blue-topping).

1. Control points as shown on the Plans. Temporary benchmarks as needed (5 total).

2. Stake or paint demolition limits as determined adequate by Engineer.

3. Edge of sidewalk offset stakes with line and grade will be provided at 25' intervals, as well as any radius points and PC/PT points.

4. Edge of asphalt stakes at corner and roadway intersection points with grade.

5. Grade stakes with cut/fill and offsets for drainage basin.

6. Offset stakes with grades for big block modular wall.

7. Alignment stakes for gravel trail. Contractor responsible for elevations and cross slopes per the plans

E. Prior to commencing work, the Contractor shall carefully compare and check all drawings, each with the other that in any way affects the location or elevation of the work to be executed by him, and should any discrepancy be found, he shall immediately report the same to the Engineer for verification and adjustment. Any

duplication of work made necessary by failure and neglect on his part to comply with this function shall be done at his sole expense.

F. The Contractor shall be responsible to protect and preserve the established construction staking provided by the Owner until such staking is determined, by both Engineer and Contractor, to no longer be necessary to complete the work. Any restaking required due to Contractor destroying or disturbing construction staking shall be replaced by Engineer at a rate of $150.00/hr for a 2-man survey crew, and billed to the Contractor."

1.2 STREET MONUMENTS AND PROPERTY CORNERS

Add the following to paragraph A.

"If existing property pins and/or other monuments are disturbed during construction activities, the contractor will be responsible for the replacement of such monuments at no additional expense to the Owner."

PART 4: MEASUREMENT AND PAYMENT – NOT USED

Add the following:

"A. Any contractor staking or layout shall not be paid for directly and shall be considered incidental to the work. Contractor shall be responsible to reimburse Owner for any replacement staking at the rates indicated in section 1.1.F."

END OF SECTION 01050

SECTION 01300
SUBMITTALS (Added Section)

PART 1: GENERAL

1.1 SUBMITTAL REQUIREMENTS

A. The Contractor shall comply with the submittal requirements as indicated within section 3.12 and section 4.2.7 of the General Conditions. The following is a list of minimum submittal items required for the project.

1. Work schedule/Traffic Control Plans
2. Aggregate Materials, Including Moisture Density Curves
3. Asphalt Mix Design (current within 12 months)
4. Concrete Mix Design (current within 12 months)
5. Pavement Markings
6. Pin Down Curb
7. Pre-cast Modular Block Wall geotechnical investigation report prepared by a MT Licensed Professional Engineer
8. Pre-cast Modular Block Wall designs and shop drawings, sealed by MT Licensed Professional Engineer
9. Large Opening Swing Gate Shop Drawings
10. Sign Posts and Hardware
11. Seed Mix/Hydroseeding

PART 2: PRODUCTS – NOT USED

PART 3: EXECUTION – NOT USED

PART 4: MEASUREMENT AND PAYMENT

ADD THE FOLLOWING:

"4.1 All costs associated with the preparation and submittal of ALL submittals, including but not limited to; shop drawings, samples, schedules, and record drawings, shall not be paid for directly and shall be considered incidental to the work."

END OF SECTION 01300

SECTION 01400
CONTRACTOR QUALITY CONTROL AND CONTRACTOR QUALITY ASSURANCE
(MPWSS, as amended)

Delete SECTION 01400 “CONTRACTOR QUALITY CONTOL AND OWNER QUALITY ASSURANCE” in its entirety and replace with the following:

“SECTION 01400
CONTRACTOR QUALITY CONTROL AND CONTRACTOR QUALITY ASSURANCE
(MPWSS, as amended)

PART 1: GENERAL

1.1 DESCRIPTION

A. This section describes the Contractor Quality Control and Quality Assurance testing requirements in conformance with the General Conditions.

B. All work shall be tested and inspected to insure compliance with the contract documents. Complete payment will not be made until the Contractor has demonstrated that the work is compete and has been performed as required. If the Engineer 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 paid completely until the Contractor has corrected the deficiency.

1.2 REFERENCES

A. The following ASTM publication is a part of this specification.

ASTM E 329 – Evaluation of Testing and Inspection Agencies as Used in Construction.

PART 2: PRODUCTS – NOT USED

PART 3: EXECUTION

3.1 GENERAL

A. The Contractor shall employ and pay for the services of an independent testing laboratory to perform specified laboratory testing of materials and equipment prior to the start of construction. The Contractor shall perform:

1. Initial moisture/density proctor curves for all bedding, gravel bases, and borrow material. The maximum density curve and gradation shall be current (within the last 12 months). Contractor shall also provide a sieve analysis for base course, bedding, and surfacing materials.

2. Contractor shall supply mix designs for all concrete and asphaltic concrete surfacing. All mix designs shall be current (within the last 12 months).

B. The Contractor will employ and pay for the services of an independent testing laboratory to perform soils, asphalt, and concrete testing for determining compliance with the specifications during the course of construction. The Contractor shall schedule all such field testing. During the course of construction, the following minimum testing requirements will be required:

1. The Contractor shall provide in place field density tests. In place density tests for any backfill, embankment, trench excavation, subgrade, sub base and base course material shall, as a minimum, be required for the first lift of backfill for trenching operations to set a pattern of compaction, and at intervals of every 200'. In place density tests for surfaced areas shall, as a minimum, be required at intervals of two hundred (200') feet for subgrade and base courses. The Engineer has the right to require additional testing if, in the opinion of the Engineer, test data is not sufficient to compare conformance to the specifications for the overall Project.

   A minimum of the top six (6") inches of subgrade within the expansion areas, which are to be paved, shall be mechanically compacted until the material no longer responds to compactive efforts. All embankments shall be compacted for the full depth with 6" maximum lifts. The Engineer has the right to require the Contractor to perform density testing on subgrade materials if, in the opinion of the Engineer, the methods for compaction do not seem sufficient for the material being used.

2. Field samples shall be taken of the base, bedding, and cushion materials, and a sieve analysis run to compare to the approved gradation. A minimum of 2 field sieve analysis shall be performed for the base material, and 1 for the bedding material.

3. Contractor will be required to provide a minimum of 1 core sample of bituminous pavement for every 400 feet of roadway, and every 10,000 square feet of parking lot. The Engineer will determine core sample locations. Contractor shall provide certified laboratory results from the samples taken as to thickness and actual density.

4. The Contractor shall furnish certified results of a Marshall Test showing the bulk specific gravity determination, stability and flow data, and density and void analysis. Contractor shall complete a field marshal test during each day of paving, or a minimum of two field Marshalls for the Project. Field density testing shall be in conformance with Section 02510, paragraphs 3.9 and 3.28.

   The Contractor will provide the Engineer with copies of all testing results performed on the Project. All testing results shall be submitted and reviewed by the Engineer prior to the installation of subsequent material installation (i.e. base material tested and approved prior to paving).

5. Contractor shall provide a minimum of one set of concrete tests for every 50 cubic yards of concrete placed on the project. The first concrete pour

shall be tested. Concrete tests shall, at a minimum, include results for air, slump, and compressive strength.

Delete Part 4: MEASUREMENT AND PAYMENT in its entirety and replace with the following:

“PART 4: MEASUREMENT AND PAYMENT

4.1 PAYMENT

A. Contractor quality control and assurance testing shall be paid at the lump sum price submitted for “Contractor Testing”. Payment shall include all labor, equipment, materials, and incidentals to complete the testing requirements herein.

B. Minimal testing will be required if the bid alternative is selected. This testing will not be paid for separate, and shall be considered incidental to the testing in paragraph A.

END OF SECTION 01400

SECTION 01500
CONSTRUCTION AND TEMPORARY FACILITIES (MPWSS, as amended)

PART 1: GENERAL

1.1 CONSTRUCTION FACILITIES

Add the following to paragraphs:

"D. POWER - Contractor shall arrange for and provide all required power. All power for lighting, operation of the Contractor's plant or equipment, or any other use by the Contractor, shall be provided by the Contractor at their sole cost and expense. Power supply to facilities that will become a permanent part of the Project are the Contractor's responsibility until such time the Project has achieved Final Acceptance, at which time the Owner will become responsible for payment of such facility.

E. SANITARY FACILTIES/WATER – Contractor shall not use the existing facilities on the project site. This includes any potable water for sanitary facilities. Contractor shall provide all drinking water for personnel. Contractor shall be responsible to provide all water for executing the work, including any water necessary for testing operations. Contractor shall provide all sanitary facilities as required by laws and regulation. Not less than one sanitary facility for every ten personnel, to include contractor and subcontractor, shall be provided. Service, clean, and maintain all facilities and enclosures. Provide wash facilities for all personnel.

F. GARBAGE – Contractor shall not use Owner's receptacles or facilities for garbage collection. Contractor shall be responsible to use their own facilities for all garbage collection and disposal. Contractor shall provide bear-proof enclosures, and regularly dispose of waste off site."

1.5 HAUL ROUTES

Add the following to paragraph A:

"See Section 01570 Traffic Control for additional requirements of haul routes."

PART 4: MEASUREMENT AND PAYMENT

Delete 4.1 in its entirety and replace with the following:

"4.1 PAYMENT

A. Unless specifically noted otherwise, all construction and temporary facilities included in the work shall be incidental to other work items in the contract and no separate payment shall be made."

END OF SECTION 01500

SECTION 01570
CONSTRUCTION TRAFFIC CONTROL (MPWSS, as amended)

DELETE SECTION 01570 "CONSTRUCTION TRAFFIC CONTROL" IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

PART 1: GENERAL

1.1 SUMMARY

A. The Contractor shall schedule his construction operations in a manner which will assure that the safety and convenience of motorists, pedestrians, and residents and the safety of construction workers and the general public are adequately met at all times.

B. Contractor shall be responsible for the development and submittal for final approval of all traffic control procedures associated with the project. Contractor shall work closely with the Engineer, Owner, and Missoula County, in the development of the project phasing and associated traffic control measures, and shall follow all local and county standards in relation to any detours or road closures necessary to complete the work.

C. For questions related to traffic control procedures within Missoula County right-of-way, contact the Missoula County Public Works: (406) 258-4753.

PART 2: PRODUCTS

2.1 GENERAL

A. The Contractor is solely responsible for the construction traffic control devices, and the material, use, and types of all traffic control devices. All products used for traffic control shall meet the most recent requirements of OSHA and the MUTCD (Manual of Uniform Traffic Control Devices for Streets and Highways) and/or Local Standards.

PART 3: EXECUTION

3.1 SUMMARY

A. Construction phasing and traffic control will be critical components to the success of the Project. Contractor shall allow adequate time for review of each phase of traffic control. Contractor shall allow one-week (1-week) review time for traffic control phasing allowing single and double lane traffic. Contractor shall follow Missoula County traffic control standard/procedures when effecting county right-of-way.

