

ADDENDUM NO. 2  
to the  
BIDDING DOCUMENTS

for the

TETON COUNTY LANDFILL  
WASTE RELOCATION AND EARTHWORKS PROJECT

by

TETON COUNTY  
Integrated Solid Waste and Recycling  
PO Box 9088  
Jackson, WY 83002

ADDENDUM DATE: April 5, 2016

This Addendum forms a part of the Bid described above. The original Bidding Documents remain in full force and effect except as modified by the following which shall take precedence over any contrary provisions in the prior documents.

Each Bidder shall acknowledge receipt of this Addendum by affixing their signature below, by noting this Addendum on the Bid Form, and by attaching this Addendum cover sheet to the Bid.

APPROVED: (GOLDER ASSOCIATES, INC.)

  
\_\_\_\_\_  
Name: Jeff Rusch, P.E.  
Title: Senior Project Engineer

ACKNOWLEDGMENT OF RECEIPT OF ADDENDUM (BIDDER)

\_\_\_\_\_  
Firm

\_\_\_\_\_  
By: Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date Received



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ADDENDUM DATE: April 5, 2016

This Addendum is hereby made a part of the Bidding Documents for the above titled project, to the same extent as though it were originally contained therein.

The Bidding Documents for the above referenced project dated March 2016 and subsequent addenda are hereby amended as follows:

Bid Submittal Clarification

1. As stated in the Pre-Bid Meeting Agenda (March 31, 2016), Bids shall be delivered to the following address:

Teton County Engineering  
320 South King Street  
Jackson, WY, 83002

There is no United States Postal Service (USPS) mail service to 320 S. King Street. Bids should be delivered by UPS, FedEx, or hand delivered only.

EJCDC C-520, Agreement (page 2 only)

1. Article 4.03 is modified to eliminate bonus clause.

EJCDC C-700, General Conditions (page 30 only)

1. Article 7.02(B) is modified to clarify allowable working hours.

Section 01 11 00 – Summary of Work

1. Article 1.4(C) is modified to include Owner's requirements for the sequencing of the waste excavation work.

2. Articles 1.4(D) and 1.5(A) are modified to clarify that Contractor shall furnish all water and water storage equipment/tanks required for performance of the Work; no source of waste is available on-site for Contractor's use.

#### Section 01 14 00 – Work Restrictions

1. Article 1.4(B) is modified to clarify that regular working hours are Monday through Friday, 8am through 6pm and Saturdays 8am through 12pm. No work will be permitted outside of regular working hours or on Sundays unless otherwise approved by Owner.

#### Section 01 22 13 – Measurement and Payment

1. Description of Bid Item 4 – Force Account is modified to provide additional description of Force Account work and requirements for Owner approval prior to performance of work.

#### Section 01 71 23 – Surveying

1. Article 1.1(D) is modified to clarify that all surveys shall be conducted under the direct supervision of a Wyoming Registered Land Surveyor and sealed.

#### Section 01 74 16 – Waste Management and Disposal

1. Article 3.2(I) is modified to clarify waste excavation requirements within the limits of the permanent 4H:1V slope shown in Contract Drawing 3.
2. Article 3.5(D) is modified to clarify that upon discovery of a special waste or hazardous waste, subsequent handling, characterization, management, and disposal will be paid through the Force Account.

#### Section 32 91 16 – Planting Soil Stabilization

1. Subparts 2.1 and 3.3 are modified to include commercial soil nutrient and organic fertilizer products as an allowable substitution to composting.

\*\*\*END OF ADDENDUM\*\*\*

**AGREEMENT  
BETWEEN OWNER AND CONTRACTOR FOR  
CONSTRUCTION CONTRACT (STIPULATED PRICE)  
TETON COUNTY LANDFILL  
WASTE RELOCATION AND EARTHWORKS PROJECT**

Prepared by



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#### 4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
- B. Substantial Completion: Contractor shall pay Owner \$500.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
- C. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$500.00 for each day that expires after such time until the Work is completed and ready for final payment.
- D. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.
- ~~E. *Bonus*: Contractor and Owner further recognize the Owner will realize financial and other benefits if the Work is completed prior to the time specified for Substantial Completion. Accordingly, Owner and Contractor agree that as a bonus for early completion, Owner shall pay Contractor \$500.00 for each day prior to the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract) that the Work is substantially complete. The maximum value of the bonus shall be limited to \$15,000.00.~~

#### 4.04 *Special Damages*

- ~~A. *In addition to the amount provided for liquidated damages,* Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.~~
- B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

### ARTICLE 5 – CONTRACT PRICE

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

**STANDARD GENERAL CONDITIONS  
OF THE CONSTRUCTION CONTRACT**  
**TETON COUNTY LANDFILL**  
**WASTE RELOCATION AND EARTHWORKS PROJECT**

Prepared by



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## 7.02 Labor; Working Hours

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor ~~will not~~ may perform Work on ~~a~~ Saturdays within limited working hours. Contractor may not perform Work on Sundays, or any legal holiday. Contractor may perform Work outside regular working hours ~~or on Saturdays, Sundays, or legal holidays~~ only with Owner's written consent, ~~which will not be unreasonably withheld~~.

## 7.03 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

## 7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that:
      - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

SECTION 01 11 00  
SUMMARY OF WORK

PART 1 – GENERAL

1.1 SUMMARY

- A. The Work specified in this Contract consists of furnishing all management, supervision, labor, materials, tools, equipment, services, testing and incidentals for the completion of the Work as indicated in the Contract Documents.
- B. Wherever used in the Bidding Requirements or Contract Documents, a term printed with capital letters, including the term's singular and plural forms, will have the meaning indicated in Article 1 of the Agreement (EJCDC C-700).
- C. The information presented in the Bidding Documents illustrates the best information available. Existing field conditions shall be field verified prior to performance of the Work.
- D. Related Sections
  - 1. Section 01 14 00 – Work Restrictions
  - 2. Section 01 31 13 – Project Coordination
  - 3. Section 01 35 29 – Health, Safety, and Emergency Response Procedures

1.2 PROJECT INFORMATION

- A. Project Name: Teton County ~~Transfer Station~~Landfill Waste Relocation and Earthworks Project
- B. ENGINEER's Project No.: 123-81604A
- C. Project Site: Teton County Landfill and Transfer Station  
5400 W. US Route 26 / Route 89 / Route 189 / Route 191  
Jackson, Wyoming 83001
- D. OWNER: Teton County Integrated Solid Waste and Recycling (Teton County)
- E. ENGINEER: Golder Associates, Inc.
- F. OWNER's REPRESENTATIVE: Peak GeoSolutions
- G. Project will be constructed under a single prime contract.

1.3 DESCRIPTION OF WORK

- A. The Work to be performed under this contract consists of completing the waste excavation and relocation work and developing the final design grades as shown in the Contract Drawings. The Work includes, but is not limited to, the following construction activities:

1. Mobilization and demobilization of all equipment, material, and labor required to complete the Work
2. Coordination with OWNER, Site Operator, and other Site contractors on work areas and construction sequencing
3. Maintaining full-time survey control on Site
4. Providing dust control as necessary or as directed by OWNER's REPRESENTATIVE
5. Installation, maintenance, repair, and replacement of temporary erosion control measures throughout the work
6. Stripping and temporary stockpiling of topsoil
7. Excavation, hauling up canyon, placement, and covering of historical buried municipal solid waste (MSW) and clean soil
8. Backfilling waste excavations below final design grades with on-site glass material and/or clean fill material from Site excavation
9. General Site development and grading to develop final design grades
10. Construction of temporary and permanent haul and access roads
11. Excavation, hauling, and stockpiling of clean fill material from Site borrow area (if necessary)
12. Improvements and maintenance of temporary haul road to Site borrow area (if necessary)
13. Construction of temporary and permanent surface water control features, including stormwater channels, concrete stormwater chutes, drainage culverts with flared end sections, and precast surface water inlet structures
14. Procurement and placement of road base material, asphalt millings (if available), geotextile fabric, and riprap
15. Site restoration, including placement of stockpiled topsoil, seeding/mulching/fertilizing, and placement of temporary erosion control fabric

B. CONTRACTOR responsibilities as required by the Contract Documents include the following:

1. Be solely responsible for all means, methods, techniques, sequences, and procedures of construction, including any necessary construction staking and testing described in the Contract Documents and Specifications.
2. Except as specifically noted, furnish all supervision, labor, materials, tools, supplies, machinery and equipment necessary for completion of the Work as described in the Contract Documents, Contract Drawings and Specifications.
3. Obtain and pay for permits, inspection certificates, governmental fees and licenses required for the Work as necessary for proper performance and completion of the Work, as applicable at time of receipt of bid.
4. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities that bear on performance of the Work.
5. Give required notices in writing with copies to OWNER.
6. Furnish a competent and adequate staff, as necessary for the proper administration, coordination, supervision, and superintendence of the Work; organize the procurement of all materials and equipment so that they will be available at the time they are needed for the Work; and keep an adequate force of skilled workmen on the job to complete the Work in

the best and soundest manner in accordance with the requirements of the Contract Documents and in the most expeditious and economical manner consistent with the interests of the OWNER.

