Project Specifications for the Yellow Bay State Park Site Improvements

Montana Fish, Wildlife, and Parks
FWP #*7216212*

Yellow Bay
Lake County, Montana

January 2025

BID SET

NOT FOR CONSTRUCTION

SECTION 01000
DIVISION 1 – GENERAL REQUIREMENTS

This contract will be constructed and administered under the requirements of the Montana Public Works Standard Specifications (MPWSS), Seventh Edition, April 2021, 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)
01045	Miscellaneous Work (Added Section)
01047	Mobilization (Added Section)
01050	Field Engineering (MPWSS, as amended)
01150	Measurement and Payment (Added Section)
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 at 23861 Montana 35, Bigfork, 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 campground improvements, including the demolition of existing campsites and construction of new campsites. Work will include the construction of roads, parking areas, installation of water and sewer lines, vault toilet site preparation, sidewalk and trail construction, maintenance shed site prep, signage, striping, electrical site work, relocation of kiosk, relocation of woodshed, excavation and embankments, seeding, restoration, and incidental construction.

Bid Alternative 1 generally includes additional asphalt paving and two-foot gravel shoulder.

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 March 15, 2025. Clearing may be approved prior to the Notice to Proceed date. An expected Substantial Completions date is July 1, 2025, with the intent to open the campground prior to July 4, 2025.

1.5 OWNER FURNISHED ITEMS

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

- Picnic Tables
- Vault Toilets
- ADA Fire Ring

1.6 SALVAGED ITEMS

A. The following items shall be salvaged by Contractor and provided to Owner at a location determined by Owner:

- Light Poles
- Sign Posts and Bases
- Pin Down Curbs
- Large Landscape Rocks
- Picnic Tables
- Fire Rings
- Yard Hydrants
- Trash Cans
- Kiosk
- Woodshed
- Fence
- Food Storage Container

1.7 WORK SEQUENCE

A. General: 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. Any power outage required for work shall be minimized and coordinated with the Engineer and Owner.

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.

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. <u>The Owner will perform any activities that are underlined, if any.</u> 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.**

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.

1.9 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 permits for the latrine installations.

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. Mission Valley Power – Electric: Contact Brent Burland, 65 Pablo West Road, Pablo, MT 59855. (406) 675-7900

2. CenturyLink – Telephone: Contact CenturyLink, 216 1St Ave E, Polson, MT 59860 (406) 883-7236

3. Lake County Road and Bridge Department – Traffic Control and Approach Coordination/Utility Permitting: (406) 883-7206.

4. Lake County Environmental Health – Sewer and Water Permitting: Contact Diana Luke, 106 4th Avenue East, Polson, MT 59860 (406) 883-7236.

5. Montana Department of Transportation – Traffic Control and Approach Coordination, 85 5th Ave E N, Kalispel, MT 59901

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 01045
MISCELLANEOUS WORK (*Added Section*)

PART 1: GENERAL

1.1 DESCRIPTION

A. The item “Miscellaneous Work” is included in the contract for any minor work and/or material which may be encountered during construction, but which is not addressed elsewhere in the contract.

B. The inclusion of Miscellaneous Work in this contract does not guarantee that additional work will be requested by the Owner or that this item will be used by the Engineer.

PART 2: PRODUCTS – NOT USED

PART 3: EXECUTION – NOT USED

PART 4: MEASUREMENT AND PAYMENT

4.1 PAYMENT

A. Measurement for Miscellaneous Work will be per the unit listed in the proposal for material and/or work performed as directed by the Owner. Payment shall be per agreed upon prices or on a force account basis. The number of units in dollars set in the contract is an estimated amount only, which may be adjusted up or down by the Owner in accordance with the needs of the project. Use of this item is at the sole discretion of the Owner and is not guaranteed to be used. The inclusion of Miscellaneous Work does not guarantee the contractor payment for the item unless authorized by the Owner. If this item is not used, there will be no payment made to the Contractor.

END OF SECTION 01045

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 01150
MEASUREMENT AND PAYMENT

PART 1: GENERAL

1.1 DESCRIPTION

Measurement and Payment shall be as specified within Section 4 of the individual specification sections for which it is related. The following Measurement and Payment descriptions include those items not specifically called for in the specifications but are listed on the Proposal. If an item of work indicated on the plans or contained within the specifications does not have a specific item listed in the Proposal, the item shall be considered incidental to the work.

MISC ITEMS

BID ITEM **DESCRIPTION**

1. **SITE ELECTRIFICATION:** This bid item shall include all costs associated with the electrical items as described in the project drawings and specifications listed on the drawings. Direct payments to Mission Valley Power will be paid directly by FWP.

   Measurement: Measurement shall be per the Lump Sum as listed on the Proposal.

   PAYMENT: Payment shall be at the contract unit price bid per Lump Sum for Site Electrification as listed in the Proposal. Payment shall include all labor, equipment, materials, and incidentals to complete the work in accordance with the plans and specifications. All trenching, backfilling, compaction, restoration, including asphalt patching, and other items necessary for construction to be incidental to the item.

2. **TENT PAD:** This bid item shall include all costs associated with constructing a tent pad including the lumber, base course, pea gravel and labor to install.

   Measurement: Measurement shall be per the Each as listed on the Proposal.

   Payment: Payment shall be at the contract unit price bid per Each for Tent Pad as listed in the Proposal. Payment shall include all labor, equipment, materials, and incidentals to complete the work in accordance with the plans and specifications.

3. **NATURAL SURFACE WALKING TRAIL:** This bid item shall include all costs associated with constructing a natural surface trail as described in the project drawings.

   Measurement: Measurement shall be per the Linear Foot listed on the Proposal.

   Payment: Payment shall be at the contract unit price bid per Linear Foot for Natural Surface Walking Trail as listed in the Proposal. Payment shall include all materials, labor, equipment, and incidentals required to construct the trail. Any clearing and grubbing or tree removal necessary to complete the items is considered incidental.

END OF SECTION 01150

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
2. Traffic Control Plans
3. Aggregate Materials, Including Moisture Density Curves (current within 12 months)
4. Asphalt Mix Design (current within 12 months)
5. Concrete Mix Design (current within 12 months)
6. Pavement Markings
7. All Electrical Components
8. All Water related items (main, services, fittings, hydrants, etc.)
9. All Sewer related items (main, services, fittings, etc.)
10. All storm drain related items (separation fabric, drain pipe, dry well, etc)
11. All Guardrail Components
12. Large Opening Swing Gate Shop Drawings
13. Sign Posts and Hardware
14. 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*)

PART 1: GENERAL

1.1 DESCRIPTION

Delete paragraph A, and replace with the following:

"A. This section describes the Contractor quality control and quality assurance testing requirements. This section includes the Owner's quality assurance testing frequencies that Contractor must perform."

Add the following paragraph:

"B. ***Any provisions within the specification sections referring to Owner testing, shall mean Contractor provided testing unless otherwise specified."***

Add the following paragraphs:

"1.3 LABORATORY TESTS

A. The Contractor shall employ and pay for the services of an independent testing laboratory to perform specified laboratory testing of materials and equipment where the technical specifications specifically obligate the Contractor to provide the services.

B. Unless otherwise indicated, the Contractor will employ and pay for the services of an independent testing laboratory to perform soils, concrete, and asphalt testing for determining compliance with the specifications. The Contractor shall cooperate with the laboratory to facilitate the execution of its required services. Contractor shall distribute all test results to the engineer for review.

1.4 CONTRACTOR'S RESPONSIBILITIES

A. Cooperate with laboratory personnel and provide access to work.

B. Secure and deliver to the laboratory adequate quantities of representative samples of materials proposed to be used and that require testing.

C. Provide to the Engineer the preliminary mix proposed to be used for concrete, asphalt, and other material mixes that require control by the testing laboratory.

D. Provide samples of materials proposed to be used for backfill of structures or piping for determination of moisture density relationship.

E. Furnish copies of product test reports as required.

F. Furnish incidental labor and facilities:

1. To provide access to Work to be tested.

2. To obtain and handle samples at the Project site or at the source of the product to be tested.

3. To facilitate inspections and tests.

4. For storage and curing of test samples.

G. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

H. Coordinate testing services with laboratory and the Owner/Engineer. Understand all requirements of project testing and ensure all testing complete prior to completion of the Project.

I. Excavating test holes into compacted backfill to allow for testing below the surface of any layers covered without inspection shall not be allowed. Areas that are not tested shall be fully re-excavated, backfilled appropriately and tested at the appropriate intervals."

PART 3: EXECUTION

3.1 GENERAL

Add the following paragraphs:

"E. The Contractor shall provide nuclear density testing for trench backfill and surfacing materials. (i.e. all base gravels, asphaltic concrete, or gravel surfacing). The Contractor will provide the Owner with all the necessary moisture/density curves and testing reports for all density testing on the project for imported materials. The Contractor will be required to utilize the services of an independent and certified testing laboratory for all proctors."

F. The Contractor shall notify the Engineer of all field testing schedules. The Contractor shall notify laboratory representative and the Engineer as to the dates and times of all testing, providing a minimum of 24-hours notification. The Contractor shall coordinate with the Engineer the requirements of the Project and ensure all testing is complete to meet Project Specifications. The Contractor shall provide all required materials, labor, equipment, water, and power required for testing. Contractor shall review and understand the minimum testing requirements of MPWSS and ensure all required testing has been performed.