B. The CONTRACTOR shall submit a detailed traffic control plan for each section of the project to the Engineer for distribution and review, as required. Prior to starting work or altering an approved segment of the traffic control plan, the Contractor shall submit to the described authorities, their plan for barricading, signing, detouring and securing the project area and its related traffic. The

Owner and Missoula County shall have final authority for the review and approval of traffic control and may direct the Contractor to provide additional items at no additional compensation if, in their estimation, the proposed plan does not adequately address the safety and convenience of the public and/or does not conform to the required standards. No work shall commence or advance until the related traffic control plan is approved. Therefore, the initial plan must be submitted prior to issuance of the Notice to Proceed. The Contractor shall then install all required traffic control facilities prior to commencing work and maintain such throughout the project. The Contractor shall notify any affected property owners a minimum of seventy-two (72) hours in advance of private driveway closures, and proof of such notices shall be provided to the Engineer before such closures can commence. Private driveways that are closed due to construction should be reopened as soon as possible.

C. Minimize impacts, to the greatest extent possible, by shortening the time that roadway and pedestrian routes are out of service. Remove, replace, and re-open for public access all trails or sidewalk segments as soon as possible.

3.2 TRAFFIC CONTROL SIGNING COMPLIANCE

A. The CONTRACTOR is solely responsible for the construction traffic control devices, and the material, use, and types of all traffic control devices shall meet the requirements of OSHA and the Manual of Uniform Traffic Control Devices (MUTCD).

3.3 NOTIFICATION OF CONSTRUCTION

A. The CONTRACTOR shall be responsible for notifying all State, County, City, local or private services, departments, agencies, or organizations whose normal or emergency services may be affected by the construction activity. Notification shall be made at least seventy-two (72) hours in advance of the proposed construction activity, and proof of such notices shall be provided to the Engineer before construction activities can commence. Immediately after the applicable construction activity has been completed, the notified department, agencies, or organizations shall be contacted and informed that the affected highway, road, street, alley, or access is open for normal traffic flow.

3.4 TRAFFIC CONTROL PROCEDURES

A. When construction operations are conducted along streets and roadways, the Contractor shall have proper signs and barricades in place at each side of the work site. All public thoroughfares that are closed to traffic shall be protected by means of effective barricades on which shall be placed acceptable warning signs. Barricades shall be located at the nearest intersecting public highway or street on each side of the blocked section. All barricades and obstructions shall be illuminated by means of warning lights at night. All lights used for this purpose shall be kept burning from sunset to sunrise. Materials stored upon or alongside public streets and highways shall be so placed, and the work at all times shall be so conducted, as to cause the minimum obstruction and inconvenience to the traveling public. All barricades, signs, lights and other protective devices shall be installed and maintained in conformity with applicable

statutory requirements and the authority having jurisdiction thereover. When it is necessary for the Contractor to leave a section of trench open, materials stockpiled or equipment parked alongside the street at the end of a work day, or prior to weekends or holidays, the Contractor shall, with the approval of the Engineer, install adequate barricades, vertical panels, or delineators at the work site. All private access shall be open at the end of each workday and on weekends and holidays unless otherwise approved. When trenching operations disturb the edge of the paved street so as to create a traffic hazard, vertical panels or delineators shall be placed, as approved by the Engineer, until the street is repaired. All signs and barricades shall be attached to portable mounts.

B. The Contractor shall have an emergency contact(s) available during all working and non-working hours, to include weekends and holidays, for notification of replacement, re-erection, or corrections to traffic control devices.

3.5 ACCESS FOR EMERGENCY SERVICES

A. Full time access to and from fire station(s) and other locations where emergency vehicles are housed will be provided. It shall be the Contractor's responsibility to coordinate with local emergency providers to determine emergency vehicle locations.

Delete Part 4: MEASUREMENT AND PAYMENT in its entirety and replace with the following:

"PART 4: MEASUREMENT AND PAYMENT

4.1 PAYMENT

A. Unless specifically noted otherwise, all traffic control associated with the work shall be incidental to other work items in the contract and no separate payment shall be made."

END OF SECTION 01570

SECTION 01750
FINAL CLEANUP AND CLOSEOUT ITEMS (Added Section)

PART 1: GENERAL

1.1 DESCRIPTION

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

PART 2: PRODUCTS – NOT USED

PART 3: EXECUTION

3.1 SITE CLEANUP

A. 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 other re-surfacing may be necessary to repair any construction related impacts or damage.

B. 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.

C. 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.

D. Clean all permanent traffic control devices and signs

E. Sweep all roadway and concrete surfaces free of debris.

F. Ensure all gravel is smooth and uniform and flush with adjacent surfacing unless otherwise indicated on the plans.

3.2 CLOSEOUT INFORMATION

A. Submit all record drawing information as required within the General Conditions.

B. Submit all operation and maintenance manuals (O&M Manuals) where applicable. Operation and maintenance data shall be submitted with 2 identical sets, and bound within three ring binders. Include all written warranties with the O & M manuals.

PART 4: MEASUREMENT AND PAYMENT

4.1 PAYMENT

A. 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 02000
DIVISION 2 – SITEWORK

This contract will be constructed and administered under the requirements of the Montana Public Works Standard Specifications (MPWSS), Sixth Edition, April 2010, as Amended, and all supplemental documents contained herein. The MPWSS are included in their entirety, as applicable, and as modified, amended, added, or replaced as follows:

02112	Removal of Pavement, Concrete, Curb, Sidewalks, Driveway, and/or Structures (MPWSS, as amended)
02115	PVC Coated Large Opening Swing Gate
02230	Street Excavation, Backfill, and Compaction (MPWSS, as amended) Attachment A – Geotechnical Report (January 13, 2017)
02235	Crushed Base Course (MPWSS, as amended)
02250	Watering (MPWSS, as amended)
02270	Soil Erosion and Sediment Control (Added Section)
02502	Asphalt Prime and/or Tack Coat (MPWSS, as amended)
02510	Asphalt Concrete Pavement (MPWSS, as amended)
02529	Concrete Sidewalk, Driveways, Approaches, Curb Turn Fillets, Valley Gutters, and Miscellaneous New Concrete Construction (MPWSS as amended)
02530	Precast Modular Block Wall System
02581	Pavement Markings and Markers (Pre-Formed Plastic, Paints, and Enamels) (MPWSS, as amended)
02585	Street Signs (MPWSS, as amended)
02735	Vault Toilet Site Prep (Added Section) Appendix A – Aspen Vault Toilet Specifications
02905	Tree Protection (Added Section)
02910	Seeding (MPWSS, as amended)

SECTION 02112
REMOVAL OF PAVEMENT, CONCRETE, CURB, SIDEWALKS, DRIVEWAY, AND/OR STRUCTURES (*MPWSS, as amended*)

PART 3: EXECUTION

Add the following:

"3.2 CUTTING OF PORTLAND CEMENT CONCRETE OR ASPHALT

A. Concrete areaways, curbs, driveways, pavements, sidewalks, and slabs will be cut in a manner and the extent specified herein or as directed by the Engineer. The outer edge of all cuts through concrete items will be sawn through to a depth of not less than thirty (30) percent of the total thickness by means of a power driven concrete saw. All cuts will be in a straight line perpendicular or parallel to the centerline of the excavation unless approved by the Engineer. Concrete and asphalt items encountered when excavating will be removed to a minimum width of 12 inches greater than the width of the trench. Where the cut line is less than 4 feet from the edge of the existing pavement, remove and replace the entire pavement section between the trench and edge of pavement unless otherwise approved by the Engineer.

B. Asphaltic surface cutting will be done with a power driven saw to the same requirements cited above. An excavator may use a backhoe bucket in removal of asphaltic surface; square cutting of asphaltic surface to follow backfill operation, with area to be square cut marked by the Engineer.

C. Asphalt cutting and removal shall be in a straight line that will provide for a uniform pavement patch.

D. Whenever an excavator is required to remove curb or sidewalk to perform the work, they will be allowed to, and required to reinstall such curbs and sidewalks to match existing:

1. The concrete curb and sidewalk replacement work will conform to the details on the plans and concrete forms will be inspected by the Engineer prior to placement of the concrete.

PART 4: MEASUREMENT AND PAYMENT

Delete Paragraphs 4.1 through 4.4 in their entirety and add the following:

"4.1 GENERAL

A. No separate measurement will be made for items associated with the removals as described within this specification and as shown on the plans, as well as any additional items/structures to be removed or temporarily relocated such as boulders, concrete and structure removals, removal and/or transplanting of landscaping items, and those items associated with Clearing and Grubbing and

any additional appurtenant work as required to complete the project. All costs for this item, including but not limited to, saw-cutting and removals, all excavation, trenching, backfill and compaction as required, suitable borrow material for compaction, loading, hauling, and removal from site, any dumping fees, labor, equipment, material, and incidentals required to complete removals as called for on the plans or as may be incidental to the work are to be included in the lump sum unit price for Clearing, Grubbing, and Demolition."

END OF SECTION 02112

SECTION 02115
PVC COATED LARGE OPENING SWING GATE (*Added Section*)

PART 1: GENERAL

1.01 SECTION INCLUDES

A. This section includes design, fabrication and installation criteria and detail for PVC Coated Heavy frame aluminum swing gates for large openings with chain link fabric.

1.02 REFERENCES

A. ASTM F 9005: Standard Specification for Industrial and Commercial Swing Gates. (2.02).

B. ASTM F 1083: Specification for pipe, steel, hot-dipped zinc-coated (galvanized) welded, for fence structures. (2.02).

C. ASTM F 2200: Standard Specification for Automated Vehicular Gate Construction (2.02.F).

D. U.L. 325: Safety Standards by Underwriters Laboratory. (2.02.F).

E. AWS D1.2/D1.2M: American Welding Society Structural Welding Code. (1.03.D and 2.01.F).

F. ASTM F668, Federal Specification RR-F-191/1E Type IV, AASHTO M-181 Type IV,Class A

1.03 SUBMITTALS

A. Shop drawings of fences and gates with all dimensions, details and finishes. Drawings must include post and cross-brace foundations.

B. Product data: Manufacturer's catalog indicating materials and a letter certifying that all conditions of the specifications have been met.

C. AWS welding procedure specifications. See 2.01.F. (upon request).

D. PVC coating

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. The gate shall be a Jamieson Series 8650 Industrial Heavy Aluminum Swing Gate as manufactured by JAMIESON MANUFACTURING CO. 4221 Platinum Way,

Dallas, TX 75237; PH: (888) 286-3362 www.jamiesonfence.com, or APPROVED EQUAL.

B. Substitution of products from other manufacturers who possess documented industry experience in the manufacturing of Industrial Heavy Aluminum Swing Gates will be considered by the architect as equal if they meet all specifications for fabrication, design, size and gauge of all component parts.

C. All requests for submittal of an approved equal must be made to and approved by the architect prior to the published scheduled bid date.

D. Upon written notification prior to weldment that gates require construction in a fabricating plant certified to AWS D1.2, manufacturer's fabricating plant shall provide proof of certification that:

1. All weld processes conform to documented Welding Procedure Specification and Procedure Qualification Record to insure conformance to the AWS D1.2 welding code.

2. All welders employed for welding under this specification have successfully completed the qualification requirements using the procedures of the AWS D1.2 Code. Individual Certificates of Welder Qualification shall be provided upon request.