7. Furnish any and all health and safety related items (including a Health & Safety Plan) that may be required in Section 01 35 29 – Health, Safety, and Emergency Response Procedures.
8. Coordinate with OWNER and Site tenant so as to minimize inconvenience and conflict with overall existing Transfer Station and composting operations and to facilitate on-going usage of Site by OWNER.
9. Attend weekly progress meetings at the Site in accordance with Section 01 31 13 – Project Coordination.
10. Review the Site, including existing conditions, existing geotechnical information, and any issues as they pertain to the Project. Field check the existing areas, as required, for accurate construction.
11. Provide containment and disposal of all crating and packaging materials, and remove all debris from the project area and dispose of in a legal manner.
12. Provide any necessary transportation of all CONTRACTOR's construction personnel.
13. Receive, unload, handle, re-handle and store all materials and equipment to be furnished under this Contract.
14. Take all necessary precautions not to interfere with Site operations. Coordination will be necessary between Site operations and CONTRACTOR in order to enable the CONTRACTOR to have access to various portions of the Site to complete the Work. An OWNER's REPRESENTATIVE will be assigned to perform liaison duties between the CONTRACTOR and facility operations.
15. Provide portable toilet facilities for use by CONTRACTOR personnel in a location to be designated by the OWNER.
16. Notify the OWNER by the end of the work day of all accidents and submit a written report to the OWNER's representative giving full details and statements of witnesses, within 24 hours of the accident. In addition, if death, serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to the OWNER.
17. Render all necessary assistance and equipment to the OWNER for inspection of the Work. The CONTRACTOR shall provide sufficient, safe and proper facilities at all times for the inspection of the Work by the OWNER. The CONTRACTOR shall provide sufficient advance notice for the OWNER to inspect any portion of the Work.
18. Remove any defective work found to exist, whether the result of poor workmanship, use of defective materials, or damage through the CONTRACTOR's carelessness, and immediately replace with work and materials which conform to the Specifications, or remedy in a manner authorized by the OWNER at the CONTRACTOR's expense.
19. The title of all materials found or removed from existing structures or on the Site remains with the OWNER. The CONTRACTOR shall make such disposition of said materials as directed by the OWNER.
20. Provide all necessary electrical power and fuel for construction and installation as necessary.

21. Obtain and carefully study (or assume responsibility for obtaining and studying) all such examinations, investigations, explorations, tests, reports and studies which pertain to the subsurface or physical conditions at or contiguous to the Site or otherwise may affect the cost, progress, performance, or furnishing of the Work at the Contract Price, within the Contract Time.
22. The CONTRACTOR must give the ENGINEER and OWNER's REPRESENTATIVE written notice of all conflicts, errors or discrepancies that the CONTRACTOR discovers in the Contract Documents and the written response thereof by the ENGINEER and/or OWNER's REPRESENTATIVE is acceptable to the CONTRACTOR.
23. Submit a detailed schedule for construction within 10 days of Notice of Award to OWNER's REPRESENTATIVE and ENGINEER.

#### 1.4 CONTRACTOR'S USE OF SITE

- A. CONTRACTOR will only have limited access to the Site as described in Section 01 14 00 – Work Restrictions.
- B. CONTRACTOR shall limit use of the Site to the designated areas shown in the Contract Drawings and agreed to with the OWNER. Do not disturb portions of the Site beyond the areas in which the Work is located.
- C. CONTRACTOR shall submit a Project Sequencing Narrative and/or Schedule as part of their Bid summarizing their approach to the sequencing of the waste excavations to ensure that the Site is able to maintain continuous scale house, Transfer Station, composting, and waste diversion operations throughout the duration of the Contract.
  1. CONTRACTOR shall complete the waste excavation of the lower waste management pad area prior to proceeding further up canyon. The pad area shall be graded to final design grades, the precast surface water inlet and 18-inch drainage culvert installed, and the pad surfaced with road base. The pad area will be occupied by the OWNER for active Site operations once it has been completed and approved by OWNER or OWNER's REPRESENTATIVE. The perimeter stormwater channel may be constructed later in the project to allow the temporary haul road to remain in place throughout the duration of the Work.
- D. CONTRACTOR shall furnish all water and water storage equipment/tanks required for performance of the Work; no source of water is available on-site for CONTRACTOR's use.

#### 1.5 OWNER RESPONSIBILITIES

- A. OWNER responsibilities:
  1. OWNER will arrange for and deliver necessary electronic versions of Contract Drawings to CONTRACTOR for information and coordination of the Work and for installation.
  2. OWNER will furnish the data required of OWNER under the Contract Documents.

3. OWNER will provide construction quality assurance (CQA) monitoring to observe and record construction and provide oversight on field density testing and density obtained using method techniques performed by CONTRACTOR.
4. The OWNER will not supervise, direct or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the work. OWNER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.
5. ~~OWNER will furnish water for construction from an on-site water source.~~
6. OWNER will dispose of wastes normally generated by construction (excluding excavation waste) at its Transfer Station as delivered by CONTRACTOR.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

\*\*\*END OF SECTION\*\*\*

## SECTION 01 14 00

### WORK RESTRICTIONS

#### PART 1 – GENERAL

##### 1.1 DESCRIPTION

- A. Section includes: Contractor's access and use of the Site during the performance of the Work.
- B. Related sections:
  - 1. Section 01 31 13 – Project Coordination

##### 1.2 SUBMITTALS

- A. Refer to the Article 7 of the General Conditions (EJCDC C-700) for submittal procedures.
- B. CONTRACTOR shall submit a Project Sequencing Narrative and/or Schedule as part of their Bid summarizing their approach to the sequencing of the waste excavations to ensure that the Site is able to maintain continuous scale house, Transfer Station, composting, and waste diversion operations throughout the duration of the Contract.

##### 1.3 ACCESS TO SITE

- A. CONTRACTOR personnel and vehicles, which are necessary for completion of the Work, will be provided access to the Site.
- B. The CONTRACTOR shall provide the OWNER with a list of persons he/she wishes to enter upon the OWNER's premises. This list shall be kept up to date at all times and any changes, deletions, or additions may only be made by the CONTRACTOR or his designated representative.

##### 1.4 USE OF PREMISES

- A. The Work will be completed at an operational Transfer Station and composting facility. The Teton County Transfer Station receives waste six days per week (Monday through Saturday), and will maintain continuous scale house, Transfer Station, composting, and waste diversion operations during the duration of the Contract.
- B. Regular working hours are Monday through Friday, 8am through 6pm, and Saturdays 8am through 12pm. No work will be permitted outside of regular working hours or on Sundays unless otherwise approved by OWNER.
- C. The Work under this Contract requires special attention to the scheduling and conduct of the work in connection with existing operations. The CONTRACTOR

shall verify project conditions and coordination requirements prior to submission of their Bid.

- C. The CONTRACTOR will have limited use of the Site for execution of the Work, and shall confine operations at the Site to the area(s) identified in the Contract Drawings. CONTRACTOR shall limit use of premises to construction activities and allow for use, occupancy and operations of OWNER, Site Operator, and other Site contractors. Do not encumber the Site with products and construction equipment. CONTRACTOR shall not use any Site facilities without prior OWNER consent.
- D. Operations: Conduct operations so as to minimize inconvenience and conflict with overall existing Transfer Station, composting, and waste diversion operations and to facilitate ongoing usage of Site by OWNER.
  - 1. Confine operations to specific Work areas within the Contract limits. Portions of the Site beyond the specific Work areas are not to be disturbed until approval by OWNER.
  - 2. Conduct operations to ensure no unreasonable inconvenience or unsafe or unhealthy condition to OWNER and general public.
  - 3. Existing utility facilities and services shall remain in uninterrupted service, except as otherwise required.
  - 4. Existing groundwater monitoring wells and landfill gas probes shall be protected and not disturbed. If CONTRACTOR damages wells or probes, he shall replace the well or probe at no cost to the OWNER.
  - 5. Limit construction operations to methods and procedures which will not adversely affect the environment of the Site including, but not limited to, noise, dirt, mud dust, odors, air, water or soil pollution, ambient discomfort, inadequate lighting, safety and health hazards, and other undesirable effects and conditions.
- E. Storage: OWNER will provide an on-site area for storage of products, materials, and equipment. The location of the storage area may change throughout the duration of the Work. CONTRACTOR shall assume full responsibility for material protection, safe-keeping, and relocation under this Contract.
  - 1. Relocation: Move any stored products which interfere with operations of the OWNER, Site Operator, or other Site contractors.
  - 2. Additional Space: Obtain and pay for use of additional off-site storage or work areas needed for operations as acceptable to OWNER, including any associated insurance, transportation, loading and unloading costs.