G. The Contractor shall perform:

1. Initial moisture/density proctor curves for all bedding, gravel bases, and asphaltic concrete surfacing performed by an independent laboratory. The maximum density curve shall be current (within the last 12 months), and the asphalt mix design shall be current (within the last 12 months).

2. The Contractor shall make provisions for the testing agency to enter all trenches for the purpose of conducting inspection services; an example would be performing field density tests in a deep trench. Such provisions shall exceed all OSHA requirements, including fall rescue equipment, gas safety equipment, entrance procedures, etc.

H. The following minimum testing requirements shall be required:

1.1.1 ASPHALT CONCRETE PAVEMENT

Test Type	Test Method Reference	Minimum Required Frequency
Mix Design	02510 Part 2.5.A	1 submittal per project no older than one year
Marshall or Gyratory Test	02510 Part 2.5.B	1 test/1000 feet of roadway
Core Density and Thickness	02510 Part 3.9.A 02510 Part 3.28.B	1 core sample for every 400 feet of street with a minimum of two samples per project. 1 core sample per project shall be along a longitudinal joint (if applicable).

PORTLAND CEMENT CONCRETE

Test Type	Test Method Reference	Minimum Required Frequency
Mix Design	03310 Part 2.3.A (ACI 301)	1 submittal per project no older than one year
Field Acceptance Testing	03310 Part 3.6	1 test per project, or per day's placement, over 10 cy for Every 50 cy

EARTHWORKS – TRENCH EXCAVATION

Test Type	Test Method Reference	Minimum Required Frequency
Trench Backfill	Moisture-Density (02221 Part 1.4.B.1)	1 submittal per soil type and borrow source
Trench Compaction (shallow)	In-Place Density (02221 Part 1.4.A.2	4 feet to surface of trench Every 200 feet, 2 feet from edge of structures, appurtenances, and as material changes: -4 foot depth -2 foot depth -surface of trench

Trench Compaction (deep)	Method Specification/ Test Trench Maximum Density (MPWSS as amended 02221 Part 1.4.A.2.5)	5 foot and deeper trenches and subgrade below pipe: Every 200 feet or daily observation, whichever is greater
Pipe Bedding	Type 1 Bedding (MPWSS as amended 02221 Part 2.1.A) Type 2 Bedding (02221 Part 2.1.B)	1 submittal per project
Pipe Bedding Compaction	Type 1 Bedding (MPWSS as amended 02221 Part 2.1.A.3) Type 2 Bedding (MPWSS as amended 02221 Part 2.1.C.4)	Every 200 feet below pipe or daily observation, whichever is greater Every 200 feet below pipe or daily observation, whichever is greater

EARTHWORKS – STREET EXCAVATION

Test Type	Test Method Reference	Minimum Required Frequency
Subgrade	Moisture-Density (02230 Part 1.3.B.1) Gradation for sub-excavation/replacement (02230 Part 1.3.C)	1 Submittal per soil type and borrow source
Subgrade Compaction under Curbs, Gutters	In-Place Density (02230 Part 1.3.A.2)	Every 200 feet and as material changes: Top 8 inches of subgrade
Subgrade Compaction under Roadways	In-Place Density (02230 Part 1.3.A.2	Every 200 feet and as material changes: Top 8 inches of subgrade
Subgrade Compaction under Sidewalks	In-Place Density (02230 Part 1.3.A.2	Every 200 feet and as material changes: Top 8 inches of subgrade

EARTHWORKS – SUB-BASE AND BASE COURSE

Test Type	Test Method Reference	Minimum Required Frequency
Material	Gradation, Moisture-Density, Fractured Faces, L.A Abrasion, Plasticity, CBR for RAP Sub-base (02234 Part 2) Base (02235 Part 2)	1 submittal per project and borrow source

Compaction under Roadways	In-Place Density : Sub-base (02234 Part 1.3.A.2) Base (02235 Part 1.3.A.2)	1 test/lift/200 lf
Compaction under Curbs and Gutters	In-Place Density: Sub-base (02234 Part 1.3.A.2) Base (02235 Part 1.3.A.2)	1 test/lift/200 lf
Compaction under Sidewalks	In-Place Density Base (02235 Part 1.3.A.2)	1 test/lift/200 lf

WATER DISTRIBUTION

Test Type	Test Method Reference	Minimum Required Frequency
Bacteriological Test	02660 Part 3.4.D	2 samples collected 24 hours apart per main or branch
Hydrostatic and Leakage Test	02660 Part 3.4.D	All new sections of water main including services to the curb stop or valve

SANITARY SEWER

Test Type	Test Method Reference	Minimum Required Frequency
Light Test	02730 Part 3.4.B	1 test between each set of manholes
Leakage Test – Air Test	02730 Part 3.4.C, E.	Entire length of main
TV Inspection	02730 Part 3.4.G	Entire length of main
Deflection Test	02730 Part 3.4.H	Entire length of main
Hydrostatic and Leakage Test	02730 Part 3.4.J	1 test per valved section of pipe as applicable for force mains
Manhole Leakage Test	02730 Part 3.4.K	1 test per manhole

STORM SEWER

Test Type	Test Method Reference	Minimum Required Frequency
Light Test	02720 Part 3.5.A	1 test between each set of manholes
Deflection Test	02730 Part 3.4.C	At Engineer Discretion
TV Inspection	02730 Part 3.4.D	Entire length of main

BOULEVARD LANDSCAPING

Test Type	Test Method Reference	Minimum Required Frequency

Topsoil Parameter	02900 Part 2.1.B.1.b	1 test per project and borrow source
Topsoil Texture	02900 Part 2.1.B.1.c	1 test per project and borrow source

I. Related requirements specified elsewhere:

1. Inspection and testing required by laws, ordinances, rules, regulations, orders, or approvals of public authorities: Conditions of the Contract.

2. Certification of products: The respective section of Specifications.

3. Test, adjust, and balance equipment: The respective sections of Specifications.

4. Field tests required and standards for testing: The respective Specification sections.

J. All tests shall be performed in the presence of the Engineer or Engineer's Representative.

K. Repair all materials that fail during testing at Contractor's expense."

PART 4: MEASUREMENT AND PAYMENT

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

"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. Payment will be made monthly based on project percent complete and as agreed to by Engineer and Contractor."

END OF SECTION 01400

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

PART 1: GENERAL

1.1 CONSTRUCTION FACILITIES

Add the following 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, MDT and Lake County, in the development of the project phasing and associated traffic control measures and shall follow all local, County and State standards in relation to any detours or road closures necessary to complete the work.

C. The contractor shall be responsible for maintaining safe travel corridors for all vehicle, bicycle and pedestrian traffic as part of the approved traffic control plan.

D. Contractor shall allow adequate time for review of each phase of traffic control. Traffic control plans shall be submitted to the Engineer, and MDT. Contractor shall allow a minimum 2-week review time for all traffic control plans.

E. All Traffic Control plans shall be reviewed and approved by MDT when working within or impacting MDT ROW. Traffic Control plans shall meet MDT standards.

1.2 PROJECT OVERVIEW

A. Legal access for the existing residence south of the State Park shall be maintained for passenger and emergency vehicles during construction.

B. Traffic control devices shall conform to the current version/revision of the Manual on Uniform Traffic Control Devices (MUTCD) and shall be installed in accordance with an approved traffic control plan before beginning construction operations, and shall be properly maintained and operated during the entire time that the need exists. They shall remain in place only so long as they are needed and shall be immediately removed thereafter.

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 two-week (2-week) review time for traffic control phasing allowing single and double lane traffic. Contractor shall follow MDT traffic control standard/procedures when effecting State 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 MDT 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 of 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, 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. Measurement and payment for the Contractor’s off- site traffic control plan and

the designed on-site traffic control plan is on a lump sum basis. The lump sum payment is full reimbursement for all costs of furnishing, installing, maintaining, replacing and operating the construction traffic control systems throughout the work period. The construction traffic control system includes but is not limited to, signs, barricades, pavement markings, watering, flag persons and pilot cars.

B. Progress payments are in proportion to total construction completed.

C. If changes in the approved Traffic Control Plan are directed by the Engineer, additional payment or reduction in payment is made for the additional or deleted items as agreed to between the Contractor and the Engineer.

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 in section 3.11 of 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:

02110	Geotextiles (MPWSS, as amended)
02112	Removal of Pavement, Concrete, Curb, Sidewalks, Driveway, and/or Structures (MPWSS, as amended)
02221	Trench Excavation & Backfill for Pipelines & Appurtenant Structures (MPWSS, as amended)
02230	Street Excavation, Backfill, and Compaction – Including Soil Profiles from Project Test Pits (MPWSS, as amended)
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)
02528	Concrete Curb and Gutter (MPWSS, as amended)
02529	Concrete Sidewalk, Driveways, Approaches, Curb Turn Fillets, Valley Gutters, and Miscellaneous New Concrete Construction (MPWSS as amended)
02533	Guardrail (Added Section) Attachment A –MDT Standard Specifications 606
02581	Pavement Markings and Markers (Pre-Formed Plastic, Paints, and Enamels) (MPWSS, as amended)
02585	Street Signs (MPWSS, as amended)
02660	Water Distribution System (MPWSS, as amended)
02730	Sanitary Sewer Collection System (MPWSS as amended)
02735	Horizontal Directional Drilling (Added Section)
02740	Vault Toilet Site Prep (Added Section) Appendix A – Aspen Vault Toilet Specifications
02905	Tree Protection (Added Section)
02910	Seeding (MPWSS, as amended) Attachment A – Native Seed Mixes
02920	Hydraulic Seeding (MPWSS, as amended)
03000	Concrete (MPWSS, as amended)
03310	Structural Concrete (MPWSS, as amended)

SECTION 02110
GEOTEXTILES (*MPWSS, as amended*)

PART 2: PRODUCTS

Add the following sections:

"2.4 DRAINAGE FABRIC

A. "Drainage" or "geotextile" fabric, where indicated on the plans or within the project details, shall be a nonwoven geotextile, Propex 401, or approved equal. Drainage fabric shall be installed per manufacturer's recommendation and drawings.