2.02 ALUMINUM SWING GATE

A. Gate Frame Materials to be in accordance with ASTM F 900. (ref: 1.02.A).

1. Grade, Size and Weight: Structural aluminum as noted:

Component	Tube dimension	Min weight /LF (lbs)	Grade
Primary Vertical Hinge Side Member	2" x 5"	3.90	6061-T6
Primary Vertical Catch Member	2" x 5"	2.02	6063-T52
Top and Bottom Horizontal Members	2" x 5"	2.02	6063-T52
Primary Internal Vertical Members	4-1/2" x 3" I-Beam	2.71	6061-T6
Intermediate Vertical Members	1" x 2"	0.82	6063-T52

B. Construction:

1. Direction of swing and hinge placement for left-hand or right-hand swing is necessary in specifying or fabricating this gate.

a) Standard opening is 90˚ from the closed position. Openings that require more than a 90˚ swing must be specified on the submittal drawings prior to fabrication.

2. Primary Vertical Members are to be equidistant and not to exceed 6 ft. spacing.

3. Intermediate Vertical Members are to be equidistant between the Primary Vertical Members.

4. If chain link filler is used, horizontal tension bracing is provided at each end of the panel.

5. Trussing:

a) Each bay shall include four (4) ¼ in. thick aluminum gussets welded into each corner of the bay.

b) A ¼ in. stainless steel wire rope with turnbuckle (truss cable assembly) shall be provided in each bay to provide directional adjustment if lift is required.

i. Wire rope will be attached to the top gussets with a single cable thimble and a crimped cable clamp.

ii. Wire rope will be attached to a ½ in. x 6 in. galvanized turnbuckle with a crimped cable clamp. The turnbuckle will be attached to the bottom gusset to allow for adjustment

6. Gate frame construction shall adhere to standards set forth by UL325 and ASTM F2200 safety standards regardless of manual or automated operation. (ref: 1.02.C and 1.02.D).

C. Hardware:

1. All gate hardware; guide assemblies and hangers shall be manufactured from malleable iron, low carbon or pressed steel, galvanized as per ASTM A123 (ref: 1.02.B) after fabrication and furnished by the gate manufacturer.
7. Latches shall have a provision for locking devices.

D. Gate Frame Finish:

1. All gate materials shall be PVC coated.

2. Coating color: Brown, to be approved by the Owner.

E. Filler: Gates (regardless of manual or automated operation) shall adhere to the safety standards set forth by UL325 and ASTM F2200 (ref: 1.02.C and 1.02.D).

1. Chain Link Fence Fabric Filler:

    a. The chain link fabric filler shall 1-3/4” mesh size, 9 gage wire size with 6 gage PVC coated finished wire size.

    b. Assembly:

        i. Attach the fabric to the gate frame by inserting a steel tension bar vertically through the last link of the fabric at both ends of the gate frame.

        ii. The tension bars are secured to the gate frame by attaching steel tension bands around frame and through the last link of fabric containing the tension bar.

        iii. A tension wire shall be stretched and attached along the top and bottom of the fabric filler and attached to the gate frame with tie wires looped through provided slots in each of the aluminum gussets in the corners of each bay. This ensures that the fabric filler is taut and secure, thus adding support to the entire gate frame. Use standard fence industry aluminum ties to secure fabric in middle to primary and intermediate verticals.

2. Ornamental Picket:

    a. All vertical filler pickets shall be constructed from 1 in. x 1 in. x 0.125 wall square aluminum tubing members, 6063-T52 alloy, weighing no less than 0.516 lbs./ft.

    b. Pickets will not extend below the bottom rail (ref: 1.02.C and 1.02.D).

    c. Pickets are to be attached to rails by means of seam welding pickets to each rail at points of contact.

    d. Each seal-welded picket to have a minimum of 1/8 in. diameter weep hole within ½ in. of its base.

F. Hinge Specifications, Mounting and Hardware.

1. Hinges shall be 7 in. tall x 2-1/2 in. barrel hinges with a 1-¼ in. 303 stainless steel pin. Hinges shall include (2) ball bearings with grease fittings and be rated for a 3,000 lb capacity. The hinge must be greased at time of installation.

2. Manufacturer to provide detailed shop drawings of hinge assemblies.

a. Hinge attachment to gate frame: Hinge shall be welded to heavy gauge steel plate and bolted to the gate frame. Mating holes in the gate frame are to be drilled and sleeved to prevent member from tearing, collapsing or failing.

b. Hinge attachment to gate post: The hinges may be clamped or welded directly to the gate post.

c. All bolt-on hinge plates to be a minimum of ¼ in. thick steel plate with (6) pre-drilled holes unless otherwise specified.

3. Hinges shall be placed within 12 in. of the top and bottom horizontal member.

G. XLG Support Packages: If the gate leaf is over 18 ft. long, an extension package shall be provided to allow for elevating the end of the gate leaf. Manufacturer to provide detailed shop drawings prior to manufacture.

1. The extension package consists of 1 or 2 upper truss cable assemblies (determined by length of gate panel), a hinge end vertical member extension, an extended gate post, brackets and an upper hinge.

2. The height of the extended post and hinge member shall be equal to 18% of the overall gate leaf.

3. The upper hinge assembly and mounting brackets shall be placed between the extended post and hinge members and within 4 in. of the top.

4. Upper truss cable assemblies shall be made from ¼ in. stainless steel wire rope and include an adjustable turnbuckle to raise and support the nose of the gate to the proper elevation.

a. The upper end will be attached to the top hinge bracket plate with a single cable thimble and a crimped cable clamp.

b. The lower end will have a ½ in. x 6 in. galvanized turnbuckle with a crimped cable clamp. The turnbuckle will be attached to a gusset welded to the top horizontal frame member.

c. The gusset shall be placed a distance from the end of the gate leaf so as the upper truss assembly has a minimum of 15° slope.

5. Gate leafs over 30 ft. shall require support package XLG2 consisting of two (2) upper truss cable assemblies. The first support cable shall attach to the upper gate frame at the midpoint of the leaf and the second shall attach ¾ of the distance out to the latch end.

PART 3 - EXECUTION

3.01 POST INSTALLATION

A. Post sizes and footing specifications must be determined by the architect, engineer of record, manufacturer or other qualified resource specific to the project and approved by the architect or engineer of record.

B. Crown the finished concrete at the top of the grade point to shed water.

C. Check each post for vertical and top alignment.

3.02 GATE INSTALLATION

A. Install gate per manufacturer's instructions. Gate should be set level and swing freely, without resistance or binding.

B. Ensure all safety devices and signs are installed and in proper working order.

C. Attach latch and make sure that gate is received by latch in a secure manner.

3.03 CLEANING

A. Clean up debris and remove from the site.

PART 4 - MEASUREMENT AND PAYMENT

A. Measurement and Payment shall be at the LUMP SUM rate, as listed on the Bid Form for PVC Coated Large Opening Swing Gate. Payment shall include all labor, equipment, materials, and incidentals required to complete the work in conformance with the plans and specifications.

END OF SECTION

SECTION 02230
STREET EXCAVATION, BACKFILL AND COMPACTION (MPWSS, as amended)

PART 1: GENERAL

1.1 DESCRIPTION

Add the following paragraphs:

"B. This item shall also include provisions for clearing, grubbing and demolition, tree and stump removals, and topsoil stripping and replacement."

1.3 DENSITY CONTROL TESTING

A. Field Density Testing

Delete paragraphs 1 - 3 and replace with the following:

"1. Meet the quality control and quality assurance requirements of section 01400. Comply with density requirements included herein and within Attachment A. In-place field density tests for quality assurance are at Contractor's expense meeting AASHTO T191 (ASTMD1556), Sand Cone Method; or AASHTO T310 (ASTMD6938), Nuclear Densometer methods. Quality assurance field density testing frequency shall be per Section 01400. Any failing tests shall be re-compacted and retested at contractor's expense."

B. LABORATORY MAXIMUM DENSITY AND OPTIMUM MOISTURE

Delete Paragraph 1 in its entirety and replace with the following:

"1. Quality control and quality assurance tests will be made by the Contractor for each onsite natural soil or each source of off-site material, including any borrow material, to determine the laboratory maximum density values and optimum compaction moisture content under AASHTO T99 or ASTM D698."

PART 2: PRODUCTS

2.1 ON-SITE EMBANKMENT

Add the following paragraph:

"B. The SPECIAL BORROW area designated for the project is within the planned stormwater retention basin, north of the new parking lot. The bottom elevation of the basin should be uniformly over-excavated, as needed, to generate embankment material for the hardscape and trail areas. Borrow area shall be shaped and finished to the plan line and grades with topsoil and seeding as specified."

PART 3: EXECUTION

Delete paragraph 3.1 in its entirety and replace with the following:

"3.1 CLEARING, GRUBBING AND DEMOLITION

A. Contractor shall be responsible for all clearing, grubbing and demolition as indicated on the plans or required to construction the project. This item shall include removal of all asphalt, concrete items, signage, shrubs, vegetation, tree and stump removals, light poles, gates, incidental structures, miscellaneous surfacing and incidentals as indicated on the demolition plans or as required to construct the project. Not all items may be shown on the demolition plans that are required to be removed to complete the project. Contractor is responsible to review the project site prior to bidding the project to review clearing, grubbing and demolition items and include in their bid. Contractor will be required to fill the resulting voids of any demolition items in conformance with these specifications. Resulting voids shall be filled with suitable material from the site as approved by the Engineer. All areas shall be compacted to 98 percent of AASHTO T-99 if under roadway, or 95 percent of AASHTO T-99 if outside the roadway or trail prisms."

3.4 EXCAVATION

Change "95%" to "98%" of maximum laboratory dry density determined by AASHTO T99 within paragraphs 1. and 2.

Add the following paragraph:

"G. STRIP TOPSOIL AND VEGETATION - Contractor shall strip all existing vegetation and topsoil, approximately 18 inches thick based on site soil test pits taken in the vicinity of the trailhead area, over those areas required for new construction, to include areas of proposed roadways, sidewalks, trails and associated work. Topsoil shall be temporarily stockpiled on site at a location determined by Contractor and approved by Owner. Topsoil shall be redistributed for use in conformance with the plans. Excess topsoil at the end of the project shall be distributed on site in locations determined by the Owner and Engineer, uniformly graded and finished with seeding as specified. Topsoil removal shall be included within Excavation Above Subgrade quantities, with the exception of the trail construction. Topsoil removal, excavation and embankment to construction that trail shall be included within the Linear Foot price of Gravel Trail as listed on the Proposal.

Delete paragraph 3.5 in its entirety and replace with the following:

"3.5 DISPOSAL OF EXCAVATED MATERIALS

A. Disposal

1. Dispose of all materials associated with clearing, grubbing and demolition items off the project site, with the exception of topsoil or items indicated for salvage, in accordance with all applicable state and local regulations.

Locate and provide suitable disposal areas.

3.8 EMBANKMENT PLACEMENT AND COMPACTION

B. Compaction

Change “95%” to “98%” of maximum laboratory dry density determined by AASHTO T99 or ASTM D698.

3.9 SUBEXCAVATION/REPLACEMENT BELOW SUBGRADE

E. Change “95%” to “98%” of maximum laboratory dry density determined by AASHTO T99 or ASTM D698.

Add the following sections:

“3.11 WATERING

A. The Contractor shall be responsible for providing the water required for executing all work including, but not limited to, any water needed to comply with optimum moisture content for embankment, dust control, and any additional requirements. Contractor shall secure all permitting, if necessary, for any water proposed for use on the site.