## 1.5 WORK COORDINATION

- A. The OWNER will provide an OWNER's representative to perform liaison duties between the CONTRACTOR and facility operations.
- B. Coordinate with OWNER and OWNER's representative so as to minimize inconvenience and conflict with overall existing Transfer Station, composting, and waste diversion operations and to facilitate ongoing usage of Site by OWNER.
- C. Attend weekly progress meetings at the Site in accordance with Section 01 31 13 – Project Coordination. CONTRACTOR shall be prepared to discuss Work

progress and future Work scheduling and forecasting for Site staging, sequencing, and availability of completed Work areas for OWNER occupation.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

\*\*\*END OF SECTION\*\*\*

## SECTION 01 22 13

### MEASUREMENT AND PAYMENT

#### PART 1 – GENERAL

##### 1.1 DESCRIPTION

- A. Section includes: administrative and procedural requirements applicable to progress and final payment of Lump Sums and Unit Price pay items established in the Agreement based upon the CONTRACTOR's Bid.
- B. Lump Sums and Unit Price pay items listed in this Section refer to and are the same pay items listed in the Bid Form (EJCDC C-410) and constitute all pay items for completing the Work in this Contract. Compensation for all services, items, materials, and equipment required to complete the Work shall be paid at the Lump Sums and Unit Prices included in the Contract.
- C. All measurements and payments will be based on completed Work performed in strict accordance with the Contract Documents and in accordance with Contract Lump Sums and Unit Prices. Incidental Work and items not listed in the Contract Bid Form will not be paid separately, but will be included in the payment for the listed item or items to which such incidental Work applies.
- D. Lump Sums and Unit Prices include all direct and indirect costs, including CONTRACTOR's overhead and profit for each separately identified item.
- E. The CONTRACTOR shall be responsible for providing all surveying required for the completion and measurement of the Work. No direct or separate payment will be made for survey control throughout the duration of the Work. Compensation for all surveying, including quantity measurement and record drawing as-builts, shall be considered incidental to the Work and shall be included in the CONTRACTOR's Lump Sums and Unit Prices included in the Contract.

##### 1.2 ENGINEER'S ESTIMATE OF QUANTITIES

- A. ENGINEER's estimated quantities for Unit Price pay items, as listed in the Bid Form, are approximate only and are included solely for the purpose of comparison of Bids. OWNER does not expressly or by implication agree that the actual quantities of material encountered or required will correspond therewith and reserves the right to increase or decrease any quantity or to eliminate any quantity, as OWNER may deem necessary. CONTRACTOR shall be entitled to adjustments in Unit Prices as a result of changes to an estimated quantity pursuant to Article 13.03 of the General Conditions (EJCDC C-700).
- B. Within 10 days after the Effective Date of the Contract, submit a preliminary Schedule of Values for all of the Work which includes quantities and Unit Prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments

during the performance of the Work. Provide a breakdown of Lump Sum items into proposed pay activities.

### 1.3 PAYMENT PROCEDURES

- A. Contract shall submit Applications for Payment in accordance with Article 15 of the General Conditions (EJCDC C-700).

### 1.4 LUMP SUM BID ITEMS

- A. Payment items for the Work of this Contract for which Contract Lump Sum payments will be made are listed in the Bid Form (EJCDC C-410). All costs for items of Work which are not specifically mentioned to be included in a particular Lump Sum or Unit Price payment item shall be included in the listed Lump Sum item most closely associated with the Work involved. The Lump Sum price and payment made for each item listed shall constitute full compensation for furnishing all labor, materials, and equipment, and performing any associated CONTRACTOR quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all Work required for which separate payment is not otherwise provided.
- B. Progress payments for Lump Sum payment items will be made in accordance with the pay activities listed in the Schedule of Values that breakdown each Lump Sum and on the basis of Work progress.

### 1.5 UNIT PRICE BID ITEMS

- A. Payment items for the Work of this Contract on which the Contract Unit Price payments will be made are listed in the Bid Form (EJCDC C-410). The Unit Price and payment made for each item listed shall constitute full compensation for furnishing all labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, survey control, meeting safety requirements, tests, and reports, and for performing all Work required for each of the Unit Price items.
- B. Each Unit Price payment item may be a single pay activity item or may be broken down into pay activities with smaller quantities equal to item total. Contract Unit Price multiplied by agreed quantity is full compensation.

### 1.6 BID ITEM DESCRIPTIONS

- A. Lump Sums: The Lump Sum Base Bid items shown below are consistent with the Lump Sum items in the Bid Form.

#### Item 1 – Mobilization/Demobilization

- 1. PAYMENT: Payment will be made for costs to mobilize and demobilize all labor, equipment, supplies, tools, field offices, parts, trailers, portable facilities, fuel tanks, sanitary facilities, and other incidents required to perform the Work, including but not limited to insurance and bonding, locating/verification of existing utilities, construction permits and fees, construction Stormwater Pollution Prevention Plan (SWPPP), dust control, installation and maintenance of temporary erosion control, site administration

- expenses, utilities to the job trailer including power, telephone, etc., and site cleanup to the satisfaction of the OWNER.
2. UNIT OF MEASURE: Lump Sum. Payment shall be made at the Lump Sum price, not to exceed 10% of the total Bid Price, at the rate of 50% of the Lump Sum with the first invoice and 50% following Substantial Completion of the Contract.
  3. MEASUREMENT: There shall be no measurement for payment.

Item 2 – Special Waste Storage and Handling Area

1. PAYMENT: Full compensation for all labor, materials, equipment, and incidentals associated with establishment, management, and maintenance of the temporary waste storage area as required by the Contract Documents, including but not limited to earthworks, furnishing HDPE geomembrane liner, providing overpack drums prior to excavation work, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE.
2. UNIT OF MEASURE: Lump Sum
3. MEASUREMENT: There shall be no measurement for payment.

Item 3 – Existing Surface Water Inlet Connection

1. PAYMENT: Full compensation for all labor, materials, equipment, and incidentals required to provide connection between culvert pipe and existing surface water drop inlet structure, including survey control, excavation to expose existing inlet structure wall, coring of the existing structure wall, connection and sealing culvert pipe with existing structure, backfill and compaction, general surface restoration, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE.
2. UNIT OF MEASURE: Lump Sum
3. MEASUREMENT: There shall be no measurement for payment.

Item 4 – Force Account

1. PAYMENT: Full compensation for unforeseen and minor items not addressed in the Contract Documents that will be paid as authorized by OWNER. Items proposed for Force Account shall be reviewed and authorized by OWNER prior to performance of the work. Proposed Force Account items not approved by OWNER shall not qualify for payment as Force Account work.
2. UNIT OF MEASURE: Depending on the nature of the work involved, Force Account work shall be priced on a lump sum, unit price, or time and materials basis.
3. MEASUREMENT: Methods of measurement shall be approved prior to performing the Force Account work. All approved Force Account work shall be documented with daily summaries of all labor hours and rates, equipment, material invoices and other appropriate information that will be reviewed and approved by the OWNER's REPRESENTATIVE and shall be provided to the OWNER's REPRESENTATIVE within five working days of the actual event. If the documentation is not provided within this time period, the OWNER may deny payment of the work

- B. Unit Prices: The Unit Price Base Bid items shown below are consistent with the Unit Price items in the Bid Form

Item 5 – Strip, Stockpile, and Re-apply Topsoil

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated with stripping and stockpiling topsoil from within the waste relocation area to the depths required by the Contract Documents and placing the topsoil as required by the Contract Documents or as directed by the OWNER's REPRESENTATIVE.
2. UNIT OF MEASURE: Cubic yardage of material stripped.
3. MEASUREMENT: The total quantity of stripped topsoil for which payment shall be made shall be computed by measurement in the haul vehicle or, If CONTRACTOR transports the material in vehicles not adapted for measurement, in its original position computed by field survey or computation by average end area method with no correction for curvature as approved by OWNER's REPRESENTATIVE.

Item 6 – Waste Excavation, Haul, Placement, and Cover

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated with excavation of waste materials, hauling up-canyon to waste relocation area, placement, and cover as required by the Contract Documents, including maintaining safe excavation and fill slopes, development and maintenance of temporary haul roads, development of stormwater channel grades, providing traffic control as necessary, maintaining full-time survey control, coordination with site operations, placement of daily cover and intermediate cover, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE. ~~In accordance with the General Conditions, payment will be made at the unit price corresponding to the measured quantity.~~
2. UNIT OF MEASURE: Cubic yardage of material excavated.
3. MEASUREMENT: The total quantity of waste excavation for which payment shall be made under this Bid Item shall be computed by measurement in the excavation through survey. The percentage of waste excavation to be paid under this Item versus clean soil excavation to be paid under Items 7 or 8 shall be agreed to between the CONTRACTOR and OWNER's REPRESENTATIVE at the time of excavation and/or measurement for each excavation area.

Item 7 – Clean Soil Excavation, Haul, Placement, and Compaction

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated with excavation of clean soil, hauling up-canyon to waste relocation area, and placement and compaction as required by the Contract Documents, including maintaining safe excavation and fill slopes, development and maintenance of temporary haul roads, development of stormwater channel grades, providing traffic control as necessary, maintaining full-time survey control, conformance with seasonal work area limitations, coordination with site operations, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE. ~~In accordance with the General Conditions, payment will be made at the unit price corresponding to the measured quantity.~~
2. UNIT OF MEASURE: Cubic yardage of material excavated.

3. MEASUREMENT: The total quantity of clean soil excavation for which payment shall be made under this Bid Item shall be computed by measurement in the excavation through survey. The percentage of clean soil excavation to be paid under this Item versus waste excavation to be paid under Item 6 shall be agreed to between the CONTRACTOR and OWNER's REPRESENTATIVE at the time of excavation and/or measurement for each excavation area.

