

Exhibit B – Restoration Specifications

1.1 SUMMARY

- A. Section Includes:
 - 1. Ripping
 - 2. Fertilizer
 - 3. Soil Conditioner
 - 4. Fine Grading
 - 5. Native Grass Seeding

1.2 SUBMITTALS

- A. Quality Control Submittals:
 - 1. Certificates: State, federal and other inspection certificates shall accompany invoice for materials showing source or origin. Submit to Owner prior to acceptance of material.

1.3 DELIVERY, STORAGE AND HANDLING

- A.. Fertilizer: Deliver inorganic or chemical fertilizer to site in original unopened containers bearing manufacturer's guaranteed chemical analysis, name, trade name, trademark and conformance to state law, bearing name and warranty of producer.
- B. Notify Owner of delivery schedule in advance so material can be inspected upon arrival at project site. Immediately remove unacceptable material from project site.

1.4 PROJECT/SITE CONDITIONS

- A. General: Do not perform work when climate and existing site conditions will not provide satisfactory results.
- B. Vehicular accessibility on site shall be as directed by the Campus Landscape Architect. Repair damage to prepared ground and surface caused by vehicular movement during work under this section to original condition at no additional cost to the Owner. All damage incurred outside of construction limits due to vehicle or access traffic will be repaired to the same standards listed below. Coordinate access with the University of Colorado Boulder Project Manager.

PART 2 – Compaction

2.1 SOIL

- A. Compaction: Remove all gravel; scarify existing top 12" of soil.
- B. Soil Conditioner: A-1 Organics Pro Gro II Organic Compost or approved equal to be used for all areas requiring soil amendment. Alternates to be approved by the Campus Landscape Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. General: Verify that existing site conditions are as specified and indicated before beginning work under this Section.
 - 1. Grades: Inspect to verify rough grading is within +0.1 foot of existing grade.
 - 2. Damaged Earth: Inspect to verify that earth rendered unfit to receive planting due to concrete, water, mortar, limewater or any other contaminant dumped on it has been removed and replaced with clean earth from a source approved by the Campus Landscape Architect.
- B. Unsatisfactory Conditions: Report in writing to General Contractor with copy to Owner.
- C. Acceptance: Beginning of installation means acceptance of existing conditions by installer.

3.2 PREPARATION

- A. Protection:
 - 1. Contractor shall locate sewer, water, irrigation, gas, electric, phone and other pipelines, conduits or utilities prior to commencing work.
 - 2. Contractor shall be responsible for proper repair to landscape, utilities, walls, pavements and other existing site improvements damaged by operations under this section.
- B. Weed Control: Do not remove soil within tree/plant protection zones. Take care to insure that removal of soil and weeds is done in a fashion as not to contaminate surrounding soil with existing weed/weed seed. Use of herbicide in any form must be approved in writing with the Campus Landscape Architect.
- C. Surface Grade: Remove weeds, debris, clods and rocks larger than 1/2". Dispose of accumulated debris at direction of Campus Landscape Architect.
- D. Runoff: Take measures and furnish equipment and labor necessary to control the flow, drainage, and accumulation of water. Insure that all water will run off the grades.
- E. Erosion Control: Take measures and furnish equipment and labor necessary to control and prevent soil erosion, blowing soil and accumulation of wind-deposited material on the site throughout duration of work.

3.3 INSTALLATION

A. Soil Amendment:

1. Evenly distribute Pro Gro II and Richlawn 5-3-2 to landscape areas at the following rates:
 - A. Pro Gro II will be applied at a rate of 4 cu. Yds. Per 1,000 sq.ft to all sod and seed areas
 - B. Richlawn 5-3-2 will be applied at a rate of 1lb nitrogen/ 1000 sq.ft to all sod and seed areas
2. After applying soil conditioner and fertilizer, thoroughly till area to depth of 6" minimum by plowing, harrowing, or disking until soil is well pulverized and thoroughly mixed.

