LOW ACTIVITY WASTE PRETREATMENT SYSTEM

Project No. 31269 (T5L01)

Document No. 12-2-003
CSI Section 31 25 00

Safety Related ☐  Non-Safety Related ☒

SOIL EROSION AND SEDIMENTATION CONTROL SPECIFICATION

Prepared for
Washington River Protection Solutions, LLC

Revision: B  Status: Preliminary
**Project Name:** LAWPS  
**Discipline:** Civil

**Client:** Washington River Protection Solutions  
**Project Number:** 31269 (T5L01)

**Latest Revision:** B

---

### REVISION SIGNATURES

<table>
<thead>
<tr>
<th>Prepared by</th>
<th>Date</th>
<th>Approved by (SDE/Lead)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Cloud</td>
<td>06/05/17</td>
<td>Matt Morgan</td>
<td>06/05/17</td>
</tr>
<tr>
<td>Matt Morgan</td>
<td>06/05/17</td>
<td>Paul Bell</td>
<td>06/05/17</td>
</tr>
<tr>
<td>Checked by</td>
<td>Date</td>
<td>Approved by (QA)</td>
<td>Date</td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td>Dan Priebe</td>
<td>06/05/17</td>
</tr>
</tbody>
</table>

### Status

<table>
<thead>
<tr>
<th>Status</th>
<th>Rev. No.</th>
<th>Date</th>
<th>Prepared By</th>
<th>Pages</th>
<th>Description of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary A</td>
<td>01/23/17</td>
<td>MTC</td>
<td>14</td>
<td></td>
<td>Issued for 60% Design Review</td>
</tr>
<tr>
<td>Preliminary B</td>
<td>06/05/17</td>
<td>MTC</td>
<td>9</td>
<td></td>
<td>60% Comments Incorporated</td>
</tr>
</tbody>
</table>

### Safety Related:

- Yes [ ]  
- No [x]

### Quality Level:

- Full QA [ ]  
- Enhanced QA [ ]  
- Commercial QA [x]
TABLE OF CONTENTS

1.0 PART 1 - GENERAL .............................................................................................................. 1
1.1 Section Scope ..................................................................................................................... 1
1.2 Related Sections ................................................................................................................. 1
1.3 Codes and Standards ......................................................................................................... 1
1.4 System Description (Not Used) ....................................................................................... 2
1.5 Submittals ......................................................................................................................... 2
1.6 Delivery, Storage & Handling ......................................................................................... 3
1.7 Quality Assurance .......................................................................................................... 3
1.8 Site Conditions ............................................................................................................... 4

2.0 PART 2 - PRODUCTS ......................................................................................................... 5
2.1 Manufactures (Not Used) ............................................................................................... 5
2.2 Materials ......................................................................................................................... 5
2.3 Equipment (Not Used) .................................................................................................... 6
2.4 Components (Not Used) ................................................................................................ 6
2.5 Fabrication (Not Used) .................................................................................................... 6
2.6 Shop Quality Control (Not Used) .................................................................................. 6

3.0 PART 3 - EXECUTION ..................................................................................................... 7
3.1 Preparation (Not Used) ................................................................................................... 7
3.2 Erection, Installation and Application ............................................................................ 7
3.3 Field Quality Control (Not Used) .................................................................................. 8
3.4 Adjusting and Cleaning .................................................................................................. 8
3.5 Demonstration (Not Used) ............................................................................................ 8
3.6 Protection (Not Used) .................................................................................................... 8

4.0 PART 4 – LIST OF APPENDICIES (NOT USED).............................................................. 9
LIST OF TERMS

Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM</td>
<td>American Society for Testing and Materials</td>
</tr>
<tr>
<td>LAWPS</td>
<td>Low Activity Waste Pretreatment System</td>
</tr>
<tr>
<td>NCR</td>
<td>Nonconformance Report</td>
</tr>
<tr>
<td>QA</td>
<td>Quality Assurance</td>
</tr>
<tr>
<td>RFI</td>
<td>Request for Information</td>
</tr>
<tr>
<td>SSC</td>
<td>Systems, Structures, and Components</td>
</tr>
<tr>
<td>WSDOT</td>
<td>Washington State Department of Transportation</td>
</tr>
</tbody>
</table>

Units

U. S. Customary

Definitions

BUYER – The Company for whom the VENDOR is performing work or services.

COMMERCIAL QUALITY ASSURANCE (CQA) – Level of controls for those items, services, or processes where, based on an evaluation of risk or nuclear safety, no additional quality controls beyond the provider’s published or stated attributes of the item, service, or process is required.