Item ~~7X8~~ – Clean Soil Excavation, Stockpile, Backfill, and Compaction

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated with the excavation of clean soil, temporary stockpiling near the excavation area, backfilling, compacting, and grading clean soil in waste excavations to final design grades, and maintaining full-time survey control. CONTRACTOR will only be directed by ENGINEER or OWNER's REPRESENTATIVE to excavate, stockpile, and backfill clean soil under this Bid Item dependent on actual excavation quantities and fill progression in the waste relocation area under Bid Items 6 and 7.
2. UNIT OF MEASURE: Cubic yardage of material excavated.
3. MEASUREMENT: The total quantity of clean soil excavation for which payment shall be made under this Bid Item shall be computed by measurement in the excavation through survey. The percentage of clean soil excavation to be paid under this Bid Item shall be agreed to between the CONTRACTOR and OWNER's REPRESENTATIVE at the time of excavation and/or measurement for each excavation area.

Item 89 – Backfill with Existing Site Debris Stockpiles

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated with backfilling waste excavations below final design grades with existing debris stockpiles on-site, including hauling debris to waste excavation areas, mixing with clean fill as necessary, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE.
2. UNIT OF MEASURE: Cubic yardage of existing debris material backfilled.
3. MEASUREMENT: The total quantity of clean existing debris material for which payment shall be made shall be computed by field survey or field measurement of the existing debris stockpiles prior to backfilling performed by OWNER's REPRESENTATIVE.

Item 910 – Clean Soil Borrow Excavation, Haul, Backfill, Compact, and Grade

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated obtaining clean borrow soil from the on-site borrow area located on the southeast ridge of canyon, hauling, and backfilling, compacting, and grading clean borrow soil in waste excavations to final design grades, including development of stormwater channel design grades, maintenance of temporary access and haul road to the on-site borrow source, maintaining full-time survey control, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE.
2. UNIT OF MEASURE: Cubic yardage of clean borrow fill excavated.
3. MEASUREMENT: The total quantity of clean borrow soil material for which payment shall be made shall be computed by field survey of the borrow area prior to and after borrow operations.

Item 4011 – WYDOT Class W Road Base

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated the procurement, hauling, placement, and compaction of Class W road base material as required by the Contract Documents and as directed by the OWNER's REPRESENTATIVE.
2. UNIT OF MEASURE: ~~Square yardage~~Tons of Class W road base.
3. MEASUREMENT: The total quantity of Class W road base material for which payment shall be made shall be computed by ~~field survey or field measurement of the square yardage of area where~~truck weight tickets of "Class W" material ~~was installed~~delivered to the Site and installed in the areas shown in the Contract Drawings.

Item 4112 – Finish Grading of Stormwater Channels

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals required to finish grade the stormwater channels to within  $\pm 0.1$  feet of the design grades shown in the Contract Drawings, including survey control. The earthwork associated with the development of the stormwater channels will either be paid under Line Items 6, 7, ~~8~~ or ~~9~~10 depending on the presence of waste along the channel alignments.
2. UNIT OF MEASURE: Linear footage of channel finish graded.
3. MEASUREMENT: The total quantity of channel for which payment shall be made shall be determined by field survey or field measurement along the centerline of the channels.

Item 4213 – Precast Surface Water Inlet Structure

1. PAYMENT: Full compensation for all labor, materials, equipment, and incidentals required to furnish, haul, deliver, and install the surface water drop inlet structure and grating as required by the Contract Documents, including excavation, compaction, furnishing and installing bedding material, lifting and placement of structure, providing connection and sealing culvert pipe, backfilling, general surface restoration, survey control, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE.
2. UNIT OF MEASURE: Each
3. MEASUREMENT: There shall be no measurement for payment.

Item 4314 – Concrete Surface Water Channel

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated with the construction of the concrete surface water channel and dissipation structure as shown in the Contract Documents, including survey control, preparation of approved subgrade, concrete mix design and cylinder testing, furnishing and placing all formwork, reinforcement, and concrete, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE. Finish grading of the channel subgrade will be paid under Line Item ~~4~~12.
2. UNIT OF MEASURE: Cubic yardage of concrete.
3. MEASUREMENT: The total quantity of concrete for which payment shall be made shall be computed by the cubic yardage of concrete installed, as measured by field measurement.

Item 4415 – Drainage Culvert Pipe (18-inch CMP)

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated the construction of the 18-inch CMP drainage culvert pipe as shown in the Contract Documents, including survey control, trench excavation, furnishing and installing pipe bedding, furnishing and installing pipe including flared end sections, bends, fittings, and appurtenances, providing connections to structures and end sections, backfilling trench, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE..
2. UNIT OF MEASURE: Linear footage of pipe installed.
3. MEASUREMENT: The total quantity of culvert pipe for which payment shall be made shall be determined by field measurement along the centerline of the pipe prior to trench backfill.

Item 4516 – Drainage Culvert Pipe (30-inch CMP)

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated the construction of the 30-inch CMP drainage culvert pipe as shown in the Contract Documents, including survey control, trench excavation, furnishing and installing pipe bedding, furnishing and installing pipe including flared end sections, bends, fittings, and appurtenances, providing connections to structures and end sections, backfilling trench, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE..
2. UNIT OF MEASURE: Linear footage of pipe installed.
3. MEASUREMENT: The total quantity of culvert pipe for which payment shall be made shall be determined by field measurement along the centerline of the pipe prior to trench backfill.

Item 4617 – Drainage Culvert Pipe (36-inch CMP)

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated the construction of the 36-inch CMP drainage culvert pipe as shown in the Contract Documents, including survey control, trench excavation, furnishing and installing pipe bedding, furnishing and installing pipe including flared end sections, bends, fittings, and appurtenances, providing connections to structures and end sections, backfilling trench, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE..
2. UNIT OF MEASURE: Linear footage of pipe installed
3. MEASUREMENT: The total quantity of culvert pipe for which payment shall be made shall be determined by field measurement along the centerline of the pipe prior to trench backfill.

Item 4718 – Riprap

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated the procurement, hauling, and placement of riprap as required by the Contract Documents, including furnishing geotextile fabric and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE..
2. UNIT OF MEASURE: Tonnage of riprap
3. MEASUREMENT: The total quantity of riprap for which payment shall be made shall be determined by verification of actual weight of riprap delivered and placed within the limits shown in the Contract Documents.

Item 1819 – Seed/Mat/Fertilize – Steep Slopes

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated the seeding, matting, and fertilizing of slopes greater than 4H:1V as required by the Contract Documents, including furnishing and installing erosion control fabric, providing and placing the seed mix, mulch, and fertilizer as specified, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE..
2. UNIT OF MEASURE: Acre, or part thereof.
3. MEASUREMENT: The total quantity of seeding, mulching, and fertilizing for which payment shall be made shall be determined from field survey.

Item 1920 – Seed/Mulch/Fertilize – 4H:1V Slope

1. PAYMENT: Full compensation for all labor, materials, equipment, and other incidentals associated the seeding, mulching, and fertilizing of the 4H:1V transition slope as shown in the Contract Drawings and as required by the Contract Documents, including furnishing and installing erosion control fabric, providing and placing the seed mix, mulch, and fertilizer as specified, and any other work deemed necessary to complete the Work as directed by the OWNER's REPRESENTATIVE.
2. UNIT OF MEASURE: Acre, or part thereof.
3. MEASUREMENT: The total quantity of seeding, mulching, and fertilizing for which payment shall be made shall be determined from field survey.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

\*\*\*END OF SECTION\*\*\*

## SECTION 01 71 23

### SURVEYING

#### PART 1 – GENERAL

##### 1.1 SUMMARY

- A. The CONTRACTOR shall supply all construction and certification surveying services required for the Work.
- B. The ENGINEER will provide to the CONTRACTOR electronic versions and TIN surfaces from the Contract Drawings.
- C. Any disputes that arise in the survey shall be brought to the attention of the OWNER's REPRESENTATIVE immediately and will be resolved in a timely manner.
- D. All surveys shall be conducted under the direct supervision of a Wyoming Licensed-Registered Land Surveyor and sealed.

##### 1.2 DATUM

- A. The horizontal coordinate system is Wyoming Coordinate System NAD83, West Zone, Distances are ground DAF = 1.0003.
- B. The vertical datum is NAVD29.

##### 1.3 PRIMARY CONTROL

- A. The OWNER has established primary control to be used for establishing work lines and grades. Primary control consists of bench marks and horizontal control points in the Work vicinity as shown and described in the Contract Drawings.
- B. CONTRACTOR shall preserve and maintain primary control points.
- C. If the Work will require the removal of an existing survey control point, the OWNER's REPRESENTATIVE will be notified and the CONTRACTOR will re-establish the control point.

#### PART 2 – PRODUCTS (NOT USED)

#### PART 3 – EXECUTION

##### 3.1 LAYOUT OF WORK SURVEYS

- A. The CONTRACTOR shall establish lines and grades for work layout as follows:
  - 1. Staking to delineate waste excavation limits.
  - 2. Staking to delineate extent of earthwork for final grade development.
  - 3. Staking to delineate lateral extent of allowable borrow area.