3.12 TREE & STUMP REMOVAL

A. Contractor shall remove all trees and stumps required to construct the project to the plan lines and grades, and dispose of off-site. Removal of tree stumps shall include the complete root ball, and Contractor will be required to fill the resulting voids in conformance with these specifications. Resulting voids shall be filled with suitable material from the site as approved by the Engineer. All areas shall be compacted to 98 percent of AASHTO T-99.”

B. The Contractor may prune certain trees needed for access and construction purposes with the Engineer’s approval. Tree limbs will be sawn cleanly and any excess debris removed from the site. The Contractor will coordinate with the Engineer on which limbs if any will be removed. The Contractor will not remove any limbs other than what is necessary for access and construction purposes. Trees not requiring removal shall be protected in conformance with Section 02905.

3.13 SUMMARY OF QUANTITIES

A. The Excavation Above Subgrade (cut) and Embankment In Place (fill and/or borrow) quantity calculations are included within the grading plans. The excavation quantity was determined by taking the existing surface, and comparing it to the planned subgrade or finished grade as indicated within the table. Excavation quantity includes an allowance of 18 inches for topsoil removal, which is included within the excavation above subgrade quantity. The excavation quantities and borrow quantities listed in the Proposal are final, and

will not be adjusted unless a change is made to the plan line and grades as approved by the Engineer.

B. Topsoil removal is included within the excavation above subgrade calculations shown in the grading plans, with the exception of the trail construction. Topsoil removal and associated excavation and embankment shall be included within the Gravel Trail price as indicated within the Proposal (included Bid Alternate 1).

C. The Special Borrow quantity was determined by a calculated allowance for 18-inch topsoil removal within the roadway or parking lot prisms, and bringing borrow material in (embankment) to the planned subgrade elevations.

3.14 EXCESS EXCAVATION/TOPSOIL

A. Excess topsoil is anticipated on the project. Excess topsoil at the end of the project shall be distributed on site in locations determined by the Owner and Engineer, uniformly graded and finished with seeding as specified.

PART 4: MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Delete paragraph A. in its entirety and replace with the following:

"A. EXCAVATION ABOVE SUBGRADE – CUBIC YARD BASIS

1. Excavation Above Subgrade shall be paid for at the number of cubic yards listed in the Bid Form for "Excavation Above Subgrade". This quantity was computed from the plan lines and grades for the excavation required to construct new roadway, parking, drainage and wall areas as indicated on the plans. The excavation quantity listed in the Bid Form is final, and will not be adjusted unless a change is made to the plan line and grades. Payment shall be full compensation for all labor, equipment, tools, and incidentals necessary to accomplish all topsoil stripping, excavation, removals, hauling, disposal, and excavating to prepare the subgrade shown on the plans and described within these specifications. Suitable embankment material for site excavation that can be used for roadway or trail fill shall be considered incidental to excavation above subgrade.

2. Miscellaneous site grading such as backfill and restoration, items associated with erosion control (cut-off ditches, etc.), and any excavation work that may not be directly associated with the new roadway, parking, trail or drainage areas or not specifically shown on the typical sections or on the plans shall not be paid for directly, and shall be included in other pay items for which the grading is required."

B. SUBEXCAVATION/REPLACEMENT BELOW SUBGRADE

1. Delete "Subexcavation/Replacement Below" in the first sentence and insert "Excavation Above Subgrade – Cubic Yard Basis."

Delete the last sentence and add the following sentences:

"The holes created by the removal of unsuitable material shall be backfilled and compacted with suitable material generated on site from the excavation above subgrade if available. There will be no separate measurement and payment for backfilling with on-site material. If there is no suitable material on-site, then the holes shall be backfilled with special borrow as indicated below."

2. Payment is made under:

b. Delete paragraph in its entirety.

Delete paragraph C. in its entirety and replace with the following:

"C. SPECIAL BORROW

1. Special Borrow shall be paid for at the number of cubic yards listed in the Bid Form for "Special Borrow". This quantity was computed from the plan lines and grades for the embankment required to construct new roadway, parking and trail subgrade improvements as shown on the plans. The special borrow quantity listed in the Bid Form is final, and will not be adjusted unless a change is made to the plan line and grades. Special Borrow from shall be obtained for the storm detention areas indicated on the plans and described within the special provisions. Payment shall be full compensation all labor, equipment, tools, and other incidentals necessary to secure borrow material, haul, place, level, manipulate, compact the embankment material, and perform other work for embankment construction in accordance with the specifications."

Add the following paragraphs:

"4.2 CLEARING, GRUBBING AND DEMOLITION

A. Measurement and payment for clearing, grubbing, and demolition shall be paid for per the lump sum item listed in the Proposal. Payment shall include full compensation for all excavation, saw-cutting, removals, backfill and compaction as required, loading, hauling, and removal from site, any dumping fees, labor, equipment, material, and incidentals required to complete the work as shown on the plans and described within this special provisions. Tree and stump removals shall be considered incidental to clearing, grubbing, and incidentals.

END OF SECTION 02230

SECTION 02235
CRUSHED BASE COURSE (MPWSS, as amended)

PART 2: PRODUCTS

2.2 CRUSHED BASE MATERIAL

Delete "recycled concrete and/or asphalt" within paragraph A.

2.3 GRADATION

Add the following to the end of paragraph A:

"The material furnished shall meet the requirements of the ¾ inch minus gradation."

PART 3: EXECUTION

3.3 FILED DENSITY REQUIREMENTS

Delete paragraph C. in its entirety and replace with the following:

"C. Provide the watering and rolling required to obtain a minimum field density of 98 percent of maximum dry density as determined by AASHTO T99, in conformance with the geotechnical report contained within section 02230 Street Excavation, Backfill and Compaction (Attachment A). No separate compensation is made for rolling and watering the base course to achieve the compaction requirements."

PART 4: MEASUREMENT AND PAYMENT

Delete 4.1, 4.2, and 4.3 in their entirety and replace with the following:

"4.1 CRUSHED BASE COURSE

A. This item shall be measured and paid for by the square yard basis as indicated on the proposal. The square yard quantity was calculated off the plans for the roadway and parking lot construction areas as shown and per the details and typical sections shown on the plans. Payment shall be made under ¾" Minus Crushed Base Course for the thickness listed in the proposal, and shall constitute full compensation for furnishing, loading, hauling, spreading, blending, shaping, watering, and compacting the subgrade course material, and for all tools, labor and incidentals necessary to complete this item. The quantity listed in the bid form shall be final unless the Engineer approves a change to the plan lines and grades.

B. ¾" crushed base course used to construct the 2' gravel shoulders shall be measured and paid for per the Linear Foot of shoulder as indicated in the proposal.

C. ¾" crushed base course used to construct the gravel trail shall be paid for by the Linear Foot as listed in the Proposal, meeting the thickness and width as

indicated on the plans. Note: As indicated within Section 02230, the Linear Foot price for gravel trail construction (both base bid and Bid Alt 1), shall include the excavation above subgrade, embankment, and topsoil removal work to complete trail construction per the plan lines and grades.

D. Miscellaneous ¾" crushed base course used for those items not specifically called for payment above, shall not be paid for directly and shall be considered incidental to the item of work for which it is related. This shall include foundation gravels for concrete items, etc. shall not be paid for directly and shall be considered incidental to related bid item. "

END OF SECTION 02235

SECTION 02250
WATERING (MPWSS, as amended)

PART 1: GENERAL

1.1 WATERING

A. The Contractor shall be responsible for providing the water required for executing his work, to include, but not limited to, water used for dust control and water used to create adequate moisture content in material incorporated into the work.

PART 4: MEASUREMENT AND PAYMENT

4.1 PAYMENT

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

END OF SECTION 02250

SECTION 02270
SOIL EROSION AND SEDIMENT CONTROL (*Added Section*)

PART 1: GENERAL

1.1 SUMMARY

A. STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

1. The Contractor is responsible for creating and filing a Notice of Intent (NOI) Form and Storm Water Pollution Prevention Plan (SWPPP) for this project under the current Montana Pollutant Discharge Elimination System (MPDES) with the Montana Water Quality Division for storm water associated with construction activities. All fees associated with this permit application and any subsequent annual fees will be paid for by Contractor.

2. The Contractor shall be required to comply with all requirements of the 2018 (or current) "General Permit for Strom Water Discharges Associated with Construction Activity" (General Permit). The Contractor shall create a Storm Water Pollution Prevention Plan (SWPPP), and update this plan as required during construction for mitigating erosion and sediment control. The Contractor is responsible for installing, maintaining and preserving all erosion control measures for the Project in conformance with the SWPPP and any Montana Department of Environmental Quality and EPA regulations related to storm water discharge. The Contractor shall be responsible for performing all Monitoring, Reporting, and Records Retention Requirements per the General Permit. The Contractor shall be responsible to make any necessary changes to the SWPPP to prevent damage as a result of storm water runoff from this site using Best Management Practices.

3. The Contractor must have a copy of the NOI Receipt Confirmation Letter from DEQ providing coverage to discharge storm water under the General Permit, a copy of the SWPPP, and copies of the Contractor's reporting documentation on site at all times during construction. The Contractor is solely responsible for any and all damages and/or fines that may result from runoff from this site during the duration of this contract. The Contractor shall provide all monitoring and reporting records to the Engineer. The Contractor shall submit all monitoring reports within 2 days after completion of the report. Additionally, Contractor shall keep a copy of their updated SWPPP map on site at all times, and this map shall show all current locations of BMP's on the project.

4. The Contractor shall be responsible to maintain all erosion control measures throughout the warranty period. Once final stabilization of the Project is complete, the Contractor shall be responsible to remove erosion control measures, such as silt fencing, that are no longer necessary to contain sediment. The Contractor shall notify the Fish,

Wildlife and Parks, prior to final acceptance or any specified warranty period, when such erosion control measures will be removed, and this work shall be considered an item covered by the Project warranty.

5. Any penalties due to non-compliance with the General Permit requirements shall be the responsibility of the Contractor.

6. The Contractor is responsible to submit Notice of Termination (NOT) form when the construction activity is complete and the site has achieved final stabilization.

7. The Contractor shall provide copies of all documentation related to storm water permitting efforts, to include copies of the NOI and SWPPP, the NOI Receipt Confirmation Letter, monitoring reports, NOT, and any related documents.

B. Contractor should note that the storm water discharge permit does not cover construction dewatering associated with trench excavation. Any permitting required to discharge construction dewatering shall be obtained by the Contractor. The Contractor may contact the Montana Department of Environmental Quality to obtain permit applications and associated fees for construction dewatering.

C. Contractor shall be responsible for all permits fees, including any fees associated with re-application or renewal.

1.3 QUALITY ASSURANCE

A. Requirements of regulatory agencies:

1. Comply with all applicable requirements of local, state, and federal agencies.

2. Comply with the State of Montana DEQ, Water Quality Act 75-5-318 MCA.

B. The temporary erosion control plan should consider staging of construction and should address movement of sedimentation fences as construction progresses, temporary seeding and use of mulch, netting, sod, etc.

1.4 SUBMITTALS

A. Submit copies of all documents required for permitting and authorizations as specified within this section or as required by all local, state and federal regulations.