2.5 SEPARATION FABRIC

A. Separation fabric, where indicated on the plans or within the project details, shall be a woven geotextile, Propex 200ST, or approved equal. Separation fabric shall be installed per manufacturer's recommendation and the standard drawings."

PART 4: MEASUREMENT AND PAYMENT

Add the following:

"4.3 DRAINAGE FABRIC

A. There will be no separate measurement or payment for nonwoven drainage or geotextile fabric. All costs of furnishing and installing the fabric shall be included in the unit prices named in the proposal for the associated work that includes the fabric."

END OF SECTION 02110

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 02221
TRENCH EXCAVATION & BACKFILL FOR PIPELINES & APPURTENANT STRUCTURES
(*MPWSS, as amended*)

PART 1: GENERAL

1.3 STANDARD DRAWINGS

Delete paragraph A. and add the following:

"A. "Pipe embedment for all utility trenching (sewer, water, electrical and related work) shall be per the details on the Drawings."

PART 2: PRODUCTS

Delete section 2.1 "Pipe Bedding Material" in its entirety and replace with the following:

"2.1 PIPE BEDDING MATERIALS

A. Unless otherwise shown on the drawings, pipe-bedding material will be placed in a thickness equal to 1/4 x pipe O.D. below the pipe (4-inch minimum) to 6 inches above the pipe. Bedding material will be clean, non-cohesive, natural, unwashed gravel, sand, or crushed hard stone graded as follows with a plasticity index of six (6) or less as determined by AASHTO testing methods T89 and T90.

NORMAL TYPE 1 BEDDING		**WET CONDITION TYPE 1 BEDDING**	
Sieve Size	**Percent Passing**	**Sieve Size**	**Percent Passing**
1 inch	100	1 inch	100
#4	40 - 70	#4	40 – 100
#200	Less than 10	#200	0

Where groundwater is encountered, Wet Condition Type I bedding shall be used. Native trench material will not be used for pipe bedding material. In rock areas the minimum bedding below the pipe will be 6 inches. No stones or hard rock larger than 6 inches will be placed within 2 feet above the pipe unless the bedding above the pipe is increased to 12 inches.

B. Bedding material will be compacted to 98% of maximum dry density as determined by AASHTO T-99.

C. Special pipe embedment may be required when shown on the drawings.

D. Placement and Compaction. All granular fill material beneath the pipe will be spread and compacted to provide a uniform and continuous support beneath the pipe at all points between bell holes or pipe joints. It will be permissible to slightly disturb the finished subgrade surface by the withdrawal of pipe slings or other

lifting tackle. No part of any bell or coupling will be in contact with the trench bottom, trench walls, or granular fill when the pipe is jointed.

E. After each pipe has been graded, aligned, and placed in final position on the bedding materials, and shoved home, sufficient pipe embedment material will be deposited and compacted under and around each side of the pipe and back of the bell or end thereof to hold the pipe in proper position and alignment during subsequent pipe jointing, embedment, and backfilling operations.

F. Embedment material will be deposited and compacted uniformly and simultaneously on each side of the pipe to prevent lateral displacement of the pipe."

PART 3: EXECUTION

3.1 PROTECTION OF EXISTING PROPERTIES

E. Exploratory Excavations

Delete paragraphs 1 through 4 in their entirety and add the following:

"1. The Contractor shall be responsible for locating all underground utilities associated with the Project. All costs associated with such exploratory excavations or "potholing", shall be at the Contractor's expense, and shall be considered incidental to the work."

3.3 TRENCH EXCAVATION

B. Trench Dimensions

Delete paragraph 1. and replace with the following:

"1. Trench dimensions shall be as indicated on the details on the plans. When plan details do not specify trench dimensions, excavate to the trench dimensions specified below."

3.4 DEWATERING

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

A. Remove all ground water or other water that may be encountered in trench excavations. Do not place pipe, bedding or backfill materials below the groundwater elevation established by dewatering operations. The cost of dewatering operations is considered a part of the excavation cost.

B. All dewatering efforts up to and including a 4" pump shall be considered incidental to the work. Efforts that require pumps larger than 4", in the opinion of the Engineer and based on field conditions, will be eligible for reimbursement via change order to be negotiated during construction.

3.6. TRENCH FILLING AND BACKFILLING

B. Pipe Bedding Placement

3. Type 2 Pipe Bedding – Delete.

C. TRENCH BACKFILL

1. Delete the last sentence and replace with the following:

"From the top of the Type 1 Pipe Bedding to 6 inches (15cm) below the ground surface, or to the subgrade elevation, material containing rock up to 6 inches in the greatest dimension may be used. All larger material must be removed and hauled to waste. Type A trench backfill will be required in all areas."

2. Delete Paragraphs a., b., and c. in their entirety and replace with the following:

"a. Type A Trench Backfill will be required for all backfilling operations on the Project, unless otherwise approved by the ENGINEER."

6. Delete Paragraphs a., b., and c. in their entirety and replace with the following:

"a. Type A Trench Backfill. Place trench backfill in maximum 8 inch compacted lifts within 3 percent of optimum moisture content, and compact to at least 95 percent of maximum dry density determined by AASHTO T99 or by ASTM D698."

PART 4: MEASUREMENT AND PAYMENT

Delete Parts 4.1 through 4.6 and replace with the following:

"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 pipe bedding, backfilling and compaction, potholing of utilities, and removal and disposal of excess or unsuitable soils."

END OF SECTION 02221

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 stump removals, imported borrow provisions, 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 the 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 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

B. 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 12 inches thick based site visits and well logs, over those areas required for new construction, to include areas of proposed roadways, camp sites, sidewalks, trails, and associated work. Topsoil shall be temporarily stockpiled on site at a location determined by Contractor and approved by Owner. Topsoil removal, excavation and embankment to construction of the trails shall be included within the Linear Foot price of Natural Trail as listed on the Proposal. Topsoil shall be redistributed for use in conformance with the Plans, and Sections 02910 and 02920.

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 tree and stump removal, clearing, grubbing and demolition items off the project site, with the exception of topsoil, 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 tree 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 plans. The excavation quantity was determined by taking the existing surface minus 12 inches for topsoil allowance, and comparing it to the surface of the planned subgrade. 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."

3.14 EXCESS EXCAVATION/TOPSOIL

A. Excess topsoil is anticipated on the project. Excess topsoil may be spread onsite, with prior approval of the Engineer. Any areas that received excess topsoil shall be re-seeded in conformance with sections 02910 or 02920.

3.15 EXISTING LANDSCAPING/ SURFACING /MISC ITEMS

A. All landscaping, borders, posts, existing underground sprinkler systems, ground covers such as beauty bark, rocks, gravel, boulders, logs and surfacing items such as concrete, existing asphalt and related items disturbed during construction shall be restored as nearly as possible to their original condition, or better, unless called for removal within the Drawings. The Contractor will coordinate with the Owner on any such items that will be removed. The

Contractor will not remove any such items other than what is necessary for access and construction purposes.

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, and campsite sections as shown 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 tree and stump removal, clearing, grubbing, 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, natural trail or campsite 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 Subgrade" 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. Imported 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 camp site area improvements as shown on the plans. The imported 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. 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 TOPSOIL STRIPPING

A. Measurement and payment for topsoil stripping shall be per the cubic yard as listed in the Proposal. The topsoil stripping depth was computed at 12 inches, and the quantity was computed from the plan lines and grades for the excavation limits to complete improvements for the middle and upper campground areas. The topsoil quantity listed in the Bid Form is final, and will not be adjusted unless a change is made to the plan line and grades. Areas outside of the roadway excavation limits, to include utility construction, trail construction, borrow areas, haul roads, and miscellaneous construction shall not be paid for directly and shall be considered incidental to the work.

4.3 TREE AND STUMP REMOVAL, CLEARING, GRUBBING AND DEMOLITION

B. Measurement and payment for tree and stump removal, 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, removal, 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 construction and camp site 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 sub-base 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. 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, building foundation, sidewalks, curb, and gutter 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 2022 (or current) "General Permit for Storm 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 Part III of 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

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 foot 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 foot 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 foot 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 02528
CONCRETE CURB AND GUTTER (*MPWSS, as amended*)

PART 1: GENERAL

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

2.4 GRAVEL BASE MATERIAL

Change "1 inch minus material: to ¾" minus material" in Paragraph A.

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

3.1 GENERAL

Add the following paragraph:

“B. During periods of Cold Weather, contractor must submit a cold weather concreting plan applicable to Section 3310, and comply with MPWSS Standards for cold weather concrete placement.”

3.2 FOUNDATION PREPARATION

C. Change “3 inches” to “4 inches” to both references within paragraph.

3.3 FORMS

Add the following Section:

“E. 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.”

Delete paragraph C. Crew in its entirety.