4. Staking to delineate allowable areas and waste fill heights up-canyon for waste relocation and placement.
- B. The CONTRACTOR shall establish measurements required for Work execution to the specified tolerances.
- C. The CONTRACTOR shall provide stakes, markers, and other survey controls necessary to control, check, and guide construction, as outlined in Article 3.1.A of this Section.
- D. The CONTRACTOR shall be responsible for coordinating verification or measurements for planning and executing their own Work and that of any of their subcontractors.

### 3.2 QUANTITY SURVEYS

- A. The CONTRACTOR shall perform surveys and computations to determine quantities of work performed. The CONTRACTOR shall provide topographic surveys before excavation and before filling waste and/or soil in new areas prior to commencing earthmoving activities. The CONTRACTOR shall provide topographic surveys after completion of excavation and filling waste and/or soil in areas where Work is complete to determine final quantities of work in place.
- B. The OWNER will perform surveys necessary for OWNER's REPRESENTATIVE to verify CONTRACTOR's final quantities of work in place.

### 3.3 AS-BUILT SURVEYS AND RECORD DRAWINGS

- A. CONTRACTOR shall perform final as-built surveys necessary for OWNER's REPRESENTATIVE to document as-built conditions and to verify that the Work was completed to the lines and grades shown in the Contract Drawings. Record drawings shall include elevations and locations of all portions of the following key components of the Work:
  1. Bottom of waste excavation grades
  2. Top of finished grade
  3. Top of relocated waste grades
  4. Top of borrow area grades
  5. Centerline of drainage channels, chutes, and culverts
  6. Rim and invert elevations of culvert pipes and drainage structures
- B. CONTRACTOR shall notify OWNER's REPRESENTATIVE a minimum of three days in advance of anticipated completion dates for Work that will require as-built record surveying. This will include excavation final surfaces and fill final surfaces.
- C. CONTRACTOR shall maintain a clean, undamaged set of black line prints of the Contract Drawings. The CONTRACTOR shall mark up the set to show the actual location of excavation and fill activities. The CONTRACTOR shall mark whichever drawing is most capable of showing conditions fully and accurately.

### 3.4 ACCURACY AND TOLERANCES

- A. Degree of Accuracy
1. The accuracy of surveys shall be appropriate to meet the tolerances specified herein and shall be approved by the OWNER's REPRESENTATIVE.
  2. The tolerances for construction, unless otherwise approved by the OWNER's REPRESENTATIVE, shall be as follows:
    - a. Slopes:
      - i. Line:  $\pm 0.5$  feet
      - ii. Grade:  $+0.1$  feet,  $- 0.33$  feet
    - b. Floors:
      - i. Line:  $\pm 0.5$  feet
      - ii. Grade:  $+0.1$  feet,  $- 0.33$  feet
    - c. Stormwater channels
      - i. Line:  $\pm 0.2$  feet
      - ii. Grade:  $\pm 0.1$  feet
- B. A record survey will be conducted on areas deemed final by the CONTRACTOR and approved by the OWNER's REPRESENTATIVE. The OWNER's REPRESENTATIVE will notify the CONTRACTOR of compliance with design grades and tolerances. Any areas out of tolerance will be repaired by the CONTRACTOR at no additional cost to the OWNER. Quantities for final payment will be based on this record survey and will be calculated by the CONTRACTOR and verified by the OWNER's REPRESENTATIVE.

### 3.5 PRESERVATION OF CONTROL POINTS AND STAKES

- A. Control points and stakes lost or damaged during construction, unless previously authorized, shall be reset at the CONTRACTOR's expense.

### 3.6 MEASUREMENT AND PAYMENT

- A. No direct or separate payment will be made for survey control throughout the duration of the Work. Compensation for all surveying shall be considered incidental to the Work and shall be included in the CONTRACTOR's lump sum and unit prices included in the Contract.

\*\*\*END OF SECTION\*\*\*

## SECTION 01 74 19

### WASTE MANAGEMENT AND DISPOSAL

#### PART 1 – GENERAL

##### 1.1 DESCRIPTION

- A. Section includes: requirements for waste excavation, hauling and placement of waste, monitoring, and management of any special waste or hazardous waste found during excavation
- B. Related sections:
  - 1. Section 01 35 29 – Health, Safety, and Emergency Response Procedures
  - 2. Sections 01 35 43 – Environmental Procedures
  - 3. Section 31 23 00 – Excavation and Fill

##### 1.2 TERMINOLOGY

- A. The following words or terms are not defined but, when used in this Section, have the following meaning:
  - 1. Asbestos-containing Solid Waste – Solid wastes containing greater than 1% by weight asbestos in any of the asbestiform varieties of: chrysotile (serpentine), amosite (cummingtonite, grunerite), crocidolite (riebeckite), anthophyllite, actinolite, or tremolite, and which may be considered friable asbestos (WDEQ Solid Waste Rules and Regulations [SWRR]).
  - 2. Construction and Demolition Waste – Solid waste that includes, but is not limited to, stone, wood, concrete, asphaltic concrete, cinder blocks, brick, plaster, and metal (SWRR).
  - 3. Friable Asbestos Waste – Asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure, and includes previously non-friable asbestos after such previously non-friable asbestos becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure (SWRR).
  - 4. Hazardous Waste – Wastes that are defined as hazardous wastes in Wyoming Department of Environmental Quality Hazardous Waste Rules and Regulations (HWRR).
  - 5. Industrial Solid Waste – Solid waste resulting from, or incidental to, any process of industry, manufacturing, mining, or development of any agricultural or natural resources (SWRR).
  - 7. Liquid Waste – Any waste material that is determined to contain “free liquid” as determined by Method 9095 (Paint Filter Liquids Test), described in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods: USEPA Publication SW-846.
  - 8. Municipal Solid Waste (MSW) – Solid waste resulting from or incidental to residential, community, trade, or business activities, including garbage, rubbish, ashes, street sweepings, dead animals, tires, abandoned automobiles, and all other solid waste other than industrial or hazardous waste (SWRR).

9. Nonfriable Asbestos Waste – Any material containing more than 1% asbestos as determined using the polarized light microscopy (PLM) method that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure (USEPA).
10. Petroleum Contaminated Soil (PCS) – Solid waste consisting of any natural or manmade soil or rock material into which petroleum product has been added, excluding hardened asphalt rubble (SWRR).
11. Regulated Medical Waste – A waste or reusable material that contains an infectious substance and is generated in the diagnosis, treatment, or research of humans or animals (49 CFR 173.134).

### 1.3 SUBMITTALS

- A. Refer to the Article 7 of the General Conditions (EJCDC C-700) for submittal procedures.
- B. CONTRACTOR shall submit an Excavation Work Plan (EWP) to OWNER's REPRESENTATIVE and ENGINEER for approval prior to start of field work.
  1. The EWP shall include, but is not limited to, the following:
    - a. Proposed excavation, hauling, and placement equipment;
    - b. Excavation, waste placement, and excavation backfill sequencing and traffic patterns, including haul road locations and sequencing for MSW, industrial solid waste, construction and debris, and non-friable asbestos;
    - c. Waste screening and hazardous waste and special waste handling procedures;
    - d. Location and details of proposed waste handling and temporary storage facilities for special wastes, hazardous wastes, and any other waste that cannot be landfilled on site;
    - e. Proposed number and work location of trained waste inspectors and field screening devices;
    - f. Identification and qualifications of waste inspectors;
    - g. On-site waste placement and routine cover procedures;
    - g. Daily waste inspection forms to be submitted by the CONTRACTOR;
    - h. Daily waste transportation summary forms to be submitted by the CONTRACTOR;
    - i. Manufacturer's specifications for impervious containers to be used (drums, roll-offs, lined containment, etc.);
    - j. Equipment decontamination procedures (as needed); and
    - k. Proposed methods for maintaining exclusion zones during excavation.
  2. The EWP shall also address:
    - a. Methods for providing access into excavations for the CONTRACTOR, the OWNER's REPRESENTATIVE, and regulatory personnel;
    - b. Routing of haul vehicles (for waste, soil and clean backfill);
    - c. The proposed construction schedule, including anticipated excavation rates as well as an initial notification of estimated inspection needs; and

- d. Waste handling protocols and temporary storage areas for hazardous wastes (fluid-filled drums, lead-base-paint containing material, etc.) or special waste (friable asbestos waste, and PCS). This shall include a discussion of the plan to manifest, haul, and dispose of hazardous waste, friable asbestos, PCS, or other waste category not allowed for disposal at the site.
- C. A Health and Safety Plan (HASP) shall be submitted by the CONTRACTOR for approval by the OWNER's REPRESENTATIVE and ENGINEER pursuant to Section 01 35 29 – Health, Safety, and Emergency Response Procedures. The HASP must be approved prior to start of the Work.
- D. The CONTRACTOR shall discuss with the OWNER's REPRESENTATIVE the proposed methods of construction, including topsoil stripping, excavation, hauling, waste placement, and filling for the various portions of the Work. The review shall be for method only. The CONTRACTOR shall remain responsible for the adequacy and safety of the methods.
- E. The CONTRACTOR shall notify the OWNER's REPRESENTATIVE in writing at least seven days in advance of his/her intention to perform the Work of this Section. If the Work is interrupted for reasons other than inclement weather, the CONTRACTOR shall notify the OWNER's REPRESENTATIVE immediately and provide a plan and schedule for resumption of the work.