ENHANCED QUALITY ASSURANCE (EQA) – Level of controls for those items, services, or processes where, based on an evaluation of risk or nuclear safety, additional controls beyond the provider’s published or stated attributes of the item, service, or process are needed to verify critical attributes.

FULL QUALITY ASSURANCE (FQA) – Level of controls applied for items, services, or processes that are commensurate with the controls invoked under ASME NQA-1 or other appropriate national consensus standards.

HOLD POINT- A mandatory inspection activity beyond which work shall not proceed until (1) the inspection is performed by an independent inspector and/or BUYER acceptance is authenticated, or (2) a written release is authorized by the organization who established the hold point.

MORE CONSERVATIVE – “More conservative” shall be interpreted as “more protective of the health, safety and well-being of Site workers and facilities, the public, and environment, as applicable.”

PROCUREMENT QUALITY CLAUSE (QA CLAUSES) – Procurement quality clauses are to be used for the acquisition of items and services. The clauses establish contractual obligations for quality program systems, identification, traceability, documents submittals, testing, reporting, qualifications, special process controls, inspections, etc.
PRODUCT DATA – Printed information including, but not limited to, catalog cuts, color charts, illustrations, diagrams, templates, performance curves, brochures, and other forms of Product literature.

SHALL / MUST – Denotes project requirements, compliance is required.

SHOULD – Denotes recommendation or expectation, compliance is expected.

SPECIFICATION – Refers to any design, fabrication or supply specification.

SUBSTITUTION – Any change or deviation from issued approved drawings, designs, methods, or contract terms and conditions.

VENDOR – The Company responsible for the supply of equipment or services.
1.0 PART 1 - GENERAL

1.1 Section Scope

1.1.1 This Specification covers the product and construction requirements for the Erosion and Sediment Control work for the Low Activity Waste Pretreatment System (LAWPS) Project. Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement shall be followed. This includes complying with and implementing the applicable requirements of the State Waste Discharge Permit ST00004511. Construction plans will detail erosion and sediment control measures to be employed during the construction process.

1.1.2 The overall work included consists of the following: planning construction activities, installing erosion control devices, and instituting erosion control practices during construction activities on the site. The more specific work includes, but is not limited to, the following: furnishing and installing straw bale dikes; earth dikes; silt fences; stabilized construction entrances; and temporary and permanent seeding to include topsoiling, and mulching, and furnishing and placing erosion control and revegetation matting.

1.2 Related Sections

| 01 25 00 | Substitutions and Design Changes |
| 01 33 00 | Submittals |
| 01 40 00 | Quality Assurance |
| 01 66 00 | Delivery, Storage and Handling |
| 02 21 00 | Surveying Specification |
| 01 89 13 | Substitutions and Design Changes |
| 31 23 00 | Excavating, Backfilling And Compacting For Structures Specification |
| 31 23 00 | Excavating, Backfilling And Compacting For Underground Utilities Specification |

1.3 Codes and Standards

1.3.1 Work shall be performed in accordance with the referenced codes, standards, and documents for this specification.

1.3.2 The following codes and standards, of the exact issue shown, form a part of the Buyer basis of design to the extent specified in the applicable sections of this document. In the event of a conflict between documents referenced herein and the requirements of this specification, the requirements of this specification shall take precedence only when this specification's requirements are more stringent or conservative. If a code or standard not listed below is to be applied to the scope (see Section 1.1), apply the latest Code as of April 16, 2015.
1.3.2.1 American Society for Testing and Materials (ASTM)

- ASTM D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lb/ft³ (2,700 kN·m/m³))
- ASTM D3786, Standard Test Method for Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method
- ASTM D4355, Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Type Apparatus
- ASTM D4491, Standard Test Methods for Water Permeability of Geotextiles by Permittivity

1.3.2.2 Washington State Department of Transportation (WSDOT)

- Manual M3109.1, Temporary Erosion and Sediment Control

1.3.2.3 Washington State Department of Ecology


1.3.3 Should a conflict be found to exist between any applicable portion of the referenced codes and standards and this Specification, the conflict shall be submitted to the BUYER for resolution before proceeding with the affected work.

1.4 System Description (Not Used)

1.5 Submittals

1.5.1 Submittals that are listed within this section shall be prepared and processed in accordance with requirements of CSI Section 01 33 00 Submittals and shall include all of the required Quality Assurance documentation in accordance with CSI Section 01 40 00 Quality Assurance.

1.5.1.1 The VENDOR shall submit a Technical Proposal Package consisting of the following:

- Quality Assurance Program Manual
- Work plan
- Project schedule

1.5.1.2 Technical Submittals:

- Requests for Information (RFI) shall be submitted on form A-6003-417 provided by the BUYER.