3.11 TOLERANCES

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

“A. Perform the work to produce a curb and gutter meeting the specified line and grade uniform in appearance and structurally sound. Remove and replace at Contractors expense curb and gutter having unsightly bulges, ridges, and/or low spots in the gutter, cracks at locations other than control joints, excessive honeycombing, or other defects as determined by Engineer. Grade shall not deviate more than 1/8 inch and alignment shall not vary more than 1/4 inch from plan elevation, grade or alignment. Tolerances may be checked using survey instruments, straight edges, or water puddling. Puddled water cannot exceed 1/4 inch in depth. Defective curb and gutter shall be removed and replaced at existing expansion or control joints (typically a 10 foot section). Replacement sections be to the nearest joint.

3.12 LAYDOWNS AND MODIFIED CURB

A. Form driveway laydowns and any modified curb sections as indicated on the plans, or as designated by the Engineer. The Engineer will mark locations in the field prior to the Contractor starting the curb work. There will be no separate measurement and payment for laydowns and modified curb. This work will be paid under concrete curb and gutter.”

END OF SECTION 02528

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 AND 6" CONCRETE SLABS

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 02533
GUARDRAIL (*Added Section)*

PART 1: GENERAL

1.1 Use Section 606 from the Montana Department of Transportation *Standard Specifications for Road and Bridge Construction,* 2020 Edition *(*attached as Appendix A), related sections referenced therin, most recent supplemental specifications (01-11-2024), and special provisions.

PART 2: PRODUCTS – NOT USED (See Section 606)

PART 3: EXECUTION – NOT USED (See Section 606)

PART 4: MEASUREMENT AND PAYMENT

4.1 GENERAL

A. Guardrail items are measured and paid for at the unit bid price for the completed and accepted quantities under the following:

Pay Item	Pay Unit
W-Beam Guardrail Wood Posts	LF
Optional Terminal Section	EA
One-way Departure Terminal Section	EA

B. Payment Includes all labor, tools, equipment, materials, and incidentals necessary to complete the work in full compliance with the plans and specifications.

END OF SECTION 02533

SECTION 02533

GUARDRAIL (*Added Section)*

Appendix A

SECTION 606

GUARDRAIL

606.01 DESCRIPTION

This work is the furnishing, installing, removing, resetting, replacing, and revising metal beam guardrail, cable guardrail, and box beam guardrail.

606.02 MATERIALS

Furnish steel beam guardrail, cable guardrail, and box beam guardrail materials in accordance with the following section and subsection requirements:

Box Beam Guardrail	Detailed Drawings
Guardrail Reflectors	704 and Detailed Drawings
Steel Beam Guardrail and Fittings	705.01.1
Steel Guardrail Post	705.01.5
Wood Guardrail Posts and Blocks	705.01.2
Wire Rope and Connecting Hardware	705.02

Furnish all new materials. Do not use refurbished material unless specified in the contract documents.

606.03 CONSTRUCTION REQUIREMENTS

606.03.1 General

Install guardrail meeting the requirements of Detailed Drawings and the contract. Install all guardrail, terminal sections, and impact attenuators according to the manufacturer's instructions. Submit the installation instructions at least 15 calendar days prior to the installation.

Submit a completed form MDT-CON-606-03 prior to installing guardrail items. At the Project Manager's request, provide documentation that each item or system of guardrail installation meets NCHRP 350 or MASH requirements.

The Project Manager will establish the line and grade for the terminal sections. Establish the line and grade between the terminal sections.

Correct all vertical and horizontal misalignment to the specified line and grade at Contractor expense. Optional terminal sections must be installed within 12 hours from the time the rail is exposed when conditions prevent completion in one working day. Approved temporary end treatments must be installed to protect blunt ends, ends of barriers, fixed objects, or other obstacles within the clear zone if left for more than 12 hours. Temporary end treatments are not measured for payment. Place, at Contractor expense, object markers at maximum 50-foot (15.2 m) spacing to delineate partial installation areas when work on those installations is not active.

Excavate the postholes and drive the posts using methods and equipment that do not damage the adjacent pavement.

Stop post driving that heaves the adjacent pavement more than ½-inch in 10 feet (13 mm in 3 m), measured using a 10-foot (3 m) straightedge parallel to the pavement.

Level and repair all damaged surfaces around the installed posts.

Use only steel or wood guardrail posts for new metal beam guardrail runs unless wood posts are specified.

Where the contract specifies extending an existing guardrail run, the Contractor may use either the existing post type or other approved post types in the extension. Use the post type specified for terminal sections.

When wood posts and blocks are damaged, cut or bored after treatment, treat the injuries in accordance with Subsection 706.04.1.

606.03.2 Installing Posts

Complete guardrail widening prior to new post installation.

Install posts in accordance with manufacturer recommendations. Drive posts unless conditions require excavation and backfilling. If the posthole is excavated, compact the posthole bottom, insert the post, and backfill and compact around the post in 6-inch (150 mm) loose layers ensuring the material is at optimum moisture before placing and compacting the next layer. Maintain the post line and grade.

Replace all posts damaged by post driving.

Maintain the post alignment as the posts are driven.

Fill the area between the surrounding ground and the post by backfilling and tamping. Re-compact the loose material around the post and level the area as directed.

Remove, replace, or re-install misaligned, loose, or damaged posts at Contractor expense.

When driving wood posts, pilot holes approximately 6 inches (150 mm) in diameter may be used when necessary.

606.03.3 Metal Beam Guardrail Erection

Install metal beam guardrail, including the terminal sections and bridge approach sections as shown in the Detailed Drawings and in accordance with the contract.

Splice the metal rail sections with the lap in the direction of traffic. Construct splices, laps, and terminal connectors as shown in the Detailed Drawings and in accordance with the contract. Splice the terminal connectors for attaching the rail sections to the bridge ends by lapping as shown in the Detailed Drawings.

Tighten the bolts through the splices and mounting bolts “snug tight”.

Ensure the bolts project at least ¼-inch (6 mm) beyond the nut. Place the bolt heads on the traffic side of the guardrail.

Drilling or cutting in the field is only allowed for special connections and sampling. Do not use cutting torches to cut guardrail or make bolt holes. Obtain Project Manager approval prior to drilling bolt holes or cutting guardrail for special connections.

Paint holes, slots, or cut ends in metal guardrail caused during installation with an approved galvanizing paint. Spot paint all bruised, broken, scaled, or damaged spelter coating on metal parts following the paint manufacturer’s recommendations after the guardrail is installed.

606.03.4 Stiffened Guardrail Sections

Construct stiffened guardrail sections as shown in the Detailed Drawings.

606.03.5 Box Beam Guardrail

Construct box beam guardrail and bridge approach sections as shown in the Detailed Drawings.

606.03.6 Cable Guardrail

Furnish and install cable guardrail and terminal sections in accordance with the Detailed Drawings and the contract. Install the posts plumb without damaging the post and its protective coating. For terminal sections, set the end posts, backfill and machine compact the backfill material in 4-inch (100 mm) lifts.

Install reflectors in accordance with Section 704 on every other post in the guardrail run excluding posts in the terminal sections that curve away from the driving lanes.

606.03.7 Raise Guardrail

Unbolt the W-beam and block from the guardrail post, raise and re-bolt through the upper hole of the guardrail post.

606.03.8 Remove Guardrail

Remove and salvage the existing guardrail from the specified locations in accordance with Section 202. Replace all guardrail damaged during removal at Contractor expense. Dispose of removed materials not designated to be salvaged.

Load all salvaged guardrail materials from the project, transport and unload it at the specified location or as directed.

Backfill and compact the postholes left from post removal using clean material or crushed base or top surfacing, to the base of the adjacent bituminous surfacing. Apply a light asphalt spray to the hole sides and bottom and backfill with asphalt surfacing. Compact the plant mix surfacing as specified.

Do not cut off and leave existing posts in place.

606.03.9 Revise Guardrail Elements

Revise the guardrail elements as specified. The items include but are not limited to W-beam sections, bridge approach sections and terminal sections.

606.03.10 Nested W-Beam Guardrail Sections

Construct nested guardrail as shown in the Detailed Drawings.

606.03.11 Reset Guardrail Items

Reset existing guardrail items to the specified locations in the contract. Meet all the requirements of this section and the Detailed Drawings.

Remove the rail elements or cable, and completely remove the post. Backfill and compact the posthole bottom, re-install the posts, and compact the backfill around the post in accordance with Subsection 606.03.2, and replace the rail elements or cable to the specified height.

Replace all guardrail materials damaged during the work at Contractor expense.

Correct all horizontal and vertical alignment in the guardrail to the specified line and grade.

606.03.12 Optional Terminal Sections

Supply the optional terminal section(s) as listed in the contract meeting the requirements for the specified item. Furnish MASH tested W-Beam terminal sections listed on the QPL. The items include but are not limited to metal guardrail terminal sections and box beam terminal sections. When new terminal sections tie into existing rail, it may be necessary to raise the existing rail to match the new terminal section height. Transition a minimum of 50 feet (15.2 m).

606.03.13 Guardrail End Terminal Section Widening

Furnish and place embankment material or gravel to widen the roadway to accommodate guardrail extensions or new optional terminal sections as shown in the Detailed Drawings. This work may also include the removal of sanding material and shaping of the existing soils to achieve positive drainage.

Compact widening to a minimum of 90% of maximum density with no optimum moisture requirement.

606.04 METHOD OF MEASUREMENT

606.04.1 Metal Guardrail

Metal guardrail, excluding terminal sections, is measured by the foot (meter) from center-to-center of the end posts of each section.