## PART 2 – PRODUCTS

### 2.1 MATERIALS

- A. General fill cover soils used to cover waste after placement on Site shall be on-Site clean soils derived from the excavation and/or other on-Site borrow area that consists of natural soils that are free of debris and foreign objects in accordance with the requirements of Section 31 23 00 – Excavation and Fill.

## PART 3 – EXECUTION

### 3.1 SPECIAL WASTE STORAGE AND CONTAINMENT AREA

- A. A temporary waste storage area shall be established in accordance with Resource Conservation and Recovery Act (RCRA) requirements prior to the excavation of waste material. The size of the storage area may be adjusted as necessitated by the volumes of potentially hazardous and/or special wastes encountered at the Site. Provisions shall be made by the CONTRACTOR to have these facilities in place prior to waste excavation so applicable wastes can be stored as they are encountered without impact to project schedule. Prospective locations of temporary waste storage areas shall be determined by the CONTRACTOR and approved by the OWNER's REPRESENTATIVE prior to start of construction; these areas shall be located away from drainage flow paths such as ditches and streams. These areas should be within the area of allowable CONTRACTOR disturbance as shown on the Contract Drawings unless otherwise approved by the OWNER's REPRESENTATIVE.

1. Temporary storage areas shall be constructed by berming the perimeter of the selected area using soil, then covering the bermed area with a plastic liner (40-mil HDPE or OWNER-approved equivalent).
2. Each batch of waste shall be labeled with the date of its excavation and the approximate location in which it was found. After the waste is placed in the bermed area, it shall be covered with plastic sheeting to minimize collection of rainwater.
3. When a batch of waste has been determined to be hazardous, it can remain on site no longer than 90 days. Therefore, any treatment, sampling, and analysis must be completed prior to that 90-day deadline, and each batch must be labeled with the date at which it was determined to be hazardous.
4. Required management practices for temporary waste storage areas include the following:
  - a. Clearly demarcate and post these areas using legible signs, barricades, fences, or other appropriate means to restrict access.
  - b. Maintain good run-on/runoff control within these areas.
  - c. Regularly inspect these areas for leaks and spills.
  - d. Implement best management practices when storing, handling, and transferring wastes, with emphasis on spill prevention and cleanup, stormwater/erosion control, and dust management.

### 3.2 EXCAVATION OF WASTE

- A. Safe temporary construction slopes shall be the responsibility of CONTRACTOR. CONTRACTOR shall inspect all temporary and permanent open-cut excavations and material stockpiles on a regular basis for signs of instability. Should signs of instability be noted, CONTRACTOR shall immediately undertake remedial measures and shall notify CQA ENGINEER immediately. Permanent cut slopes shall be left in smooth, safe, and stable condition at the end of the workday.
- B. CONTRACTOR shall provide all equipment and facilities and perform pumping as necessary to keep Work areas dry of surface water pursuant to Sections 01 35 43 – Environmental Procedures and 31 23 00 – Excavation and Fill.
- C. Waste materials to be removed from excavation limits shown in the Contract Drawings shall be excavated in accordance with this Section and pertinent regulatory requirements, as summarized in Part 1.2 of this Section. The CONTRACTOR shall begin excavating in areas where previous investigations (subsurface investigations or geophysics) have indicated high likelihood of subsurface waste and then progress both laterally and vertically until no further wastes are encountered based on visual observations. If an excavation has progressed into native soil, then that excavation may be terminated unless further excavation is required to meet design grades.
- D. The means and methods for excavation will be selected by the CONTRACTOR.

- E. Excavations shall generally proceed in a manner so as to minimize stormwater contact with exposed waste. Temporary diversions (i.e., berms or ditches) shall be constructed to divert run-on from entering active Work areas or other waste areas.
- F. Temporary haul roads shall be established across the area of the excavation by the CONTRACTOR to facilitate a circular traffic pattern through the Work area while minimizing impacts on Site operations and public access.
- G. Landfill excavation quantities shall be determined based on surveying performed by the CONTRACTOR and approved by the OWNER's REPRESENTATIVE before and after the excavation activities are performed, as detailed in Sections 01 22 13 – Measurement and Payment and 01 71 23 – Surveying. Visual inspection reports and survey reports, including cross sections or grade stake measurements, shall be the primary means of documenting the removal of waste materials. Excavations shall not be backfilled until inspection by the CONTRACTOR and OWNER's REPRESENTATIVE, and the results have been accepted by the OWNER.
- H. Prior to start of field work, the CONTRACTOR shall provide a construction schedule that includes anticipated excavation rates as well as an initial notification of estimated inspection needs. At least one business day before having an excavation area ready for inspection, the CONTRACTOR shall provide the OWNER's REPRESENTATIVE with written notice that the area is ready for inspection.
- I. Waste removal shall be performed in the landfill excavations until the following criteria are met:
1. All visually observable waste has been removed; and
  2. Native soils are encountered. In the event that the disposal trench or area was formed with compacted berms, the excavation of the sidewalls shall continue until the presence of the compacted soil berms is confirmed and documented.
  3. Within the limits of the the permanent 4H:1V slope, waste excavations shall only extend to the final design grades.
- J. As waste is being excavated, it shall be visually inspected by the CONTRACTOR. The OWNER's REPRESENTATIVE shall provide oversight of waste inspection. The CONTRACTOR shall provide a full-time waste inspector that meets the following training and experience requirements:
1. Hazardous Waste Operations and Emergency Response training in accordance with 29 CFR 1910.120; and
  2. At least two years of applicable experience.
- K. Based upon the results of the CONTRACTOR inspections, waste may be selected for special handling as described in Part 3.54 of this Section. Waste selected for special handling (special waste including friable asbestos waste and PCS waste), nonhazardous liquid waste, regulated medical waste, hazardous waste, and any other waste prohibited from disposal at the Site shall be taken to temporary waste storage areas for possible additional characterization, processing prior to disposal, or directly loaded for transportation as long as the requirements of this Section are met. Wastes that do not require special handling

(e.g., MSW, industrial solid waste, construction and debris and non-friable asbestos) shall be loaded directly into trucks for hauling and placement at the designated areas of the Site. Nonhazardous liquid waste may be augmented with solid material until a passing paint filter test is obtained and landfilled on site.

### 3.3 WASTE CHARACTERIZATION

- A. Waste inspection and sampling and laboratory analysis (if necessary) shall be conducted by the CONTRACTOR to allow appropriate waste manifesting and disposal in accordance with state and federal regulations. Waste manifests shall be prepared by the CONTRACTOR and signed by the OWNER'S REPRESENTATIVE, as required.
- B. The physical characteristics of the waste shall be evaluated through on-site observation and waste screening conducted by trained CONTRACTOR personnel. It is the sole responsibility of the CONTRACTOR to ensure wastes are disposed of in accordance with the applicable regulations and laws. Waste inspectors shall be present at each active excavation. Based on these inspections, the CONTRACTOR shall submit waste inspection forms to the OWNER'S REPRESENTATIVE on a daily basis. Selection of waste for special handling shall be based on the results of the waste inspection and the following criteria.
  - 1. MSW, industrial solid waste, construction and debris waste and non-friable asbestos waste shall be loaded directly into trucks for hauling and placement up-canyon at designated areas within the landfill limits
  - 2. Friable asbestos waste shall be tightly sealed in structurally rigid, leak-tight containers, enclosing single, six-mil-thick plastic bags for shipment to an approved off-site facility. Structurally rigid containers include those containers that can withstand pressures of 250 psi.
  - 3. Nonhazardous liquid waste may be mixed with soil or other ENGINEER-approved amendments to pass the paint filter test and then landfilled on Site in the designated up-canyon waste placement areas.
  - 4. PCS waste shall be stored at the temporary storage facility, and analyzed and manifested as necessary for shipment and disposal at an approved disposal site.
  - 5. Regulated medical waste shall be stored at the temporary storage facility, and analyzed and manifested as necessary for shipment and disposal at an approved disposal facility.
  - 6. Hazardous waste shall be directed to on-site waste storage areas for subsequent testing and manifested for shipment and disposal at an approved disposal facility.
- C. In the event there is a discrepancy in waste disposition between the CONTRACTOR and the OWNER'S REPRESENTATIVE, the discrepancy shall be immediately brought to the OWNER for resolution. Depending on the type of waste, the sampling and analysis program may include any of the following:
  - 1. Chemical composition analysis;
  - 2. TCLP testing;
  - 3. Paint filter liquids testing; and
  - 4. Reactivity, corrosivity, and ignitability testing.

### 3.4 WASTE HAULING AND PLACEMENT

- A. Excavated MSW will be hauled to designated placement areas within landfill limits for placement and placed within the allowable lateral disposal limits such that the maximum waste placement elevations are not exceeded;
- B. MSW will be placed and compacted with on-site equipment, to the satisfaction of the CQA ENGINEER;
- C. MSW shall be hauled so that MSW is not dispersed prior to placement at the designated placement area;
- D. MSW placed each day shall be covered with a minimum of six inches of general fill material.