- If any nonconformances are encountered during survey activities, a Nonconformance Report (NCR) shall be submitted to the BUYER in accordance with QA Clause B22.

- Certificates of Conformance for materials used as specified in Section 2.2, in accordance with QA Clause B79.

1.6 Delivery, Storage & Handling

1.6.1 Refer to related CSI Section 01 66 00 Delivery, Storage and Handling for delivery storage and handling related requirements.

1.7 Quality Assurance

1.7.1 Refer to CSI Section 01 40 00 Quality Assurance for quality related requirements.

1.7.2 Applicable QA Clauses are summarized in the table below. The full QA Clause definition and associated requirements are located in CSI Section 01 40 00 Quality Assurance.

<table>
<thead>
<tr>
<th>Table 1.7-1 Procurement Quality Clauses</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPPLIER FABRICATION</td>
</tr>
<tr>
<td>B22 Nonconformance Documentation and Reporting</td>
</tr>
<tr>
<td>INSPECTION AND ACCEPTANCE CRITERIA</td>
</tr>
<tr>
<td>B79 Certificate of Conformance</td>
</tr>
</tbody>
</table>

1.7.3 The following verification points required by this section shall be in accordance with CSI Section 01 40 00 Quality Assurance, verified by the BUYER, as applicable. At a minimum, the following hold points shall apply:

<table>
<thead>
<tr>
<th>Table 1.7-2 Hold Point Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verification Point Description</td>
</tr>
<tr>
<td>Prior to Initiating Field Activities</td>
</tr>
<tr>
<td>(H) Hold</td>
</tr>
</tbody>
</table>

1.7.4 The VENDOR shall provide required notifications of verification points in accordance with CSI Section 01 40 00 Quality Assurance as applicable, and shall not proceed past required hold points without written authorization from the BUYER.
1.8 Site Conditions

1.8.1 In-situ site soils are described in the LAWPS Geotechnical Investigation Report (TBD).

1.8.2 The LAWPS site design conditions are as follows:

- Outdoor Temperature: -25°F to 115°F
- Outdoor Relative Humidity: 0 – 100%
- Barometric Pressure: 14.35 psia (measured at a meteorological tower 733 feet above sea level)

1.8.3 Site investigation information provided is not a warranty of subsurface conditions and may not reflect subsurface conditions over the entire proposed construction area. The VENDOR shall be responsible for its interpretations and use of the information. The following shall be verified and reported properly by the VENDOR:

- Underground Water Conditions: Report to BUYER or its designated representative any such condition encountered.

- Existing Utilities: Do not interrupt utilities serving facilities occupied by BUYER or others unless permitted in writing by BUYER or its designated representative and then only after arranging to provide temporary utility services according to requirements indicated.
2.0 PART 2 - PRODUCTS

2.1 Manufactures (Not Used)

2.2 Materials

2.2.1 Protective Bales

2.2.1.1 Protective bales shall be hay or straw or other material determined to be acceptable by the BUYER or its designated representative containing approximately five (5) cubic feet of material, and weighing not less than 35 pounds.

2.2.1.2 Bales shall be twine-tied.

2.2.2 Earth Dike

2.2.2.1 All materials used as embankment for earth dikes shall be suitable for the intended use and classified as common fill which meets the requirements of the Geotechnical Investigation Report and CSI Section 31 00 00 Site Preparation.

2.2.2.2 The BUYER will approve material from Project site excavations.

2.2.2.3 Off-site materials will be approved by the BUYER.

2.2.3 Silt Fence

2.2.3.1 Silt Fence Fabric: The manufacturer shall provide written certification that the fabric shall meet the following specifications, unless otherwise approved:

<table>
<thead>
<tr>
<th>Table 2.2-1 Silt Fence Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabric Properties</td>
</tr>
<tr>
<td>Grab Tensile Strength (lbs)</td>
</tr>
<tr>
<td>Elongation at Failure (%)</td>
</tr>
<tr>
<td>Mullen Burst Strength (PSI)</td>
</tr>
<tr>
<td>Puncture Strength (lbs)</td>
</tr>
<tr>
<td>Permittivity (Sec⁻¹)</td>
</tr>
<tr>
<td>Apparent Opening Size</td>
</tr>
<tr>
<td>Ultraviolet Radiation Stability (%)</td>
</tr>
</tbody>
</table>

2.2.3.2 Fence Posts (for fabricated units): The length shall be a minimum of 48 inches long. Wood posts will be of sound quality hardwood with minimum cross section dimensions of 1½ by 1½ inches. Steel posts will be standard T and U section weighing not less than one (1) pound per linear foot.