B. Provide all written reports required by the permitting authority.

C. Comply with the submittal requirements of Section 01300.

PART 2: PRODUCTS

2.1 GENERAL

A. Products used for Erosion Control and Best Management Practices shall be in conformance with the details on the plans, and shall meet all local, state, and federal standards.

PART 3: EXECUTION

3.1 EROSION CONTROL MEASURES

A. The Contractor shall comply with all requirements of the SWPPP and General Permit. The Contractor shall monitor the site per the General Permit and make any changes to the SWPPP to add or amend the erosion control measures. All erosion control BMP's shall be in place prior to the start of construction disturbance in the effected area. The following general guidelines shall be used to control erosion:

1. Route existing surface runoff and underground drainage within the project area to sediment basins, and pipe the flow to the nearest catch basin before final discharge.

2. Divert surface waters that would otherwise enter the project area to prevent their contamination.

3. Minimize the area of unprotected soil.

4. Stabilize exposed soil as soon as practical.

5. Trap transported sediments before entering the state water bodies.

6. Incorporate permanent erosion control features as need to control sediment from leaving the site.

7. Reseed disturbed areas as soon as practical.

8. Inspect regularly especially after rainstorms per the monitoring requirements.

9. Repair or replace any damaged or missing items.

10. Minimize disturbance to any existing vegetation (grass and trees).

B. Contractor shall install BMP's as indicated within their SWPPP, and as called for on the erosion control plans. All BMP's, whether temporary or permanent, shall be included in the pay item for erosion control.

PART 4: MEASUREMENT AND PAYMENT

4.1 Payment associated with soil erosion and sediment control, to include all permitting, shall be included within the pay item “Erosion Control”, as listed on the Proposal. Payment shall include all costs associated with preparation and submittal of NOI and SWPPP to DEQ, all associated fees and costs associated with complying with all implementation and documentation under the MPDES General Permit. This item shall include all installation, maintenance, and removal (if required) of all sediment control structures and BMP’s, temporary and permanent, included in the SWPPP and on the plans, and necessary to comply with local, state, and federal standards. This work shall also include any work associated with monitoring and reporting for permit compliance.

END OF SECTION 02270

SECTION 02502
ASPHALT PRIME AND/OR TACK COAT (MPWSS, as amended)

PART 1: GENERAL

1.1 DESCRIPTION

Add the following:

"B. Tack coat shall be applied to all existing asphalt or concrete surfaces prior to asphalt installation. All surfaces shall be cleaned immediately prior to applying tack coat material. Clean the surface of all dust, dirt, sand or other objectionable material that prevents uniform coverage or bond between the tack material and the street surface, using a rotary power broom or blower, by hand sweeping, or both, as required. Do not mix material removed from the surface with the tack coat application."

PART 2: PRODUCTS

2.1 GENERAL

A. Use asphalt material as follows:

Type and Grade	Use
Emulsified Asphalt, SS-1 or SS-1h	Asphalt Tack Coat

PART 4: MEASUREMENT AND PAYMENT

Delete 4.1, 4.2, and 4.3 in their entirety and replace with the following:

"4.1 ASPHALT TACK COAT

A. No separate measurement or payment will be made for this item. Payment for this work will be subsidiary to other pay items."

END OF SECTION 02502

SECTION 02510
ASPHALT CONCRETE PAVEMENT (MPWSS, as amended)

PART 2: PRODUCTS

2.2 PLANT MIX AGGREGATES

Add the following sentence to the end of paragraph E.:

"The use of reclaimed asphalt pavement shall only be allowed with prior approval of the Engineer and Owner."

Add the following sentence to the end of paragraph I:

"The gradation for this Project will be Type B."

2.3 ASPHALT BINDER MATERIAL

Add the following sentence to the end of Paragraph A.:

"Use (PGAB) PG 58-28 or equivalent."

2.5 COMPOSITION OF MIXES

A. General

Add the following:

"5. Current job mix is defined as a mix design done within the last 12 months in which no change in material sources or amounts has been made."

PART 3: EXECUTION

3.16 SPREADING AND FINISHING

A. Spread and finish meeting the following requirements

Change "2-1/2 inches" to "3 inches".

3.29 PAVEMENT AND MATERIAL TESTING REQUIREMENTS

Add the following:

"G. The CONTRACTOR shall provide one asphalt core sample for every 400 linear feet of asphalt roadway, and every 10,000 square feet of parking lot area. The location of the core will be specified by the ENGINEER.

H. Pavement thickness will be a minimum as indicated on the plans, with a maximum tolerance of ¼-inch. The OWNER has the right to reject all pavement that does not meet the minimum thickness requirements, and these sections

shall be removed and replaced at no cost to the OWNER.

"PART 4: MEASUREMENT AND PAYMENT

4.1 TONNAGE BASIS - Delete

4.2 SQUARE YARD BASIS

A. Asphalt Concrete Pavement

Delete items 1. ,3., and 5. and replace with the following:

"1. 3" Thickness of Asphalt Concrete Pavement Surface Course, Grade "B"" shall be measured by the square yard of asphalt pavement surface area. The quantity listed in the Bid Form was computed from the plan lines and grades for the asphalt required to construct the roadway alignment and parking areas as shown on the plans. The square yard asphalt quantity listed in the Bid Form is final, and will not be adjusted unless a change is made to the plan line and grades approved by the ENGINEER.

Measurement for payment shall be based off the plan area and per the square yard quantity listed in the Proposal. Field measurements will not be performed. Payment shall be full compensation for producing, furnishing, transporting, stockpiling, heating, drying and screening of aggregate materials; for furnishing, handling, measuring, mixing, manipulating and placing of materials; for hauling, placing, shaping, compacting and finishing of the paving mix; for improving unsatisfactory areas; for furnishing samples; for all materials, manipulation, labor, tools, equipment and incidentals necessary to complete the work in full compliance with the plans and specifications.

END OF SECTION 02510

SECTION 02529
CONCRETE SIDEWALKS, DRIVEWAYS, APPROACHES, CURB TURN FILLETS, VALLEY GUTTERS, AND MISCELLANEOUS NEW CONCRETE CONSTRUCTION (*MPWSS as amended*)

PART 1: GENERAL

1.2 REFERENCES

Delete Paragraph A. in its entirety and replace with the following:

"A. Refer to applicable details on the plans."

Add the following section:

"1.3 CERTIFIED FLATWORK FINISHER

A. Contractors bidding on the project to have at least one (1) American Concrete Institute (ACI) Certified Flatwork Finisher available on-site at all times during placement and finishing of concrete."

PART 2: PRODUCTS

2.1 STRUCTURAL CONCRETE

Delete paragraph A. in its entirety and replace with the following:

"A. Furnish structural concrete meeting the requirements of Section 03310, STRUCTURAL CONCRETE. Concrete for use on this project shall be Portland cement with a minimum cement content of 564 lb/cy. No fly ash or slag will be accepted in the mix without written approval from the Engineer. All concrete shall be cured meeting the requirements below and Section 03310."

Delete Section 2.5 in its entirety and replace with the following:

"2.5 CURING AND PROTECTIVE COATING MATERIALS

"A. Curing Concrete: Contractor shall utilize a concrete curing compound on all concrete surfaces.

CURING COMPOUND: Clear spray Applied Membrane Forming Liquid conforming to ASTM C309-81, Type 1. Curing compound shall not reduce bonding or adhesion of finish materials applied to concrete surfaces.

1. Water-Based Acrylic Membrane Curing compound: ASTM C309, Type I, Class B.

a. Provide material that has a maximum volatile organic compound (VOC) rating of 350 g/L.
b. Available Products: Subject to compliance with

requirements, products that may be incorporated into the work include, but are not limited to the following:

- Highseal, Conspec Marketing and Mfg. Co.
- Sealco – VOC, Cormix Construction Chemicals
- Safe Cure and Seal, Dayton Superior Corp.

2. Evaporation Control: Monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.

   a. Available Products: Subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to, the following:
   - Aquafilm, Conspec Marketing and Mfg. Co.
   - Eucobar, Euclid Chemical Co.
   - E-Con, L&M Construction Chemicals, Inc."

PART 3: EXECUTION

3.2 FOUNDATION PREPARATION

B. Change "3 inches" to "4 inches minimum."

3.3 FORMS

Add the following paragraphs

"C. Contractors shall check with the Engineer prior to any pour for verification as to correctness of forms prior to any ordering of concrete.

D. The contractor shall verify that all sidewalk, laydowns, driveways, and miscellaneous concrete construction meet applicable Federal, State, and local ADA standards prior to pouring concrete."

PART 4: MEASUREMENT AND PAYMENT

Delete Paragraphs 4.1, 4.2, 4.3, 4.4, and 4.5 in their entirety and replace with the following:

"4.1 4" THICKNESS CONCRETE SIDEWALK

A. Concrete surfacing shall be measured and paid for per the square foot for the thickness and type indicated in the Proposal. Payment is full compensation for all material, excavation, foundation gravel materials, backfill, forming, curing of concrete, equipment, tools and labor, and for work and incidentals necessary to complete this item in place.

B. Unless specifically listed for payment within section 02235 Crushed Base Course, all foundation gravel for concrete shall be considered incidental to payment of the concrete listed in paragraph A. above."

END OF SECTION 02529

SECTION 02530
PRECAST MODULAR BLOCK WALL SYSTEM (*Added Section*)

PART 1: GENERAL

1.1 DESCRIPTION

A. Contractor shall design, fabricate, furnish, and erect an engineered retaining wall system. Design and construct the retaining walls at the locations specified, and in conformance with, the lines and grades shown on the Plans or as directed by the Engineer.

B. Retaining wall system designs shall be prepared and sealed by a Professional Engineer in the State of Montana. Wall foundation and drainage system design shall be based on Contractor acquired Geotechnical analysis. The Geotechnical analysis shall be prepared and sealed by a Professional Engineer in the State of Montana.

PART 2: PRODUCTS

2.1 GENERAL

A. Retaining wall system shall be Redi Rock large block modular wall system or approved equal. Wall system shall be designed to meet the dimensions as shown on the Plans. Engineer shall determine if substitutes are an approved equivalent.

B. The rock face finish shall be “limestone” texture. Color to be selected by the Owner from standard available colors. Contractor to submit colors to Engineer for approval prior to ordering materials.

2.2 DESIGN

A. Contractor to submit two (2) hardcopies of the working drawings, two (2) copies of the design calculations, and two (2) copies of the Geotechnical analysis and an electronic copy (PDF) of each for the retaining wall design submittal to the engineer. Do not begin precast gravity wall construction until the design submittal is accepted. Allow one (1) week for Engineer to review submittals for general compliance with plans and specifications.

2.3 MATERIALS

A. Retaining wall units and pin connecters shall meet the retaining wall manufacturer’s requirements.

B. Geotextile filter fabric shall meet the retaining wall manufacturer’s requirements.

C. Base leveling pad material, backfill material, and any geogrid soil reinforcement shall meet the manufacturer’s requirements and be approved by the geotechnical engineer.

D. Underdrain pipe shall meet the requirements of the retaining wall design engineer.

2.4 DRAINAGE

A. Internal and external drainage shall be evaluated and specified by the professional Engineer responsible for the final wall design.