### 3.5 HANDLING SPECIAL WASTE

- A. Special care shall be exercised in areas identified by the CONTRACTOR as potentially containing special waste or hazardous waste. The following process is intended to ensure that special wastes and hazardous waste are handled appropriately, with minimal disruption to the project schedule.
  - 1. Notify the OWNER's REPRESENTATIVE immediately upon discovery of a special waste or hazardous waste.
  - 2. Where appropriate, demarcate the area to restrict access to the area. Note visual observations (physical characteristics, labels on containers, etc.) and determine appropriate PPE.
  - 3. Special wastes and hazardous waste shall be immediately containerized and stored in accordance with Article 3.1 of this Section until characterization of the waste is complete. These materials shall be contained in drums, overpacks, or Hazmat roll-offs used to ship special or hazardous waste.
    - a. Material near leaking drums with high volatile organic compound (VOC) readings shall be segregated.
    - b. All drums containing unknown materials shall be placed in overpack drums to stabilize the contents, and the filled overpack drums shall be moved to a designated drum storage area for further characterization.
- B. Representative samples shall be obtained by following the sampling methods specified in the RCRA Waste Sampling Technical Guidance document (August 2002). Chain-of-custody forms shall be used with each sample collected. The chain of custody shall include information about the sample size, container, required testing, date and time of sample collection, name of sampling personnel, name of waste generator, identification of waste (i.e., contaminated soil, drum liquid, etc.), and signature of person sampling and person accepting custody of sample for analysis.
- C. Trucks, roll-offs, drums, and other containers may be used to store and/or transport wastes from the Site to appropriate disposal facilities.
- D. Upon discovery of a special waste or hazardous waste, subsequent handling, characterization, management, and disposal will be paid through the Force Account.

### 3.6 SURVEY CONTROL

- A. Surveying of the MSW excavation areas and the MSW fill areas shall be performed by the CONTRACTOR prior to and following MSW excavation and placement operations in that area to verify quantities for payment purposes in accordance with Sections 01 22 13 – Measurement and Payment and 01 71 23 – Surveying.

\*\*\*END OF SECTION\*\*\*

## SECTION 32 91 16

### PLANTING SOIL STABILIZATION

#### PART 1 – GENERAL

##### 1.1 DESCRIPTION

- A. The CONTRACTOR shall furnish all labor, materials, tools, supervision, transportation, and installation equipment necessary to re-vegetate designated excavation areas, borrow areas, and fill areas as noted in the drawings. All re-vegetation shall be done in strict accordance with the requirements specified herein.
- B. The CONTRACTOR shall review the installation procedures and coordinate the re-vegetation work with other site work.

##### 1.2 REFERENCES

- A. Federal Seed Act, amended August 1988, Wyoming Seed Law, 11-12-101 through 11-12-123, (Revised 2007), and Wyoming Weed and Pest Control Act of 1973
- B. Association of Official Seed Analysts and International Seed Testing Association Guidelines
- C. American Society for Testing and Materials (ASTM) Standard Specification for Wire Cloth and Sieves for Testing Purposes, Method E-11
- D. Test Methods for the Examination of Composting and Compost United States Composting Council (2002)
- E. Colorado State University Cooperative Extension Service Fact Sheet No. 0.519 Managing Soil Compaction (2003)
- F. Wyoming Forage Certification Standards for Noxious Weed Free Forage, Wyoming Department of Agriculture (1999)
- G. North American Weed-Free Forage Program Minimum Certification Standards, North American Weed Management Association (2003)

##### 1.3 DEFINITIONS

- A. Clod: A soil clod consists of an aggregation of soil particles that is hard and when broken consists of lumps that resist further breakdown by hand.
- B. Mulch: Applied to seed bed immediately following seeding to prevent erosion, retain moisture and minimize the spread of weeds. Composed of certified weed-free hay.
- C. Organic soil amendment: Improves soil structure and water-holding capacity, and restores soil microbial activity and nutrient cycling in the soil. Typically composed of one or more of the following: peat, wood chips, or composted material.

- D. Perennial seeding: Seeding performed in areas required to establish long-term vegetation as an integral part of a cover.
- E. Plant growth medium: Topsoil and, if needed, incorporated mixture of organic amendment and/or fertilizer, which is prepared as a seedbed, seeded, and mulched.
- F. Weed seeds: Seeds of declared weeds or designated noxious weeds as defined by the Wyoming Weed and Pest Control Act W.S. 11-5-102 (a)(xi) and prohibited, restricted, or regulated noxious weeds as define by the Wyoming Seed Law, W.S. 11-12-101(b)(xviii).

#### 1.4 SUBMITTALS

- A. CONTRACTOR shall submit a Work Plan detailing the sources of all re-vegetation materials, methods, techniques, and equipment for mixing seed and erosion control techniques including hay mulching and erosion mats that will be used to perform re-vegetation work for review and approval by the ENGINEER.
- B. Material certifications:
  - 1. Seed: Seed labels or certification from Supplier listing species scientific name, variety, common name, origin, purity, germination and weed seed content
  - 2. Mulch:
    - a. Calculation of mulch application rate (in bales per acre) for each delivery.
    - b. Description of approach for application of tackifier to hold mulch in place. Tackifier shall be StarTak 100 by CHEMSTAR. Mix 12 x 50-pound bags per 3,000 gallons of water and apply at rate of 100 dry pounds per acre on top of mulch
    - c. Empty and loaded weight slips from a certified scale of all trucks used in the delivery of mulch.
    - d. Weed-free certification for hay mulch.
    - e. Receipts listing the number of bales in each truckload.
  - 3. Erosion Control Mats:
    - a. Certification from the manufacturer on the specifications of the erosional control mats delivered to the site.

### PART 2 – PRODUCTS

#### 2.1 MATERIAL PACKAGING, DELIVERY, AND INSPECTION

- A. Deliver seed in sealed and labeled containers or rodent-proof bags in accordance with standard commercial practice.
- B. Seed shall be free of mold and moisture. All labeling shall be intact and legible.
- C. Deliver mulch free of excessive mold and moisture.
- D. Inspect all materials upon delivery to the worksite and prior to use. Ensure that materials meet the requirements of this Section.

- E. Remove any nonconforming materials from the worksite within five days at no expense to the OWNER.

## 2.2 EQUIPMENT

- A. Supply equipment that meets the following minimum requirements/capabilities:
  - 1. Seedbed preparation equipment: Equipment capable of providing two-inch maximum clod size in the upper two inches of soil and a smooth, reasonably firm, but friable seedbed such as a spring-tooth harrow, cultipacker, roller harrow, or other ENGINEER-approved equipment.
  - 2. Drill seeder:
    - a. Seeding equipment with at least two seed boxes, one for fluffy seeds and one for chaffy seeds.
    - b. Seeder shall be capable of drilling seed on 6- to 8-inch centers. The seeder shall be equipped with double disc furrow openers and intact depth bands with scrapers on all disc openers, packer wheels with adjustable tension and coulter wheels, or as approved by the ENGINEER.
    - c. Select the seeding equipment that efficiently and effectively distributes seed evenly and places seed at a depth of 0.25 to 2.0 inches, depending on the seed.
  - 3. Mulch applicator: Propose equipment for approval. Equipment should preserve fiber length.
  - 4. Mulch crimper:
    - a. Crimper shall have V-type wheel land packers or scalloped disc land packers capable of anchoring mulch on eight-inch centers.
    - b. Discs with sharp blades shall not be accepted for crimping.
  - 5. Tackifier: Propose installation equipment for approval.

## 2.3 MATERIALS

### 2.1 ORGANIC SOIL AMENDMENTS

- A. Organic soil amendment shall consist of existing compost stockpiled on site. CONTRACTOR may substitute "Biosol Forte" and "Menefee Humate" for compost.
- B. Compost shall be free of stones, sticks, garbage, and other debris.

### 2.2 SEED MIX

- A. Provide seed for grass in accordance with Table 32 91 16-1.

TABLE 32 91 16-1  
DRILL SEED MIX TABLE

Common Name	Scientific Name	Percentage	PLS/ac
Western wheatgrass	<i>Pascopyrum smithii</i>	10	0.4
Thickspike wheatgrass	<i>Elymus lanceolatus</i>	10	0.4
Idaho fescue	<i>Festuca idahoensis</i>	10	0.4
Bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	10	0.4
Big bluegrass	<i>Poa secunda</i>	10	0.4
Mountain brome	<i>Bromus marginatus</i>	10	0.4
Slender wheatgrass	<i>Elymus trachycaulus</i>	15	0.6
American vetch	<i>Vicia americana</i>	5	0.2
Rocky Mountain penstemon	<i>Penstemon strictus</i>	5	0.2
Yarrow	<i>Achillea millefolium</i>	5	0.2
Blue Flax	<i>Linum lewissii</i>	5	0.2
Creeping Barberry	<i>Mahonia repens</i>	5	0.2
Totals		100	4

Note: Seeding rate is for drill seeding. Broadcast seeding to be performed at two times the drill seed rate.