B. Fine Grading in all Landscape Areas:

1. Do fine grading for areas prior to planting.
2. For ground surface areas surrounding buildings to be landscaped, maintain required positive drainage.
3. Establish finish grades to within 0.04 foot of grades indicated.
 - a. Sod areas: Allow 1.25" for sod.
4. Noxious weeds or parts thereof shall not be present in the surface grade prior to landscaping.
5. Prior to acceptance of grades, hand rake to smooth, even surface free of debris, clods, rocks, and vegetable matter greater than 1/2".

3.4 NOTIFICATION AND INSPECTION

- A. Inspection: Provide notice to Campus Landscape Architect requesting inspection at least 7 days prior to anticipated date of completion.
- B. Deficiencies: Campus Landscape Architect will specify deficiencies to Contractor who shall make satisfactory adjustments and shall again notify Campus Landscape Architect for final inspection.

3.5 PROTECTION

- A. General: Provide and install barriers as required and as directed by Campus Landscape Architect to protect completed areas against damage from pedestrian and vehicular traffic until acceptance by Owner. Contractor is not responsible for malicious destruction caused by Others.

4.0 Native Grass Seeding

4.1 SUBMITTAL

- A. Submit seed vendor's certification for required grass seed mixture, indicating percentage by weight, and percentages of purity, germination, and weed seed for each grass species.
 - 1. Specified native seed mix – indicated
- B. Submit the following material samples:
 - 1. Custom native seed mix
- C. Warranty for Native Seed Areas: At completion of work, furnish written warranty to Owner based upon requirements as specified.

4.2 DELIVERY, STORAGE, AND HANDLING

- A. Deliver seed and fertilizer materials in original unopened containers, showing weight, analysis, and name of manufacturer. Store in a manner to prevent wetting and deterioration.

4.3 PROJECT CONDITIONS

- A. Work notification: Notify owner's authorized representative at least seven (7) working days prior to start of seeding operations.
- B. Protect existing utilities, paving, and other facilities from damage caused by seeding operations.
- C. Perform seeding work only after planting and other work affecting ground surface has been completed.
- D. Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.
- E. Provide hose and lawn watering equipment as required.
- F. The irrigation system will be installed prior to seeding. Locate, protect, and maintain the irrigation system during seeding operations. Repair irrigation system components during seeding operations at Contractor's expense.

4.4 WARRANTY

- A. Provide a uniform stand of grass by watering, mowing, and maintaining seeded areas until final acceptance. Reseed areas, with specified materials, which fail to provide a uniform stand of grass until all affected areas are accepted by the Consultant and the Owner.

5.0 PRODUCTS

5.1 MATERIALS

- A. Native seed:
 - 1. Fresh, clean, and new crop mixture mixed by an approved method.
 - 2. All irrigated seed areas are to be the following custom blended native seed mix:
 - 30% Blue grama – *Bouteloua gracilis*
 - 20% Western Wheatgrass – *Agropyron smithii*
 - 20% Sand Dropseed – *Sporobolus cryptandrus*
 - 15% Hairy Grama – *Bouteloua hirsute*
 - 10% Galleta – *Hilaria jamesii*
 - 5% Wildflower Seed Mix consisting of at least four species at not more than
 - 25% each of the following acceptable perennial wildflowers:
 - Golden Aster – *Heterotheca villosa*
 - Desert Four O'clock – *Mirabilis multiflora*
 - Scarlet Globemallow – *Sphaeralcea coccinea*
 - Blazing Star – *Menizelia oligosperma*
 - Western Wallflower – *Eysimum asperum*
 - Fireweed – *Liatris angustifolium*
 - Gayfeather – *Liatris punctata*
 - Blanket Flower – *Gallardia aristata*
 - Blue Flax – *Linum perenne lewisii*
 - 3. Variations to seed mix will be acceptable based on topsoil analysis. Variations are to be approved by Landscape Architect.
 - 4. Seeding Rate: 6 lbs/1000sf for broadcast seeding. Other seeding methods to be reviewed and approved by Landscape Architect and Owner.
- B. Water: Free of substance harmful to seed growth. Hoses or other methods of transportation furnished by Contractor.