606.04.2 Optional Terminal Sections

Optional terminal sections are measured by the unit as shown in the Detailed Drawings, unless otherwise specified, for each type specified. When transitions are needed to tie into existing rail, the labor and equipment necessary to perform this work is not measured for payment and is to be included in the price for optional terminal sections.

606.04.3 Bridge Approach Sections

Bridge approach sections, including tapered curbs, are measured by the unit for each type specified as shown in the Detailed Drawings.

606.04.4 Stiffened Guardrail Sections

Stiffened guardrail sections are measured by the foot (m) from center-to-center of the end posts of each stiffened section as shown in the Detailed Drawings.

606.04.5 Box Beam Guardrail

Box beam guardrail is measured by the foot (m), excluding the terminal sections, as shown on the Detailed Drawings.

606.04.6 Cable Guardrail

Cable guardrail is measured by the foot (m), excluding the terminal sections.

606.04.7 Cable Guardrail Terminal Sections

Cable guardrail terminal sections are measured by the unit.

606.04.8 Impact Attenuators

Impact attenuators are measured by the unit as specified in the contract.

606.04.9 Raise Guardrail

Raise guardrail, including terminal sections, is measured by the foot (m) from center-to-center of the end posts of each section.

606.04.10 Remove Guardrail

Remove guardrail is measured by the foot (m) from center-to-center of end posts of each section removed. Material and equipment necessary for backfill and compaction of post holes is not measured for payment and is to be included in the price for remove guardrail.

606.04.11 Revise Guardrail Elements

Revise guardrail elements are measured by each element revised, as specified in the contract.

606.04.12 Nested W-Beam Guardrail Sections

Nested guardrail is measured by the foot (m), as shown in the Detailed Drawings.

606.04.13 Reset Guardrail Items

Reset guardrail items are measured by the unit as specified in the contract.

Material and equipment necessary for backfill and compaction of post holes is not measured for payment and is to be included in the price for reset guardrail.

606.04.14 Guardrail End Terminal Section Widening

Optional terminal section widening is paid by each end section completed. Include the cost of topsoil, seeding and fertilizer used in the widened areas in the unit bid price for optional terminal section widening.

606.05 BASIS OF PAYMENT

Payment for the completed and accepted quantities is made under the following.

Pay Item	Pay Unit
Metal Guardrail	Foot (meter)
Metal Guardrail Terminal Section	Each or Foot (meter)
Bridge Approach Section	Each
Stiffened Guardrail Sections	Foot (meter)
Box Beam Guardrail	Foot (meter)
Box Beam Guardrail Terminal Section	Each
Cable Guardrail	Foot (meter)
Cable Guardrail Terminal Section	Each
Concrete Barrier Rail	Each
Impact Attenuators	Each
Reset Concrete Barrier Rail	Each
Concrete Barrier Rail Transition	Each
Concrete Barrier Rail Terminal Section	Each
Raise Guardrail	Foot (meter)
Remove Guardrail	Foot (meter)
Remove Concrete Barrier Rail	Each
Nested Guardrail Sections	Foot (meter)

Revise guardrail elements is paid for under the appropriate bridge approach section or guardrail terminal section.

Payment at the contract unit price is full compensation for all resources necessary to complete the item of work under the contract.

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 MARKING

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 new sign posts and sign mounting hardware, installation of posts per the details on the plans, and mounting of the sign faces.

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 Installation” as indicate in the Bid Form. Measurement and payment shall include sign face, sign post, sign mounting hardware, foundation gravel, excavation, backfill and compaction, installation of sign face, and all labor, materials, and incidentals to complete sign installation. Relocation of street signs, where indicated, shall be paid for as listed in the Bid Form.

END OF SECTION 02585

SECTION 02660
WATER DISTRIBUTION SYSTEM (*MPWSS as amended)*

PART 1: GENERAL

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

"1.1 DESCRIPTION

A. Construct the water distribution system, to include water services, in conformance with the contract documents, "Montana Department of Environmental Quality Circular DEQ-3, Montana Standards for Small Water Systems", and as specified as follows. This section includes water-distribution piping and related components for domestic service. Furnish and install water lines, together with related appurtenances. Construct water services, including water service piping, curb stops and related items. Remove and/or abandon existing water distribution system mains, fittings, services, and other appurtenant items as noted on the plans. Furnish a manufacturer's certification covering all pipe and fittings furnished, certifying that the pipe and fittings meet applicable specifications. Provide submittals, to include product data and manufacturers certifications for all pipe, pipe fittings, valves, and hydrants."

PART 2: PRODUCTS

Delete Part 2 in its entirety and replace with the following:

"2.1 MATERIALS

A. Furnish water main pipe and fittings meeting the material and testing requirements of this Section. Furnish fittings and service line piping of the same material and design as the water main pipe unless specified otherwise. Pipe strength classifications are shown on plan drawings and/or are listed in the Contract Documents. References made to ASTM, ANSI, AWWA, USASI or AASHTO designations are the latest revision at the time of call for proposals. Assure all pipe is clearly marked showing type, class and/or thickness. Lettering must be legible and permanent under normal handling and storage conditions.

B. Polyethylene Pipe (HDPE) Pressure Pipe. Furnish HDPE water main pipe from ¾" to three (3) inches as indicated on the plans. Use pipe meeting AWWA Specification C901, "Polyethylene (PE) Pressure Pipe, Tubing and Fittings, 1/2 inch through 3 inch for Water" and ASTM PE3406-3408.

1. PE pipe to be (IPS) SIDR 7 for diameters of ¾ inch to 2 inch. Stainless steel inserts required on all compression type fittings for PE tube.

2. Install tracer wire on all PE pipe.

C. Curb Stops.

1. Provide curb stops that are Mueller 300 Ball Curb Valves with drain with Insta-Tite or 110 compression fittings. Stainless steel liners are required for 110 compression fittings on PE pipe.

D. Curb Boxes.

1. Provide extension type, stationary rod, Minneapolis pattern, 1.5" diameter Mueller H-10302 or approved equal. Extended lengths on all boxes must be a minimum of 78 inches. Stationary rods to be 63 inches standard.

E. Special Fittings.

1. Furnish special fittings meeting the Contract Documents. Special fittings shall be brass or stainless steel compatible with pipe size and type. Fittings shall be Mueller or approved equal. Transition couplings and special fittings with pressure ratings at least equal to piping pressure rating may be used, unless otherwise indicated.

F. Tracer Wire. Install with all mains and services with 14 gauge (minimum) insulated solid core tracer wire for the non-metallic buried piping.

1. Tape tracer wire to the top of the water main. Bring up and tie off tracer wire at each valve body, curb stop and fire hydrant. Make breaks, splices or taps with waterproof, solderless and corrosion proof connectors rated for all underground direct bury applications.

2. All tracer wire shall be tested by the Contractor prior to final inspection. Contractor shall notify the Engineer 24 hours in advance of the testing.

G. Pipe Bedding Materials.

1. Pipe bedding shall conform to the thickness and widths as indicated in the plans and meeting the material and compaction requirements included within Section 02221.

I. Hydrant Assemblies

1. Furnish hydrant assemblies meeting the materials indicated on the detail on the plans. Submit all hydrant materials and fittings for approval prior to ordering materials."

PART 3: EXECUTION

Delete Part 3 in its entirety and replace with the following:

"3.1 Install pipe following the manufacturer's specifications and instructions. Provide all tools and equipment required to install each type of pipe used. Replace all defective material or material damaged by handling after delivery by the manufacturer. Include the furnishing of all materials and labor required to replace installed material discovered

damaged or defective before final acceptance of the work, or during warranty period. Store all material safely and to prevent damage. Keep pipe interior and other accessories free from dirt and foreign matter at all times. Deliver and distribute all Contractor furnished pipe at the site. Load and unload pipe, fittings, specials, valves and accessories to prevent damage. Do not handle pipe on skidways to skid or roll against pipe already on the ground. Repair or replace all damaged pipe at Contractor's expense on the jobsite.

3.2 LAYING OF PIPE

A. Inspect pipe and pipe coating for damage or defects prior to installation. Lay pipe without damaging the pipe coating. Repair all pipe coating damage following the manufacturer's instructions before laying the pipe. Lay pipe to the specified lines and grades with fittings and valves at the required locations. Plumb all valve stems. Carefully lower all pipe, fittings and valves into the trench to prevent damaging pipe materials or coatings. Do not allow foreign material to enter the pipe during installation. Close the open ends of the pipe using a watertight plug or other approved methods to prevent material entering the pipe when installation is not in progress.

3.3 PIPE JOINTING

A. Drawings indicate general arrangement of piping, fittings, and specialties. Piping installation requirements are to be completed per manufacturer’s recommendations. Do not exceed the applicable material and joint specifications of AWWA or the pipe manufacturer's recommendations at pipe joints for various types of pipe. Excavate trenches to accommodate deflections and curves.

3.4 PIPE CUTTING

A. Cut pipe for inserting valves, fittings or closure pieces in a neat and workmanlike manner without damaging the pipe or coating and leaving a smooth end at right angles to the pipe axis. Do not cut pipe using an oxyacetylene torch.

3.5 TESTING, CLEANING & DISINFECTING WATER PIPES, VALVES, AND FITTINGS

A. Disinfect the water mains subject to the Project Manager's approval in accordance with AWWA C651, "Disinfecting Water Mains", and these specifications, before placing the main in service. Keep the interior of all pipe, fittings and appurtenances free from dirt, heavy and foreign particles.