2.2.3.3 Wire Fence (for fabricated units): Wire fencing shall be a minimum 14-1/4 gage with a
maximum six (6) inches mesh opening or as approved. The manufacturer shall provide written certification of compliance to the specification.

2.2.3.4 Prefabricated Units: Mirafi Envirofence or preapproved equal by the BUYER may be used in lieu of the above method providing the unit is installed per manufacturer’s instructions and is preapproved by the BUYER.

2.2.4 Stabilized Construction Entrance

2.2.4.1 Filter Cloth: The filter cloth shall be a woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The manufacturer shall provide written certification that the fabric shall be inert to commonly encountered chemicals, hydro-carbons, mildew, rot resistant, and conform to the properties of the following table:

<table>
<thead>
<tr>
<th>Fabric Properties</th>
<th>Light Duty Roads</th>
<th>Heavy Duty Haul Roads</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grab Tensile Strength (lbs)</td>
<td>200</td>
<td>220</td>
<td>ASTM D 4632</td>
</tr>
<tr>
<td>Elongation at Failure (%)</td>
<td>50</td>
<td>60</td>
<td>ASTM D 4632</td>
</tr>
<tr>
<td>Mullen Burst Strength (psi)</td>
<td>190</td>
<td>430</td>
<td>ASTM D 3786</td>
</tr>
<tr>
<td>Puncture Strength (lbs)</td>
<td>40</td>
<td>125</td>
<td>ASTM D 4833</td>
</tr>
<tr>
<td>Equivalent Opening Size</td>
<td>40-80</td>
<td>40-80</td>
<td>US Std Sieve</td>
</tr>
<tr>
<td>Aggregate Depth (in)</td>
<td>6</td>
<td>10</td>
<td>ASTM 4751</td>
</tr>
</tbody>
</table>

2.2.4.2 Aggregate shall be crushed stone or reclaimed/recycled concrete meeting the requirements of WSDOT Manual M41-10, Section 9-03.9(2).

2.2.5 Aggregate

2.2.5.1 Aggregate for plant surfacing shall be crushed stone or gravel in accordance with Division 9 Materials Section 9.03 of WSDOT Manual M 41-10.

2.3 Equipment (Not Used)

2.4 Components (Not Used)

2.5 Fabrication (Not Used)

2.6 Shop Quality Control (Not Used)
3.0 PART 3 - EXECUTION

3.1 Preparation (Not Used)

3.2 Erection, Installation and Application

3.2.1 Erosion Bales

3.2.1.1 Install protective bales as sediment barrier at the locations shown and as detailed on the Drawings.

3.2.2 Earth Dikes

3.2.2.1 Install earth dikes at the locations shown and as detailed on the Drawings.

3.2.2.2 All embankment materials for earth dikes shall be compacted to 90% of maximum dry density per ASTM D 1557 and supported by compaction test reports.

3.2.3 Silt Fences

3.2.3.1 Install silt fences at the locations shown and as detailed on the Drawings.

3.2.4 Stabilized Construction Entrances: Construct stabilized construction entrances at the beginning of earthwork operations at the locations shown and as detailed on the Drawings.

3.2.4.1 Aggregate Thickness - Not less than six (6) inches for light duty entrances, and not less than ten (10) inches for heavy duty entrances.

3.2.4.2 Width - 20 foot minimum but not less than the full width of points where ingress or egress occurs.

3.2.4.3 Length - As required, but not less than 50 feet.

3.2.4.4 Filter cloth - To be placed over the entire area to be covered with aggregate.

3.2.4.5 Piping of surface water under entrance shall be provided as required. The mounding of material to maintain minimum pipe cover is permitted.

3.2.4.6 The entrance shall be maintained through the duration of this Contract in a condition that will prevent tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way must be removed immediately.

3.2.4.7 When necessary, tires must be cleaned to remove sediment prior to entrance onto public rights-of-way.

- When washing is required, it shall be done on an area stabilized with aggregate that drains into an approved sediment trapping device.

- All sediment shall be prevented from entering storm drains, ditches, or watercourses.
3.2.5 Aggregate

3.2.5.1 Aggregate shall be used for temporary and final surface stabilization on surfaces not receiving other treatment.

3.2.5.2 Place aggregate to the location and depth shown on the drawings.

3.3 Field Quality Control (Not Used)

3.4 Adjusting and Cleaning

3.4.1 At completion of Work, clean premises of all rubbish, refuse and debris, leaving premises in a clean and orderly condition.

3.5 Demonstration (Not Used)

3.6 Protection (Not Used)
4.0 PART 4 – LIST OF APPENDICIES (NOT USED)