6.0 Execution

6.1 INSPECTION

- A. Examine finish surfaces, grades and depth. Do not start seeding work until unsatisfactory conditions are corrected.

6.2 PREPARATION

- A. Limit preparation to areas which are ready to be seeded immediately.
- B. The contractor shall prepare the sub grade to all areas to be seeded by disking compacted soil to a depth of six (12) inches. No organic amendments will be applied to dry land seed grass area.
- C. Prior to the second tillage, the fertilizer shall be applied to the surface of the rough sub grade of the areas to be seeded and tilled to a depth of 6" during the second operation. When completed, the soil shall be firmed by rolling and float drag, followed by steel raking, to provide for the proper seeded surface. The seed bed shall be totally free from rock or clay clods over one (1) inch in diameter.

6.3 INSTALLATION

- A. Seeding:
 - 1. Seed immediately after preparation of bed. Seed irrigated seed areas between April 1 - August 15 and dry land areas between October 1 - April 15 or at such other times acceptable to the Landscape Architect.
 - 2. Seed indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.
 - 3. Native Seed:
 - a. Do not use wet seed or seed which is moldy or otherwise damaged in transit or storage. Deliver seed to the job site in the original unopened containers and present certified labels to the Consultant prior to opening containers.
 - b. Seeding shall be done by means of broadcast seeding. Seeds shall be uniformly sown and raked to a depth of approximately 1/4".

6.4 MAINTENANCE, GUARANTEE, AND ACCEPTANCE

- A. Maintenance Period and Guarantee:
 - 1. The maintenance and warranty period shall begin immediately after each area is seeded until final acceptance of the project. During this time, the contractor shall be responsible for watering, if needed, mowing, spraying, weeding, and all related work and costs as necessary to insure that seeded areas are in a vigorous growing condition until final acceptance. The Landscape Architect will direct the contractor on what seeded areas need to be replaced at the final walk-through.

2. The contractor shall, for a period of one (1) year, monitor his work once every two months to verify that major settlement has not taken place and that no seeded area has become waterlogged in settled swales or other areas. Should settlement occur, the contractor shall repair damage according to these specifications.
3. The contractor shall maintain the seeded areas until all work on the contract has been completed and accepted. Maintenance shall consist of, in addition to watering, mowing, weed control, and protection from vandalism, the repair of areas damaged by erosion protection from vandalism, the repair of areas damaged by erosion or wind.

Such areas shall be repaired during the maintenance period at no expense to the Owner to re-establish the condition and grade of the soil prior to application of the mulch and shall be re fertilized, reseeded, and re mulched as directed. Major repair of areas due to the work or failure of other contractor's systems or work shall be by that contractor who damaged the work, provided that during this maintenance period the lawn contractor notifies the Owner's authorized representative in writing of such damage within ten (10) days of the occurrence. Major damage due to vandalism (major damage is defined as damaged costing over \$5,000.00 in time and materials) in any one incident shall be borne by the Owner, again provided that notification was made within ten (10) days as specified herein. After receiving final acceptance, maintenance shall become the responsibility of the Owner.

4. The seeded areas shall be accepted on the basis of having a uniform plant growth over the entire seeded area. Two (2) months after seeding, the areas seeded shall be reviewed by the Landscape Architect and the Contractor. Any areas (as determined by the Landscape Architect) where the seed has failed to germinate shall be reseeded and raked to cover the seed. Any area where the seed has failed to grow, reseeded shall be at the Contractor's expense until grass is established and accepted. Acceptable uniform plant growth shall be defined as when the scattered bare spots, not greater than 4 square inches, do not exceed 5% of the seeded area.

6.5 CLEANING

- A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from seeding operations.