2.5 ANTI-GRAFFITI COATING

A. Furnish a non-sacrificial anti-graffiti coating per the Section 710.04 of the MDT Standard Specifications.

B. Furnish a permanent, non-sacrificial siloxane-based anti-graffiti coating capable of withstanding multiple cleanings. Coating must allow graffiti to be removed through the use of a water pressure washer and without detergents or chemicals. Product must be approved by the manufacturer for use on the intended material or surface and have a finished dry film thickness of not less than 6 mils (0.150 mm). Remove any graffiti prior to application of an anti-graffiti coating. Prepare the substrate surface, apply, cure, and maintain coating in accordance with the manufacturer's recommendations.

C. Anti-graffiti coating shall be Sherwin-Williams Anti-Graffiti Coating or approved equal.

PART 3: EXECUTION

3.1 GENERAL

A. Contractor shall comply with all manufacturer recommendations and specifications for the installation of the wall system.

B. Contractor shall be responsible for acquiring any temporary construction easements required for the construction of the wall or other associated activity.

PART 4: MEASUREMENT AND PAYMENT

4.1 Measurement and Payment for the engineered wall system shall be paid for by the square foot of exposed face of "Precast Modular Block Wall (Exposed Face)" as listed in the proposal. The wall height is equal to the difference between the top and bottom of wall elevation. The top of wall elevation is defined as the top of cap/top precast units. The bottom of wall elevation is defined as where the finished grade intersects the front face of the wall. No payment will be made for the portions of walls below bottom of wall elevations.

Payment shall be full compensation for all design, geotechnical analysis, submittals, furnishing labor, tools, equipment and wall materials, excavating, backfilling, hauling, and removal of excavation materials and providing wall systems complete, including any drainage considerations, fabrics, free draining backfill, backfill, restoration, and any incidentals necessary to design and construct the retaining walls in accordance with the plan lines and grades and per these specifications.

No separate payment will be made for any temporary shoring required for wall construction. Temporary shoring for wall construction will be considered incidental to the contract unit price bid for “Precast Concrete Block Retaining Wall (Exposed Face)”.

4.2 Anit-Graffiti Treatment

Anti-Graffiti Treatment shall be measured and paid for per the Lump Sum as listed on the bid form. Payment shall include all labor, materials, equipment, and incidentals, to prep wall surface and apply treatment per the specifications and Manufacturer’s recommendations.

END OF SECTION 01030

SECTION 02581
PAVEMENT MARKING AND MARKERS
(PRE-FORMED PLASTIC, PAINTS AND ENAMELS) (MPWSS, as amended)

PART 1: GENERAL

Delete paragraph 1.1 in its entirety and replace with the following:

"1.1 DESCRIPTION

A. This work includes painting pavement lines and symbols as described on the plans and within these specifications. All pavement markings shall be waterborne paint and shall meet the requirements herein, and in conformity with the lines and dimensions shown in the contract documents or established by the Owner or Engineer."

PART 3: EXECUTION

3.2 PAINTING TRAFFIC LINES

Delete paragraph C in its entirety and replace with the following:

"C. Before applying paint, Contractor shall be responsible for all layout of pavement markings using the dimensions indicated on the plans."

PART 4: MEASUREMENT AND PAYMENT

Delete Paragraph 4.1 in its entirety and replace with the following:

"4.1 PAVEMENT MARKINGS

A. All pavement markings shown on the plans and described within these specifications shall be waterborne paint. Include all costs associated with providing pavement markings in the lump sum price bid for "Pavement Markings" as listed on the Proposal. Price and payment is full compensation for the work, including all labor, materials, final striping layout, coordination with Engineer and equipment used in the work."

END OF SECTION 02581

SECTION 02585
STREET SIGNS (A*dded Section*)

PART 1: GENERAL

1.1 DESCRIPTION

A. This work involves providing and installing new signs and posts per the details on the plans.

PART 2: PRODUCTS

2.1 STREET AND TRAFFIC CONTROL SIGNS

A. Provide sign and post installation per the details and locations as indicated on the plans.

PART 3: EXECUTION

3.1 INSTALLATION

A. All traffic signs proposed for the project shall be installed per the details shown on the plans.

B. All traffic sign installations, to include final locations, must be approved by the Engineer prior to installation.

PART 4: MEASUREMENT AND PAYMENT

4.1 SIGNS

A. New sign installation shall be paid for per the each for “Street Sign” as indicate in the Proposal. Measurement and payment shall include sign face, sign post, sign mounting hardware, foundation gravel, excavation, backfill and compaction, installation and all labor, materials, and incidentals to complete sign installation. Relocation of street signs, where indicated, shall be paid for as a new street sign installation.

END OF SECTION 02585

SECTION 02735
VAULT TOILET SITE PREP (*Added Section*)

PART 1: GENERAL

1.1 DESCRIPTION

A. This item shall include the coordination, site preparation, backfill, and restoration associated with the installation of a vault toilet. Montana Fish, Wildlife and Parks currently has a vault toilet that will be installed for this project and will deliver and install on the site prepared by the Contractor. Contractor shall prepare the site and excavation, coordinate delivery and installation of the toilet, and complete backfill and final restoration.

B. Vault toilets shall be supplied by Owner. Contractor shall coordinate all site delivery with Mike Kustudia of FWP. Vault toilets shall be delivered and set by Missoula Concrete.

1.2 PRODUCTS

A. Vault toilet will be the “Aspen Vault Toilet” as manufactured by Missoula Concrete Construction. Vault toilet specifications are included within Attachment A for Contractor’s reference.

PART 2: PRODUCTS

1.1 GENERAL

A. Products used for vault toilet site preparation and finish shall be as indicated in the details on the plans.

PART 3: EXECUTION

1.1 GENERAL

A. Vault toilet site preparation shall be performed to meet the details on the plans, and in conformance with manufactures specifications included in Attachment A. Excavation shall meet the width, depth, and elevations as indicated on the plan details. Compact foundation gravels to 98% maximum dry density per AASHTO T99. Backfill and compact vault in minimum 8” lifts, meeting 95% maximum dry density per AASHTO T99. Complete all restoration items to finish grade, ensuring positive drainage away from structure. Complete all restoration, to include any seeding and path construction to new toilet as indicated on the plans.

PART 4: MEASUREMENT AND PAYMENT

4.1 VAULT TOILETS

A. Measurement for payment for “Vault Toilet Site Prep” as listed in the proposal shall be per the each as listed in the Proposal. Payment shall include all work associated with site excavation, foundation materials and preparation,

coordination of vault installation, backfill and compaction, site restoration, electrical coordination, and all labor, equipment, materials, and incidentals to complete item in place.

END OF SECTION 02735

02735 VAULT TOILET

ATTACHMENT A

ASPEN VAULT TOILET SPECIFICATIONS

Missoula Concrete Construction

pci CERTIFIED PLANT

www.missoulaconcrete.com

Phone (406) 549-9682 FAX (406) 549-6404

P.O. Box 16086 Missoula, MT 59808-6086

Aspen Vault Toilet Specifications

Missoula Concrete Construction

Missoula Montana

Specifications for Aspen Style Vault Toilet Buildings

1.0 SCOPE

This specification covers the construction and placing of the Aspen Style precast concrete vault toilet building as produced by Missoula Concrete Construction.

2.0 SPECIFICATIONS

ASTM C33	Concrete Aggregates
ASTM C39	Method of Test for Compressive Strength of Cylindrical Concrete Specimens
ASTM C143	Method of Test for Slump of Concrete
ASTM C150	Standard Specification for Portland Cement
ASTM C192	Method of Making and Curing Test Specimens in the Laboratory
ACI 1211.1	Recommended Practice for Selecting Proportions for Normal and Heavyweight Concrete
PCI MNL 116	Quality Control for Plants and Production of Precast Prestressed Concrete Products
AWS D1.1	Structural Welding Code

3.0 DESIGN CRITERIA

The Aspen has been designed to meet the following criteria. Calculations and Engineer's stamped drawings are available upon request by the customer and are for their sole and specific use only. The design criteria are to ensure that the Aspen not only will withstand the forces of nature listed below but to provide protection from vandalism and other unforeseen hazards.

A. Snow Load

The Aspen will withstand a snow load of 250 pounds per square foot.

B. Wind Load

The Aspen will withstand the effects of 120 mile per hour wind load (fastest mile) or 180 mph (3 second-gust) Exposure C.

C. Earth Quake

The Aspen will withstand the effects of a zone 4 earthquake.

D. Additional Design Standards

1. The Aspen is designed to meet the requirements of the Americans with Disabilities Act Requirements and Uniform Federal Accessibility Standard including as of the date of these specifications.

2. The Aspen incorporates all design aspects of Sweet Smelling Technology as outlined by Brian Cook for the U.S. Forest Service. ("In Depth Design and Maintenance Manual for Vault Toilets" - July 1991 - Publication No. 9123 1601)

3. The Aspen has a one-piece vault unit to support the building, screen area and snow loads evenly. The Aspen has a one piece prestressed floor unit with a 250 psf load capacity to withstand transportation stresses.

E. Tolerances

Tolerances will be within the limits as dictated by the PCI Quality Control and Assurance Manual.

4.0 MATERIALS

A. Concrete - General

This concrete mix design is designed to ACI 211.1 to produce concrete of good workability.

Mix #7.25 R - 1 cubic yard
cement 681 lbs.
water 232 lbs. (27.8 gal.)
w/c=.34
Course aggregate (SSD) 1,800 lbs.
Fine aggregate (SSD) 1,196 lbs.
Water Reducing Agent 34 oz. MB 322N
Air Entraining Agent 6 oz. MB AE-90 (4-7%)
Ave. 28 day strength 5,500 psi

1. Cement will be low alkali type I-II or type III conforming to ASTM C-150
2. Coarse aggregates used in the concrete mix design will conform to ASTM C33 with the designated size of coarse aggregate #67.
3. Minimum water/cement ratio will not exceed 0.40. Slump will not exceed 5" with normal water reducing agent or 7" with super plasticizer.
4. Air-entrained admixtures will conform to ASTM C260. Water reducing admixtures will conform to ASTM C494, Type A. Plasticizing admixtures will conform to ASTMC 1017. Other admixtures will not be used without customer approval.

B. Colored Concrete

1. Color additives will conform to ASTM C979. A 6"x12"x2" color sample will be available for customer approval.
2. The following will contain colored concrete:
   a. Toilet building roof panels
   b. Building walls
   c. Screen panels
   d. The sample brand and type of color additive will be used throughout the manufacturing process.
   e. All ingredients will be weighed and the mixing operation will be adequate to ensure uniform dispersion of the color.
3. Color pigments will be by Davis Colors.

C. Cold Weather Concrete

1. Cold weather concrete placement will be in accordance with ACI 306.
2. Concrete will not be placed if ambient temperature is expected to be below 35 degrees F. during the curing period unless heat is readily available to maintain the surface temperature of the concrete at least 45 degrees F.
3. Materials containing frost or lumps of frozen materials will not be used.

D. Hot Weather Concrete

The Temperature of the concrete will not exceed 80 degrees F. at the time of placement and when the ambient temperature reaches 90 degrees F. The concrete will be protected with moist covering.