- B. Test seed for the following:
1. Purity and germination: Provide retesting results from seed Supplier if seed was stored more than six months from the date of the Supplier's original acceptance test.
  2. Prohibited noxious weed seed: Seed shall contain no federal- or state-listed prohibited noxious weed seed as specified in the Wyoming Seed Law
  3. Restricted noxious weed or regulated weed seed: Seed shall contain no more noxious seeds per pound of any single restricted weed species than the amount established by the Wyoming Department of Agriculture as specified by Wyoming Seed Law
  4. Regulated weed seed: Seed shall contain no more than 1% by weight of weed seed of other crops and plant species.
- C. Test seed in accordance with guidelines established by the Association of Official Seed Analysts, International Seed Testing Association, and the Federal Seed Act standards. Test results shall be no more than six months old from the date of delivery to the worksite.
- D. Test results shall be included on the label and/or certificate for each container of seed delivered to the worksite. In accordance with Wyoming Seed Law Section 11-12-105, seed supplier shall affix this label to the sealed container and include the following information:
1. Commonly accepted name of the kind and variety of the seed;
  2. The full name and address of the person selling, offering or transporting the seeds for sale;
  3. The percentage of pure seed, crop seed (not to be added to pure seed), inert matter, common weed seeds by weight, germination, hard seed, and the month and year of the germination test;

4. The origin of the seed;
  5. Lot number or other lot identification;
  6. Name and number of each kind of restricted noxious weed seeds per pound; and
  7. The words "poisonous treated" shall appear in bold print if the seeds have been treated with chemicals which are toxic or poisonous to either humans or livestock.
- E. Sources for native seed variety shall be subject to inspection and acceptance by the ENGINEER.
- F. ENGINEER may send seed to an independent testing laboratory to verify seed quality.
- G. Seed mixture will require seed box separation. Provide the species composition for each seed box.

### 2.3 MULCH

- A. Mulch shall not be brittle, molded, or rotted, and shall be free of cattails and weed seeds of all plants on the Designated Noxious Weed List and the Prohibited Noxious Weed List as stated by the Wyoming Weed and Pest Control Act and Wyoming Seed Act, respectively.
- B. If mulch is harvested outside of Wyoming, the ENGINEER may accept the mulch if there is no evidence of weeds listed on the Wyoming Designated Noxious Weed and Prohibited Noxious Weed lists. The ENGINEER will review the weed-free mulch certification, inspect the mulch upon delivery, and may perform periodic inspections of the mulch during application. If the ENGINEER determines that the mulch contains weeds listed on either list, mulch application will be stopped. The ENGINEER will reject the bale being applied and may reject associated bales prior to application.
- C. Mulch shall be accompanied by documentation that the mulch has been inspected by the designated authority for certifying weed-free forage in the state from which it was obtained. The transit certificate shall match the weed-free certification certificate.
- D. Mulch shall be in air-dry condition and suitable for placing with mulch application equipment.
- E. Mulch shall be delivered in large, round bales that provide longer fibers. Large square bales may be accepted. Small square bales shall not be accepted.
- F. ENGINEER will perform inspections of mulch upon delivery to ensure mulch is in suitable condition for use.
- G. Provide native grass hay. Tall fescue (*Lolium arundinaceum* or *Festuca arundinacea*) and smooth brome (*Bromopsis inermis*) are specifically prohibited for use as grass hay mulch. Provide confirmation from the supplier that the product does not contain either of these species.

- H. Provide certified weed-free hay. Weed-free straw mulch may be accepted by the ENGINEER if supplies of hay are limited due to environmental conditions, such as drought or disease.

## 2.4 EROSION CONTROL MATTING

- A. Erosion control matting shall consist of long-term erosion control blanket Excel CC-4, all natural, or ENGINEER-approved equivalent.

## PART 3 – EXECUTION

### 3.1 MATERIAL AND EQUIPMENT STORAGE REQUIREMENTS

- A. Materials and equipment shall be stored in such a manner as to maintain the as-delivered condition.

### 3.2 SCHEDULING/SEQUENCING

- A. Perform the Work in the following sequence:
  1. Place and incorporate organic soil amendment.
  2. Prepare seedbed.
  3. Seed.
  4. Mulch or place erosion matting.
- B. Do not proceed to subsequent work activity without authorization from the ENGINEER.
- C. Seeding times:
  1. Fall seeding (preferred): Beginning October 1 (or after 4 consecutive days of average daily temp below 50° F) until freezing conditions (or as approved by the ENGINEER).
  2. Spring seeding: March 1 (or after soil thaws) – May 15 (or as approved by the ENGINEER).
- D. Prior to the start of work activities, assess field conditions and ensure that soil and climate conditions are favorable to perform work activities.

### 3.3 PLACE COMPOST AND/OR OTHER SOIL AMENDMENTS AND TOPSOIL

- A. Organic soil amendment shall be required for re-vegetation on slopes greater than three horizontal (3H) to one vertical (1V).
- B. Top soil stripped from excavation and fill areas shall be used for reseeding on slope less than 3H to 1V.
- C. Notify the ENGINEER at least 24 hours prior to the first time organic amendment placement is planned to allow for inspection.
- D. Load and haul existing stockpiled compost from the stockpile area to the areas to be vegetated.

- E. Spread the compost evenly over the area to be vegetated with a truck-mounted or tractor-powered box spreader or bulldozer or grader. Application rate shall be approximately 60 dry tons per acre.
- F. “Biosol Forte” and “Menefee Humate” may be spread evenly over the area to be vegetated in lieu of compost. Application rate for “Biosol Forte” is one (1) ton per acre and application rate for “Menefee Humate” is 150 pounds per acre.
- GF. Within 24 hours of application, soil amendments shall be uniformly incorporated 6 inches into the surface of the soil on a maximum of 16-inch centers using disking techniques or other ENGINEER-accepted methods to otherwise incorporate amendment and achieve a uniform mixture.
- HG. Should the tilling not penetrate the required 6 inches, chisel or rip to 6 inches on maximum 16-inch centers prior to tilling.
- IH. Perform inspections on the soil amendment placement activities to assure even and uniform application.

### 3.4 SEEDBED PREPARATION

- A. Notify the ENGINEER at least 24 hours prior to the first time seedbed preparation is planned to allow for inspection of seedbed preparation equipment.
- B. Do not commence seedbed preparation operations without organic soil amendment incorporation inspection, seed bed preparation equipment inspection and authorization from the ENGINEER.
- C. Soil shall be reasonably free of soil aggregates (including clods) in the top surface of the prepared soil.
- D. Roll and/or harrow, or otherwise prepare the area to provide a smooth, reasonably firm, but friable seedbed.
- E. Notify ENGINEER when ready for inspection of seedbed preparation operations. Do not commence seeding operations without authorization from the ENGINEER.

### 3.5 SEEDING

- A. CONTRACTOR shall notify the ENGINEER at least 24 hours prior to the first time seeding is planned to allow for inspection of seeding equipment and calibration.
- B. Calibrate all seeding equipment. Drill seeding equipment shall be calibrated as recommended by the Manufacturer.
- C. Apply seed at rates (in pounds of pure live seed [PLS] per acre) stated in Table 32 91 16-1. Seed shall be applied within 10% (by weight) of the rate specified.
- D. Determine the texture of the plant growth medium to determine depth of seed drilling.
  - 1. If the plant growth medium is a sand, drill all seeds to a depth of 0.5 to 1 inch.

2. If texture of plant growth medium is medium to fine, drill all seeds to a depth of 0.25 to 0.5 inches.
- E. ENGINEER will inspect the seeding activities to assure even and uniform application periodically for the duration of seeding activities.

### 3.6 MULCHING AND ANCHORING

- A. Place mulch in a continuous cover of uniform thickness at a rate of two tons per acre over the seeded area for areas as shown on Contract Drawings and as directed by the ENGINEER.
- B. Apply mulch within 5% (by weight) of the rate specified.
- C. Do not commence mulching and anchoring operations without seed application inspection, mulching equipment inspection, and authorization from the ENGINEER.
- D. ENGINEER will inspect the mulch application activities periodically for the duration of mulch application activities.
- E. Anchor mulch to the soil by crimping in a pattern (e.g., perpendicular to the slope on side slopes and perpendicular to prevailing wind direction on the flats). Crimp mulch within 24 hours of application, barring delays from inclement weather.
- F. Crimp mulch into the soil to achieve rows of standing mulch; apply tackifiers for re-vegetation areas.
- G. Do not sever the mulch during anchoring.

### 3.7 EROSION CONTROL MATTING

- A. Install erosion control matting on slopes steeper than 4H:1V in lieu of mulch.
- B. Erosion control matting shall be installed in accordance with Manufacturer's recommendations and as approved by the ENGINEER.

### 3.8 ALTERNATIVE VEGETATION METHODS—SEEDING IN AREAS INACCESSIBLE TO DRILL SEEDER

- A. Areas inaccessible to drill seeding equipment, apply seed and mulch with standard hydraulic equipment.
  1. Hydromulch will consist of virgin wood fiber applied at 1,500 lbs/square acre and a plant-based tackifier applied at 200 lbs/square acre.

### 3.9 PROTECTION OF WORK

- A. Perform seeding operations only during periods when successful results can be obtained. Consider drought, excessive moisture, frozen soil or other unsatisfactory conditions to determine if work should commence or continue.

- B. Do not conduct soil amendment placement, seedbed preparation, seeding, mulch, or install erosion control matting when wind conditions cause the materials to blow from the intended target area.
- C. Protect finished areas from erosion during all phases of the work.
- D. Repair areas not accepted by the ENGINEER due to damage from any cause.

\*\*\*END OF SECTION\*\*\*