B. Forms of Chlorine

1. The forms of chlorine that may be used, subject to the approval of the Project Manager, are:

a. Liquid chlorine containing 100 percent available chlorine under pressure in steel containers. Meet AWWA B301 requirements and use only in combination with appropriate gas-flow chlorinators and ejectors.

b. Sodium hypochlorite in liquid form containing approximately 5 to 15 percent available chlorine. Meet AWWA B300 requirements.

c. Calcium hypochlorite in granular form or in 5g tablets containing approximately 65 percent available chlorine by weight. Meet AWWA B300 requirements.

C. Methods of Chlorination

1. Three (3) methods of chlorination may be used:

a. Tablet Method

1) This method gives an average chlorine dose of approximately 25 mg./L

2) This method may be used if the pipes and appurtenances are kept clean and dry during construction.

3) During construction, place calcium hypochlorite granules at the upstream end of the first section of pipe, at the upstream end of each branch main, and at 500-foot (150 meter) intervals. Use the quantity of granules shown in Table 2.

4) Warning: Do not use this procedure on solvent welded plastic or on screwed joint steel pipe because of fire or explosion hazard from the reaction of the joint compounds with the calcium hypochlorite.

TABLE 2
OUNCES OF CALCIUM HYPOCHLORITE GRANULES TO BE PLACED AT BEGINNING OF MAIN AND AT EACH 500-FOOT (150 METER) INTERVAL

Pipe Diameter		Calcium Granules	
Inches	(cm)	oz.	grams
4	(10)	0.5	14
6	(15)	1.0	28
8	(20)	2.0	57
12	(30)	4.0	113
16 and	(41)	8.0	227

5) During construction, place 5g calcium hypochlorite tablets in each section of pipe and also place one tablet in each hydrant, hydrant branch and other appurtenance. Use the number of 5g tablets for each pipe section required to provide a minimum chlorine concentration of 25 mg/L.

Attach tablets to the inside of the pipe using an adhesive such as Permatex No. l or equal. Assure no adhesive is on the tablet except on the broad side attached to the surface of the pipe. Attach all the tablets at the inside top of the main, with approximately equal numbers of tablets at each end of a given pipe length. If the tablets are attached before the pipe section is placed in the trench, mark their position on the section so it can be readily determined that the pipe is installed with the tablets at the top.

6) When installation has been completed, fill the main with water at a velocity not exceeding 1 fps. Take precautions to assure that air pockets are eliminated. Leave this water in the pipe for at least 24 hours. If the water temperature is less than 41 ° F, leave the water in the pipe for at least 48 hours. Position valves so that the chlorine solution in the main being treated will not flow into water mains in active service.

b. Continuous Feed Method (preferred method)

1) This method gives a 24 hour chlorine residual of not less than 10 mg/L

2) Before chlorinating, fill the main with water to eliminate air pockets and flush as specified above.

3) Use water from the existing distribution system or other approved source of supply to flow at a constant, measured rate into the newly laid water main. At a point not more than 10 feet (3 meters) downstream from the beginning of the new main, assure water entering the new main receives chlorine fed at a minimum 25 mg/L free chlorine. To assure that this concentration is provided, measure the chlorine concentration at regular intervals.

4) If continuous feed method is proposed, coordinate the required amounts of chlorine compound required for various pipe sizes with the Project Manager.

5) During chlorine application, position valves so that the chlorine solution in the main being treated does not flow into water mains in active service. Do not stop chlorine application until the entire main is filled with chlorinated water. Retain the chlorinated water in the main for at least 24 hours, operating all valves and hydrants in the section treated to disinfect the appurtenances. At the end of the 24-hour period, the treated water in all portions of the main must have a minimum free chlorine residual of 10 mg/L free chlorine.

6) The preferred equipment for applying liquid chlorine is a solution feed vacuum operated chlorinator to mix the chlorine gas in solution water, in combination with a booster pump for injecting the chlorine gas solution water into the main to be disinfected. It is recommended that direct feed chlorinators not be used. Hypochlorite solutions may be applied to the water main with a chemical feed pump designed for feeding chlorine solutions.

7) If approved, an optional continuous feed method utilizing calcium hypochlorite granules may be used. Place the granules in the pipe sections as specified under the Tablet Method.

c. Slug Method (requires pre-approval by the Project Manager)

1) This method provides a three hour exposure of not less than 50 mg./L free chlorine.

2) Before chlorinating, preliminary flush the main as specified herein.

3) Use water from the existing distribution system or other approved source of supply to flow at a constant measured rate into the newly laid water main.

4) Not more than 10 feet (3 meters) downstream from the beginning of the new main, add chlorine to the water entering the new main at a constant rate that the water will have a minimum of 100 mg/L free chlorine. Measure this concentration at regular intervals. Apply the chlorine continuously and for the time required to develop a solid column or "slug" of chlorinated water that, as it moves through the main, exposes all interior surfaces to a 100 mg/L for at least 3 hours.

5) Measure the free chlorine residual in the slug as it moves through the main. If at any time it drops below 50 mg/L stop the flow and relocate the chlorination equipment at the head of the slug, and as flow is resumed, add chlorine to restore the free chlorine in the slug to not less than 100 mg/L.

6) As the chlorinated water flows past fittings and valves, operate related valves and hydrants to disinfect appurtenances and pipe branches.

D. Final Flushing (clearing the main of heavily chlorinated water)

1. After the applicable retention period, do not allow heavily chlorinated water to remain in prolonged contact with pipe. In order to prevent

damage to the pipe lining or corrosion damage to the pipe itself, flush the heavily chlorinated water from the main until chlorine measurements show that the concentration in the water leaving the main is no higher than that generally prevailing in the system or is acceptable for domestic use.

2. Dechlorinate heavily chlorinated water when discharge is to waters of the State of Montana.

E. Swabbing. Where connections are made to existing piping and the connections are not disinfected along with the newly installed main, swab or spray the interior of all pipe and fittings used in making the connections with a 1 percent hypochlorite solution before installation.

F. Supply, at no additional cost to the Owner, all items used for testing purposes, including chlorination and the use of temporary blow-offs.

G. Hydrostatic and Leakage Testing.

1. Perform hydrostatic and leakage testing in accordance with ASTM F2164. Once the pipe is laid and backfilled, test per ASTM F2164 located in Attachment A to a hydrostatic pressure of at least 1.5 times the normal operating pressure at the test point or 1.25 times the normal operating pressure at the highest point along the test section.

2. Cleaning Water Mains.

a. Flush the mains thoroughly after the pressure and leakage test are completed.

b. It is understood that such flushing removes only the lighter solids and cannot be relied upon to remove heavy material allowed to get into the main during placement. Use a minimum flushing velocity in the main of 2.5 feet per second (0.7 meters/second). If no hydrant is installed at the end of the main, provide a tap, or temporary blowoff, of the size to produce a velocity in the main of at least 2.5 feet per second (0.7 meters/second).

H. Bacteriological Tests.

1. After final flushing and before the water main is placed in service, test a sample, or samples, collected from the main(s) for turbidity and organisms. Collect at least one sample from the new main and one from each branch.

2. Redisinfection. If the initial disinfection fails to produce approved bacteriological or turbidity samples, re-flush and resample the main. If check samples show bacterial contamination, re-chlorinate the main until approved results are obtained.

I. Water and Sewer Main Separation. Maintain horizontal and vertical separation between water mains and sewer mains in accordance with the Contract Documents.

3.6 CAP ENDS AND ABANDON PIPE

A. Cap ends of existing water main and services as indicated on the Plans. Remove existing materials such as hydrants and fittings as called for. Salvage any existing materials to Owner as may be indicated on the Plans.

B. Crushing the ends is an acceptable means of capping pipes composed of ductile materials.

C. Work associated with abandoning existing main shall not be paid for directly and shall be considered incidentals to construction."

PART 4: MEASUREMENT AND PAYMENT

"4.1 GENERAL

A. The following items are pay items for the work covered under this section. Payment for these items is full compensation for providing all materials, tools, labor and equipment necessary to complete the item and all incidental work related thereto, whether specifically mentioned herein or not.

B. Any trees that need to be removed for the work covered under this section shall be considered incidental and are not included in the "Stump/Root Ball Removal." Bid Item

C. Removal and replacement of existing asphalt, where required to complete the work covered under this section, shall be considered incidental.

4.2 WATER PIPE

A. The measurement of water pipes (mains or services) is made per linear foot along the centerline of pipe through all valves, fittings and appurtenances (unless listed in the proposal as separate items). Payment for water pipe will be made at the contract unit price bid per linear foot of various sizes called for, which includes furnishing and installing pipe, furnishing and placing bedding, trench excavation and backfill per Section 02221, cleaning, testing and disinfecting the water pipe and all other work necessary or incidental for completion of the item.

B. All restoration associated with water pipe construction, to include asphalt patching matching the details on the plans, shall be included in the linear foot price for water pipe.

4.3 FITTINGS AND VALVES

A. Measurement of water main fittings and valves is by numerical count of the various types and sizes listed in the Contract Documents. Payment for fittings and valves is made at the contract unit price bid for each fitting and includes

furnishing and installing the fittings or valves as required, thrust blocking and any other work necessary or incidental for completion of the item. Valves or fittings not specifically called for payment as listed in the Proposal shall be considered incidental to the water pipe as listed in section 4.2.A.