E. Concrete Reinforcement

1. All reinforcing steel will conform to ASTM A615. All welded wire fabric will conform to ASTM A185.
2. All reinforcement will be new, free of dirt oil. Paint, grease, and loose mill scale and loose or thick rust when placed.
3. Details not shown on drawings or specified will be to ACI 318.
4. Steel reinforcement will be centered in the cross-sectional area of the walls and will have at least 1" of cover on the under surface of the floor and roof.
5. The maximum allowable variation for center-center spacing of reinforcing steel will be 1/2".
6. Full lengths of reinforcing steel will be used when possible.
7. Reinforcing bars will be bent cold.
8. Diagonal reinforcement will be placed around all openings.

F. Sealers and Curing Compounds

1. Curing compounds, if used, will be odorless, complying with ASTM C309 type I or I-D.
2. Weatherproofing sealer for exterior of building will be clear, low gloss, water based acrylic sealer (Dayton-Superior J-24).

G. Caulking, Grout, Adhesive and Sealer

1. All caulking will remain flexible and non-sag at temperatures from 50 to 140 degrees Fahrenheit>
2. Interior joints will be caulked with white “Sidewinder” by DAP.
3. Exterior joints will be caulked with a siliconized acrylic caulk that closely matches the exterior concrete color (by GE Sealants). Roof ridge will be 100% silicon caulk (also by GE Sealants).
4. Epoxy concrete adhesive will be two component rigid, non sag gel adhesive for bonding to dry or damp surfaces, moisture insensitive.
5. Portland cement mortar will consist of one part Portland cement, three parts sand and enough water to make a workable mixture

H. Paint

1. All paints and materials will conform to all Federal specifications or be similar "top-of-the-line-components". Paints will be lead free.
   a. Inside concrete surfaces:
      I. Interior Floors will be Rust-Oleum, High Performance 5300 system 2 part, water-based epoxy, Color: Gray (www.roddapaint.com)
      II. Interior walls and ceiling will be Rodda Master Painter, White Base 54 3101 5, Interior semi-gloss, Color: White. (www.roddapaint.com)
   b. Metal surfaces both inside and out:
      I. Rodda Industrial Protective Coatings, Professional Maintenance, Neutral Base 75 8104 1, all purpose gloss equipment enamel, Color: Varies (Normally custom matched to Rust-Oleum 7754 Anodized Bronze) (www.roddapaint.com)
   c. Exterior concrete surfaces:
      I. Exterior slab will be clear sealer.
      II. Exterior walls will be Rodda AC-Exterior Series, Neutral Base 51 1104 5, 911 Velvet Flat Latex Color: Varies. (www.roddapaint.com)
      III. Simulated shake roof will be boiled linseed oil thinned 10% with paint thinner.

I. Grab bars

Grab bars will be 18 gauge, type 304 stainless steel with 1-1/2" clearance. Grab bars will each be able to withstand 300 pounds of loading.

J. Toilet Paper Dispenser

Dispenser will be constructed of 1/4" thick steel with an enamel finish. Dispenser will be capable of holding three (3) standard rolls of toilet paper. Toilet paper holder fastening system will be able to withstand 300 pound top loading.

K. Toilet Riser

Toilet riser will be 18" high, white cross linked polyethyene, with heavy duty seat and lid, manufactured by Romtec, Roseburg, OR.

L. Steel Doors

1. Doors will be flush panel type 1-3/4" thick, minimum 16 gauge prime coated steel panels, level 3 Extra Heavy-duty, by Ceco Door Products.
2. Door frames will be knockdown or welded type, single rabbet, minimum 16 gauge prime coated steel width to suit wall thickness. Three (3) rubber door silencers will be provided on latch side of frame.

M. Door Hinges

Door hinges will be 3 per door with dull chrome plating 4 1/2"x 4 1/2", adjustable tension automatic-closing for each door.

N. Lockset

1. Lockset will meet ANSI AI 56.2 Series 4000, Grade 1 cylindrical lockset for exterior doors.

2. Lever handle both inside and out.
3. Either handle operates latch unless outside handle is locked by inside push-button.
4. Push-button will automatically release when inside lever handle is turned or door is closed.
5. Emergency slot on exterior so door can be unlocked from the outside with a coin, screwdriver, and etc.
6. Inside lever always active.
7. U.S. 26D finish.

O. Door or Wall Louvers

Door louver will be fixed, inverted split Y, non-vision, 18 gauge cold rolled steel with a factory prime coat equal to FDLS series.

Wall louver (if requested) will be HEAVY DUTY KICK PROOF VENT by Romtec, Roseburg, OR.

P. Doorstop

Door stop will have a cast metal base, U.S. 26D finish with gray rubber 2-3/8" diameter bumper with a 1" projection.

Q. Double Coat Hook

Coat hooks will be constructed of solid brass with a brushed chrome finish. Hooks will be side by side “ram horn” style with minimal projection for safety.

R. Door Sweep

Door sweep will be provided at the bottom of door and will be an adjustable brush type.

S. Windows and Vault Cleanout Cover

1. Windows and cleanout cover frames will be constructed from steel.
2. Window glazing will be 1/4" thick LEXAN polycarbonate.
3. Plate for vault cleanout cover will be 1/4" thick diamond plate steel. Lid will be configured so that it can be locked with a padlock. Lid will be designed to resist surface runoff penetration into the vault. A neoprene gasket will be provided around the entire perimeter of the lid to provide an airtight seal.

T. Vault Liner

The vault shall include a one-piece 0.187" thick LDPE plastic liner by RMI Manufacturing, Caldwell, ID. Vaults with the LDPE liner shall be warranted against leaks for a period of 7 years.

5.0 MANUFACTURE

A. Mixing and Delivery of Concrete.

Mixing and delivery of concrete will be in accordance with ASTM C94, section 10.6 through 10.9 with the following additions.

1. Aggregate and water will be adjusted to compensate for differences in the saturated surface-dry conditions.
2. Concrete will be discharged as soon as possible after mixing is complete. This time will not exceed 30 minutes.

B. Placing and Consolidating Concrete

Concrete will be consolidated by the use of mechanical vibrators. Vibrations will be sufficient to accomplish compaction but not to the point that segregation occurs.

C. Finishing Concrete

1. Interior floor and exterior slabs will be floated and troweled until all marks are removed. A light broom finish will be applied to the exterior and interior slabs for a non-slip finish.
2. All exterior building walls and exterior screen walls will be a barnwood texture, unless otherwise specified.
3. All exterior surfaces of the roof panels will be cast to simulate a cedar shake roof, unless otherwise specified. The underside of the overhang will have a smooth finish.

D. Cracks and Patching

1. Cracks in concrete components that are judged to affect the structural integrity of the building will be rejected.
2. Small holes, depressions and rock pockets will be patched with a suitable material. The patch will match the color, finish and texture of the surrounding surface.
3. Patching will not be allowed on defective areas if the structural integrity of building is affected.

E. Curing and Hardening Concrete

1. Concrete surfaces will not be allowed to dry out from exposure to hot, dry weather during the initial curing period.
2. Curing compounds will not be used on interior walls as they will prevent paint adhesion.

6. FINISHING AND FABRICATION

A. Structural Joints

1. All welding will be by Certified Welders only (in accordance with AWS D1.1).
2. Wall components will be joined together with 2 welded plate pairs at each joint. Weld plates will be anchored into the concrete panels and welded together with a continuous weld.
3. Walls and roof will be joined with weld plates, 2-1/2"x5", at each building corner.
4. The joint between the floor slab and walls will be joined with a grout mixture on the inside. a matching colored caulk on the outside and two weld plates 6" long per wall.

B. Painting

1. An appropriate curing time will be allowed before paint is applied to concrete.
2. Some applications may require acid etching. A 30% solution of hydrochloric acid will be used, flushed with water and allowed to thoroughly air dry.
3. Painting will not be done outside in cold, frosty or damp weather.
4. Painting will not be done outside in winter unless the temperature is 50 degrees Fahrenheit or higher.
5. Painting will not be done in dusty areas.
6. Schedule of finishes:
   a. Inside concrete surfaces
      I. Inside floors will be 2 coats of 2-part water based epoxy.
      II. Interior walls and ceiling will be one coat primer / filler and 2 coats of white water based acrylic emulsion.
   b. Metal surfaces both inside and out
      I. 1 coat primer and 2 coats of enamel

c. Exterior concrete surfaces
   I. Exterior slab will be 1 coat of clear sealer.
   II. Stained enhanced exterior walls will be 1 coat of pure acrylic water repellent penetration stain in the same color as the walls or roof followed by 1 coat of clear acrylic sealer.

7.0 QUALITY CONTROL AND INSPECTION

A. Pre-pour inspection.

1. Check all panel measurements including diagonals (must be within ¼ inch).
2. Check rebar spacing and clearance
3. Check location of all embeds.

B. Concrete Testing

1. The following tests will be performed on concrete used in the manufacture of toilets. Testing will only be performed by qualified individuals who have been certified ACI Technician Grade 1. Sampling will be in accordance with ASTM C172.
   a. The slump of the concrete will be performed on the first batch of concrete in accordance with ASTM C143. This slump will be in the 3"-5" range.
   b. The air content of the concrete will be checked per ASTM C231 on the first batch of concrete. The air content will be in the range of 4%-6%.
   c. The compressive strength of the cylinders will be tested to ASTM C39.
   d. Test cylinders will be taken from each other batch.
      - 1 cylinder will be tested prior to removal of forms and must be at 2,500 psi or higher.
      - 1 cylinder represents 7 day strength
      - 2 cylinders will represent 28 day strength and must be 4,500 psi or greater.

C. After Form Removal Inspection

1. Recheck panel dimensions
2. Verify that all embeds remained in place.
3. Look for all cracks or blemishes that may cause rejection.
4. Assure that panels are properly yarded and blocked.

8.0 INSTALLATION

A. Scope of Work

1. Work specified under this Section includes excavation, backfill and placement of precast concrete vault toilet.

B. Materials

1. Bedding material to be sand or 3/8" minus crushed or screened aggregate.
2. Sealant between vault and toilet floor to be 1"x1" Butyl Rubber Sealant.

C. Location and Access to the Site

It is the responsibility of the customer to locate the vault toilet in area that provides safe and reasonable access for trucks and equipment.

1. The area must be free of overhead or underground obstructions.
2. Care must be taken to not place excavated material in the area where the crane must sit.
3. Verify that bridges/culverts enroute to the site are rated for HS-20 loading.
4. Deliveries may be delayed if road conditions are hazardous or unsuitable for normal trucks and trailers.
5. Trucks must be able to reach the site under their own power.

D. Excavation and Elevation

1. Comply with all applicable OSHA Standards for excavation.
2. The "Aspen" vault toilet requires a hole that is 8ft wide and 16ft long as long as measured at the bottom. Depth should be 4'-9" below desired finished floor elevation.
3. Finish floor elevation will be 4-6 inches above natural grade measured at the front (entrance) of the exterior slab unless otherwise approved by the customer. The customer may specify a finish floor elevation for buildings at some sites. The contractor will install buildings at these sites with the floor elevation within ±0.05 feet of the specified floor elevation. It is very important that the installation provides drainage away from the structure.