4.4 HYDRANT ASSEMBLIES

A. Hydrant assemblies shall be measured and paid for per the each for the type of hydrant as listed in the Proposal. Payment for hydrant assemblies includes furnishing and installing all components and incidentals as detailed on the hydrant assembly details within the plans. Payment shall include all materials, including RCP pipe, hydrant assemblies, fittings, piping, drain rock and any other work necessary or incidental for completion of the item in place.

4.5 RELOCATE EXISTING YARD HYDRANT

A. Relocating Hydrant assemblies shall be measured and paid for per the each for the type of hydrant as listed in the Proposal. Payment for hydrant assemblies includes removing, installing all components and incidentals as detailed on the hydrant assembly details within the plans. Payment shall include all materials, including RCP pipe, fittings, piping, drain rock and any other work necessary or incidental for completion of the item in place.

4.6 CONNECT TO EXISTING WATER LINE

A. Measurement and payment for this item will be per the each for the price listed in the proposal for “Connect to Existing Water Line”, and will be full compensation for all work associated with this connection, and shall include all labor, equipment, materials and incidentals including locating service, excavation, backfill, new fittings as required, coordination and shutdown of service as required, tie-in, restoration as required, and all incidentals above and beyond the payment for water service line.

4.7 RELAY 8” SCH 40 PVC CHLORINE CONTACT PIPE

A. The measurement of 8” SCH 40 PVC chlorine contact pipe is made per linear foot along the centerline of pipe through all valves, fittings and appurtenances (unless listed in the proposal as separate items). Payment for 8” SCH 40 PVC chlorine contact pipe will be made at the contract unit price bid per linear foot of various sizes called for, which includes installing pipe, furnishing and placing bedding, trench excavation and backfill per Section 02221, cleaning, testing and disinfecting the water pipe and all other work necessary or incidental for completion of the item.

4.8 ABANDON EXISTING WATER SYSTEM

A. Measurement and payment for this item will be per the each for the price listed in the proposal for “Abandon Existing Water Line”, and will be full compensation for all work

associated with this connection, and shall include all labor, equipment, materials and incidentals including locating service, excavation, backfill, new fittings as required, coordination and shutdown of service as required, tie-in, restoration as required, and all incidentals above and beyond the payment for water service line

4.9 EXTEND EXISTING DRAINPIPE

A. The measurement of water drainpipes is made per linear foot along the centerline of pipe through all valves, fittings and appurtenances (unless listed in the proposal as separate items). Payment for water drainpipes will be made at the contract unit price bid per linear foot of various sizes called for, which includes furnishing and installing pipe, furnishing and placing bedding, trench excavation and backfill per Section 02221, cleaning, water drainpipes and all other work necessary or incidental for completion of the item.

B. All restoration associated with water drainpipes construction, to include asphalt patching matching the details on the plans, shall be included in the linear foot price for water drainpipes.

4.10 WATER SYSTEM TESTING

A. Testing of the water system, to include pressure and bacteriological testing, and all items used for testing purposes including chlorination and de-chlorination, as required, and the use of temporary blow-offs and miscellaneous materials shall not be paid for directly and shall be considered incidental to other items of work."

END OF SECTION 02660

SECTION 02730
SANITARY SEWER COLLECTION SYSTEMS (*MPWSS, as amended*)

PART 1: GENERAL

1.4 STANDARD DRAWINGS

A. Delete all Standard Drawings except Nos. 02720-7, and 02730-1. Add the following:

"Sanitary Sewer Details and shown on the Drawings."

PART 2: PRODUCTS

2.2 PIPE MATERIALS

A. Polyvinyl Chloride (PVC) Pipe

2. Gravity Sewer Pipe

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

“a. Furnish gravity sewer service pipe and fittings shall be ASTM D 1785 (PVC) Schedule 40. Pipe shall conform to ASTM D2665-82 and D3311-71 standards in accordance with UPC. Fittings shall conform to ASTM D2665-78 and D3311-79a and shall be glue fitting only. Solvent cement and primer shall conform to ASTM D2564-86.”

PART 3: EXECUTION

3.1 PIPE AND SERVICE LINE INSTALLATION:

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

“E. Tolerances

1. Variance from established line and grade shall not be greater than 1/4”, provided that such variation does not result in a level or reverse sloping invert.”

Add the following paragraph:

“3.6 PLUG AND ABANDON PIPE

A. Cap ends of existing sewer main and services as indicated on the Plans or where existing sewer will be abandoned. Work associated with abandoning existing main shall not be paid for directly and shall be considered incidentals to construction.”

PART 4: MEASUREMENT AND PAYMENT

"4.1 GENERAL

A. The following items are pay items for the work covered under this section. Payment for these items is full compensation for providing all materials, tools, labor and equipment necessary to complete the item and all incidental work related thereto, whether specifically mentioned herein or not.

B. Any trees or vegetation that need to be removed for the work covered under this section shall be considered incidental and are not included in the "Stump/Root Ball Removal." Bid Item

C. Removal and replacement of existing asphalt, where required to complete the work covered under this section, shall be considered incidental.

4.2 SEWER SERVICE

A. The measurement of sewer service is made per linear foot along the centerline of pipe through all bends, fittings and appurtenances (unless listed in the proposal as separate items). Payment for sewer service shall be made at the contract unit price bid per linear foot of sizes called for in the Proposal, which includes furnishing and installing pipe, furnishing and placing bedding, trench excavation and backfill per Section 02221, and all other work necessary or incidental for completion of the item.

B. All restoration associated with sewer service and related sewer installation, to include asphalt patching matching the details on the plans, shall be included in the linear foot price for sewer service.

4.3 CONNECT TO EXISTING SEPTIC TANK

A. Connection to existing septic tank will be paid for per the Each as listed in the Proposal. Measurement and Payment shall be full compensation for all costs associated with locating the tank, making the connection, sealing any penetrations as needed, all pipe and fittings to make the connection, and any incidentals to connect to the existing septic tank per the drawings and specifications.

4.4 CONNECT TO EXISTING SEWER LINE

A. Connection to the existing sewer line will be paid for per the Each as listed in the Proposal. Measurement and Payment shall be full compensation for all costs associated with locating the sewer line, making the connection, all pipe and fittings to make the connection, and any incidentals to connect to the sewer line per the drawings and specifications.

4.5 ABANDON EXISTING SEWER LINE

A. Abandon existing sewer line will be paid for per the Each as listed in the Proposal. Measurement and Payment shall be full compensation for all costs associated with locating the sewer line, all pipe and fittings to make the disconnection, and any incidentals to disconnect and abandon the sewer line per the drawings and specifications.

4.6 CLEANOUTS AND RV CONNECTIONS

A. Cleanout and RV connections shall be constructed as indicated on the plan details. These items shall be paid for by the Each as indicated on the Proposal. Payment shall include all labor, equipment, materials, and incidentals to complete the item in place."

END OF SECTION 02730

SECTION 02735
HORIZONTAL DIRECTIONAL DRILLING (*Added Section*)

PART 1: GENERAL

1.1 DESCRIPTION

A. Section includes requirements for Horizontal Directional Drilling (HDD) of High Density Polyethylene (HDPE) Pressure Sewer pipe.

1.2 QUALITY ASSURANCE

A. Experience: Actively engaged in horizontal directional drilling for minimum of 3 years.

B. Field supervisory personnel: Experienced in the performance of work and tasks as stated herein for minimum of 3 years.

1.3 SUBMITTALS

A. Submit for information only.
   1. Presentation of similar experience in the last 3 years.
   2. Include, but not limited to, owner name, address, telephone number, contact person, date and duration of work, location, pipe information, and contents handled by pipeline.
   3. Supervisory field personnel and historical information of HDD experience.
   4. At least one field supervisor listed must be at site when HDD operations are in progress.

B. Submit following Section 01300.
   1. Working Drawings and written procedure describing in detail proposed method and entire operation for information only including, but not limited to:
      a. Size, capacity and arrangement of equipment.
      b. Location and size of drilling and receiving pits.
      c. Dewatering and methods of removing spoils material.
      d. Method of installing detection wire and pipe.
      e. Type, location, and method of installing locator station.
      f. Method of fusion pipe segment and type of equipment.
      g. Type of cutting head.
      h. Method of monitoring and controlling line and grade.
      i. Detection of surface movement.
      j. Bentonite drilling mud for information only:
         1) Products information, material specifications, and handling procedures.
         2) Material safety data sheet and special precautions required.
         3) Method of mixing and application.

1.4 PROJECT CONDITIONS

A. Complete HDD so as not to interfere with, interrupt, or endanger surface and activity thereon.
B. Follow applicable ordinances, codes, statutes, rules, and regulations of State of Montana, applicable County building codes, affected Railroad Company, and applicable regulations of Federal Government, OSHA 29CFR 1926, and applicable criteria of ANSI A10.16-1995 (R2001), “Safety Requirements for Tunnels, Shafts, and Caissons.”

PART 2: PRODUCTS

2.1 MATERIALS

A. Pipe.
1. HDPE: See Section 02740.
2. HDPE Joints:
a. Butt fusion joining technique for joining pipe segments installed by HDD. See Section 02740.
b. When joining HDPE pipe at ends of directional drilling runs fusion bond to adjacent pipe section.
1) Use butt fusion, socket fusion, or electrofusion coupling joining technique: See Section 02740.
a. Mechanical Couplings are not permitted for joining of directional drilled pipe sections.
3. Connect to Other Pipe Materials: See Section 02740.

B. Drilling Fluid:
1. Bentonite drilling mud compatible with environment.
2. Waste oil or environmentally non-compatible polymers cannot be part of composition.

PART 3: EXECUTION

3.1 PREPARATION

A. Excavate pits following Working drawings and Section 02221.
B. Provide equipment to guard against electrocution and alarm system on drilling equipment capable of detecting electrical current as it approaches electric lines.
C. Test pit underground utilities crossing before HDD operation.

3.2 OPERATION

A. General.
1. Determine drilling length and equipment pull strength for type of soil encountered.
2. Provide method to control line and grade.
a. Provide and maintain instrumentation that accurately locates pilot hole.

b. Drill pilot hole along path following Drawings to these tolerances:
   1) Vertical alignment plus or minus 0.5 foot. Vertical path of pilot hole must not establish new high points not shown on Drawings.
   2) Horizontal alignment plus or minus 1.0 foot.
c. Include electronic monitoring of horizontal and vertical drilling head location. Obtain accuracy range within 1 inch of actual position of pipeline. Record position readings at maximum of 10-foot intervals.
d. At completion of pilot hole drilling, furnish tabulations of horizontal and vertical alignment to Engineer.

3. When water is encountered.
   a. Provide and maintain dewatering system of sufficient capacity to remove water.
   b. Keep excavation free of water until backfill operation is in progress.
   c. Perform dewatering in manner that removal of soils particles are held to minimum.
   d. Dewater into sediment trap.
4. Maintain close observation to detect settlement or displacement of surface and adjacent facilities.
   a. Notify Engineer immediately if settlement or displacement is detected.
   b. Maintain safe conditions and prevent damage.

D. Drilling Operation.
1. Drilling Fluids.
   a. Maintain drilling fluid in bore hole to increase stability of surrounding soil and reduce drag on pulled pipe. Contractor to coordinate and secure water source for drilling operation prior to drilling operations.
   b. Dispose of drilling fluid and other spoils at location following laws, ordinances, rules, and regulations of local jurisdiction. Contractor to select disposal location.
   c. Transport excess fluids and other spoils to disposal site, at no additional cost to the Owner.
   d. Minimize drilling fluid at locations other than entry and exit points. Immediately clean up any drilling fluids that inadvertently surface.
   e. Provide clean water for drilling, at no cost to the Owner.

2. Pilot Hole Drilling.
   a. Angle entry hole so that curvature of pilot hole does not exceed allowable bending radius of HDPE pipe.
   b. Be able to make a turn of up to 90 degrees and maintain curvature not to exceed allowable bending radius of HDPE pipe.
   c. Alignment Adjustment and Restarts.
      1) Follow pipeline alignment on Drawings within tolerances specified herein. Before adjustments, notify Engineer for approval.
      2) Notify Engineer when forward motion of operation is stopped by an obstruction.

3) Withdrawals, abandonments, and restarts are at no additional cost to the Owner.
4) Exercise caution including, but not limited to, locating utilities, drilling downholes (test pits) to observe drill stems or reamer assembly to clear other existing utilities at locations following Drawings.
5) Keep the number of boring pits to a minimum, no closer than following distances, unless otherwise approved by Engineer.
   a) Equipment must be capable of boring design length in a single bore.
6) Cased bores are acceptable and shall be identified as to limits and depths in submitted working drawings and written procedures.

3.3 INSTALLATION

A. Installing HDPE Pipe.
1. Provide a swivel to reaming assembly and pull section of pipe to minimize torsional stress on pull section after drilling pilot hole.
2. Hole reaming diameter to 1.5 times outside diameter of HDPE pipe being installed.
3. Protect pull section as it proceeds during pull back so it moves freely and is not damaged.
4. Replace portions of pipeline not in compliance with Contract Documents at Engineer's direction and at no additional cost to the Owner.

1) each detection wire to terminal block in locator station.

3.4 FIELD QUALITY ASSURANCE

A. Perform field testing of HDPE pipe following Section 02730 and Section 02740.

PART 4: MEASUREMENT AND PAYMENT

4.1 Payment for HDPE pipe installed by HDD, cased bore or by open cut trench method measured and paid for following Section 02740.

END OF SECTION 02735

SECTION 02740
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 Joseph Renenger of FWP. Vault toilets shall be delivered and set by Missoula Concrete.

1.2 PRODUCTS

A. Vault toilet shall 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 section 8.0 (Installation) of 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. Coordinate all electrical components for toilet installation (see electrical plans). 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 Preparation” as listed in the proposal shall be Lump Sum 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 02740

02740 VAULT TOILET

ATTACHMENT B

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.

_____

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 the 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 the 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 lopper 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 to paragraph B.

"Hydraulic seeding shall be required for all slopes greater than 3:1.

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 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 included within Attachment A to this Section. Fertilizer shall be required as indicated within Attachment A.

NOTE: Seeding rate from Attachment A shall be doubled for hydraulic seeding as indicated in Section 02920.

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

3.2 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:

"3.5 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. Payment shall include full compensation for all seed and fertilizer materials, seedbed preparation, topsoil installation to a minimum of 6 inches, all labor, equipment, materials and incidentals to complete seeding in place."

END OF SECTION 02910

CHS

NATIVE GRASS MIXES FOR 2009

NATIVE VALLEY MIX
15% Western Wheatgrass (S)
30% Bluebunch Wheatgrass (B)
25% Slender Wheatgrass (B)
30% Green Needlegrass (B)
25-30 lbs. Per Acre
This mix was developed for the Flathead Valley for Dryland areas.

NATIVE FOREST MIX
15% Western Wheatgrass (S)
35% Bluebunch Wheatgrass (B)
40% Mountain Brome (B)
10% Rough Fescue (B)
25-30 lbs. Per Acre
For use in forested areas of the Flathead Valley.

NATIVE RECLAMATION MIX
40% Streambank Wheatgrass (S)
35% Thickspike Wheatgrass (S)
25% Slender Wheatgrass (B)
25-30 lbs. Per Acre
A good mix for disturbed areas that won't be irrigated.

These seeding mixes are recommended by the NRCS and the Flathead Conservation District. They will establish in Flathead County on both silty and loamy sites. Extra care and patience are required as native species are slower to establish. Reseeding may be necessary.

Other native mixes are available and the NRCS and Flathead Conservation District can recommend a mix for your specific area.

We recommend 16-16-16 fertilizer at a rate of 100 lbs. per acre to help these mixes get established.

B = bunch type grass *S= sod forming grass*

SECTION 02920
HYDRAULIC SEEDING (*MPWSS, as amended*)

PART 2: PRODUCTS

Add the following to paragraph 2.1

"Hydraulic seed rate shall be doubled as indicated on Attachment A within Section 02910."

PART 3: EXECUTION

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

"3.1 TOPSOIL

A. Place a minimum of 6 inches of topsoil in all areas to be hydraulically seeded as specified on plans. Topsoil shall meet requirements as described in Section 02910. Topsoil installation, to include hauling, spreading, and seed bed preparation, shall be including in the bid item for hydraulic seeding."

Delete paragraph 3.3 in its entirety and replace with the following:

"3.3 MAINTENACE RESPONSIBILITIES

A. Contractor shall inspect hydraulically seeded areas after rain storms, repair any damaged ground cover and re-mulch exposed areas until the end of the warranty period.

B. The Contractor shall maintain the hydraulically seeded area, performing any re-seeding, watering, and weed abatement required until the end of the warranty period. Enforcement of restoration, seeding, and weed control will be strictly enforced."

Add the following sections:

"3.4 TACKIFIER

All hydraulic seeding areas must have an approved steep slope tackifier included in application to prevent erosion. Tackifier shall be chosen by the Contractor and submitted and approved by the Engineer prior to hydraulic seeding.

3.5 SEEDBED PREPARATION

All seedbed preparation and seed mixtures shall be in conformance with Section 02910 Seeding.

3.6 MULCH

All hydraulic seeding areas must incorporate an approved mulch in the application to prevent erosion and protect seed growth. Mulch shall be chosen by the Contractor and submitted and approved by the Engineer prior to hydraulic seeding."

3.7 APPLICATION

Hydraulic seeding shall be applied as a liquid slurry using a hydraulic application machine (i.e. hydroseeder). Follow manufacturer's recommendations for mulch and stabilizing emulsion, to achieve complete coverage of target areas specified on project plans.

3.8 TIMING

Do not perform hydraulic seeding immediately before, during, or after a rainfall. Allow at least 24 hours before or after rainfall to apply hydraulic seeding.

PART 4: MEASUREMENT AND PAYMENT

4.1 GENERAL

Add the following paragraph:

"C. This item shall be measured and paid for by the Lump Sum basis as indicated on the proposal. The square yard quantity was calculated off the disturbed construction limits area indicated on the plans, including the topsoil wasting areas as indicated on sheet 4.13 (these areas will require seeding). The quantity listed in the bid form shall be final. However, if an entire area as indicated on the topsoil wasting area plan sheet, 4.13, is not used, this area will be reduced from the final pay quantity. The quantity listed does not include any potential disturbed areas outside the grading limits, including but not limited to, staging areas, access corridors, construction entrances, haul roads, erosion controls, and soil stockpiles which the contractor shall be required to seed. Payment shall include full compensation for all labor, equipment, materials, and incidentals required for completing the work in conformance with the plans and specifications. Payment shall include allowance for topsoil placement and seed bed preparation."

END OF SECTION 02920

SECTION 03000
DIVISION 3 – CONCRETE

This contract will be constructed and administered under the requirements of the Montana Public Works Standard Specifications (MPWSS), Seventh Edition, April 2021, 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

3.4 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