F. Bedding and Compaction

1. Compact the natural ground at the bottom of the vault excavation with a minimum of three passes with a whacker-type mechanical compactor or equivalent approved by the customer.
2. Install sand or aggregate bedding material for leveling course. Compact leveling course with one pass with a whacker-type mechanical tamper or equivalent approved by the customer. Grade leveling course so there will be no high spots in the middle of the vault bottom. Compact with a second pass with a whacker or approved equivalent tamper.
3. Set vault in place. Backfill around structure. Use excavation material for backfill except that rocks larger than six inches in maximum dimensions shall not be placed within six inches of the exterior vault walls.

4. Fill, adjacent to the building entry, will have excavated material placed in eight inch loose lifts and compacted with a minimum of two passes with a whacker-type mechanical compactor or equivalent approved by the customer.

G. Finish Grading

1. Spread excess excavated material from the vault around structure. Intended final grade is flush with the top of the front slab. Allow for placement of topsoil to reach that grade. Grade backfill away from structure from structure at maximum slope of five (5) percent unless otherwise approved by the customer.
2. Spread stockpiled topsoil as final layer after rough grading is completed. Areas disturbed by excavation, backfilling and stockpiling of excavated materials will be handed raked to remove exposed rocks over one inch in maximum dimension. Oversized rocks removed from the surface shall be disposed of in a designated area within 200 feet of the site.

H. Vault Toilet Riser and Accessories

1. Apply Butyl rubber adhesive sealant to the top surface of the concrete vault before placing the structure on the vault.

I. Exhaust Pipe Installation

1. After exhaust pipe is installed, seal around pipe at top and underside of roof with silicone caulk. Seal around pipe at top of slab will be accomplished by using silicone caulk.

9.0 MISSOULA CONCRETE CONSTRUCTION WARRANTY

Missoula Concrete Construction warrants that all goods sold are manufactured with the best of industry standards and that all materials and workmanships are as set forth in the specifications.

For a period of 3 years from the date of delivery, Missoula Concrete Construction will repair or replace, free of charge, any of its structures which are determined to be structurally unsound due to poor workmanship or materials. Determination must be in writing by a licenced structural engineer. Missoula Concrete Construction must be given the opportunity to inspect the site.

For a period of 7 years from the date of delivery, Missoula Concrete Construction will replace, free of charge, any LPDE vault liner which allows the migration of liquid contents from the vault to the surrounding soil due to defects in manufacturing.

Accessories are warranted to the extent of the individual accessory manufacturer's warranty.

This warranty shall not apply to:

1. goods which have been improperly handled or improperly installed by others;
2. goods which have been poorly sited (Such as in areas subject to flooding or high water tables.)
3. goods which have been repaired or altered without Missoula Concrete Construction's written consent;
4. goods which have been damaged by forces of nature in excess of design criteria, to include fire, flood, avalanche, landslide, tornado, etc.
5. minor hairline cracks due to shrinkage, thermal expansion / contraction, or shipping.
6. damage due to accidents, vandalism, or improper maintenance.

10.0 DISCLAIMER OF OTHER WARRANTIES

THE WARRANTY SET FORTH ABOVE IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. ALL OTHER WARRANTIES ARE HEREBY DISCLAIMED. MISSOULA CONCRETE CONSTRUCTION MAKES NO OTHER WARRANTY OF MERCHANTABILITY OF OR FITNESS FOR A PARTICULAR PURPOSE OR USE.

11.0 LIMITATION OF REMEDIES

In the event of any breach of any obligation hereunder; breach of any warranty regarding the goods or any negligent act or omission of any party, the parties shall otherwise have all rights and remedies available at law; however, in no event shall Missoula Concrete Construction be subject to or liable for any incidental or consequential damages.

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Douglas G. Bauer, President

SECTION 02905
TREE PROTECTION (*ADDED SECTION)*

PART 1: GENERAL

1.1 SECTION INCLUDES

A. Furnishing all supervision, labor and materials to protect existing trees to remain on site from any and all damage to above ground and below ground portions of the trees resulting from the Contractor's or his Subcontractor's work on site.

B. It is the Contractor's option to provide a construction fence barricade and/or Trunk Protection to protect trees during construction operations.

1.2 DEFINITIONS

A. Damaged Tree: Tree impacted by construction activities in a manner that causes physical harm that may lead to disease or death, such as bark penetration and branch breaking/tearing, burning, lack of water, compaction or chemical impacts to root zone and/or that causes aesthetic or structural balance disruption through scarring, discoloring, removal of canopy branches or leaning tree.

PART 2: PRODUCTS

2.1 TRUNK PROTECTION

A. Lumber: Use clean, recycled or new wood, (2 x 6) by 8'-0" length.

B. Fasteners: Use heavy gauge, smooth metal fencing wire and metal staples.

PART 3: EXECUTION

3.1 TRUNK PROTECTION

A. Where it is determined by the Contractor to provide truck protection, it should be installed prior to commencing construction. the following method is recommended:

1. Carefully place lumber vertically against trunk of tree, without damaging bark. Anchor first piece of lumber to tree with fabric or rubber tie around trunk temporarily. Place additional lumber pieces parallel to the first, attaching each one with smooth heavy metal wire and a metal staple on the outside of the lumber to hold securely during course of construction. Remove temporary tie. Two to three bands of wire may be necessary to hold lumber in place.

2. When complete, the lumber shall be secure around the tree with spacing between lumber pieces of 2-4 inches. Note that trees are tapered and have irregularities that will prevent a perfectly uniform appearance.

3. Fasten long pieces of orange construction flagging to top wire band to increase visibility.

3.2 TRENCHING

A. Minimize excavation in root zones of existing trees. When roots are encountered, cleanly cut the exposed root immediately with a saw or loper intended for use on trees, backfill with soil immediately and water to protect from additional damage.

3..3 EQUIPMENT & STOCKPILES

A. Do not park equipment, stockpile materials, or otherwise cause compaction to base of existing trees.

B. Do not burn tree canopies with exhaust vents on equipment.

C. Do not break branches, scrape or scar bark.

D. Do not pour liquid, chemical or any other waste material in to the soils.

PART 4: MEASUREMENT AND PAYMENT

4.1 GENERAL

A. No separate measurement and payment will be made for this item. All costs for this item shall be included in other items of the work. This shall include, but not necessarily limited to, costs associated with lumber bracing, labor, and replacement of any damaged trees.

B. Trees damaged by contractor, in the opinion of Owner or Engineer, shall be removed by Contractor, including the root ball and associated backfill and restoration, at no additional cost to the Owner.

END OF SECTION 02905

SECTION 02910
SEEDING (MPWSS, as amended)

PART 1: GENERAL

1.1 DESCRIPTION

Add the following:

"C. Seeding shall be required for all areas disturbed on site during the course of construction outside the roadway and shoulder limits. This shall include all contractor staging areas, excavation and fill areas, borrow areas, drainage ways, or other areas disturbed during the course of construction.

D. Seeding shall include redistribution of a minimum 6" thickness of salvaged topsoil and preparation for seeding, to include hauling, placement, spreading, and final grade preparation."

1.2 SUBMITTALS

Add the following:

"B. Contractor shall submit final weed–free seed mix certifications to Engineer for approval prior to seeding operations."

PART 2: PRODUCTS

2.1 SEED

Add the following:

"E. Seed mix shall be the Native Forest Mix as indicated on the plan, Sheet C1.1.

Add the following Section:

"2.6 STRAW MULCH WITH TACKIFIER

A. Straw mulch shall be used on all seeded areas. Straw mulch shall consist of natural bio-degradable material, shall not contain mold, and shall be free of diseased plant residue, noxious weed seeds, harmful chemicals, and other known environmental products. Tackifier shall be included either within the straw mulch, or applied once the mulch is in place. Submit mulch and tackifier information to engineer prior to ordering materials."

PART 3: EXECUTION

3.3 SEEDBED PREPARATION AND SOWING

Delete paragraph

Add the following paragraphs:

"F. Compacted sub soils shall be ripped to a depth of six inches prior to top soil placement.

G. Topsoil on site needs to be salvaged separately from subsoil prior to beginning construction. If possible topsoil should be wind rowed rather than piled. After construction, compacted areas should be ripped and topsoil redistributed over areas to be revegetated. An ideal seed bed is topsoil lightly compacted until an average person leaves a foot print .25 to .5 inches deep in the soil."

Add the following Section:

"3.6 STRAW MULCH

A. Straw mulch shall be placed loose and open enough to allow some sunlight to penetrate and air to circulate but still cover a minimum of 70% of the soil surface. Straw mulch shall be applied at a uniform rate of 1-1/2 to 2 tons per acre for seeded areas. Mulch shall be placed within 24 hours of seeding. Tackifier shall be sprayed in conjunction with mulch or immediately thereafter. Tackifier shall be applied at a rate meeting manufacturer's recommendations. Asphalt based products shall not be applied. Mulch that is displaced shall be reapplied as soon as practical and properly anchored.

PART 4: MEASUREMENT AND PAYMENT

4.1 GENERAL

Delete and replace with the following:

"A. Seeding shall be measured and paid for per the Lump Sum as listed in the proposal for "Topsoil and Seeding". Payment shall include full compensation for all seed and fertilizer materials, seedbed preparation, topsoil installation to a minimum of 6 inches, straw mulch and tackifier, and all labor, equipment, materials and incidentals to complete seeding in place."

END OF SECTION 02910

SECTION 03000
DIVISION 3 – CONCRETE

This contract will be constructed and administered under the requirements of the Montana Public Works Standard Specifications (MPWSS), Sixth Edition, April 2010, as Amended, and all supplemental documents contained herein. The Montana Public Works Standard Specifications are included in their entirety, as applicable, and as modified, amended, added, or replaced as follows:

03310 STRUCTURAL CONCRETE *(MPWSS, as amended)*

SECTION 03310
STRUCTURAL CONCRETE (*MPWSS as amended*)

PART 2: PRODUCTS

2.2 COMPOSITION OF CONCRETE

B. Performance and Design Requirements

1. Replace Table 2.1 – Minimum Cement Content Requirements with the following:

"All concrete supplied on the project shall have a minimum cement content of 564 lb/yd^3 unless otherwise approved by the Engineer, and maximum H20/cement ratio of 0.45 as the concrete will be exposed to freezing and thawing and possibly the presence of deicing chemicals."

4. Replace Table 2.2 – Total Air Content Of Concrete for Minimum Cement Content Requirements with the following:

"All concrete supplied on the project shall have a TOTAL AIR CONTENT of 6.5 percent, +/- 1 ½ percent tolerance"

Delete Section 4.c in its entirety and replace with the following:

"c. Furnish the compressive strength and the water-cement or water cementitious, material ratio of concrete for each portion of the work as specified in the Contract documents.

1) Cement content shall be 6-sack only, with no allowance for fly ash, pozzolan, or slag without written approval of the Engineer.

2) Strength requirements are based on the 28-day compressive strength determined on 6" x 12" cylindrical specimens, or other approved specimens per testing standards, made and tested under ASTM C31 and C39 respectively."

PART 3: EXECUTION

3.5 CURING CONCRETE

Add the following paragraph to E.2 Impervious Membrane Curing

"e. All concrete shall be cured in conformance with the requirements included within specification section 02529 for allowable curing products and applications."

END OF SECTION 03310