

RUSH COUNTY COURTHOUSE
SIDEWALK & SITEWORK IMPROVEMENTS

SECTION 32 92 19 - SEEDING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Furnish and install all labor, material, and equipment necessary for seeding all areas as indicated or implied by the Contract Documents.

B. Related Sections:

1. Division 31 Section "Earthwork".
2. Division 32 Section "Planting".

1.2 QUALITY ASSURANCE:

A. Installer Qualifications:

1. Engage an experienced installer who has completed seeding work similar in material, design, and extent to that indicated for this project and with a record of successful lawn establishment.
2. All work described in this Section is to be done by an installer specializing in such work within the five (5) years of documented experience in similar work.

B. Refer to Division 31 Section "Earthwork" for top-soil requirements and amendment recommendations to bring soil to optimal condition for growing lawn grass seed.

C. Applicable Publications:

1. The publications of the following institutes, associations, societies, and agencies are referred to in this Section.
2. American Joint Committee on Horticulture Nomenclature Standard: Standardized Plant Names, 1942 Edition and Additions.

D. Requirements of Regulatory Agencies:

1. Certificates of inspection: All shipments of seed shall be properly inspected at the nursery or at the growing site by the authorized Federal and State authorities. All necessary inspection certificates shall accompany the invoice for each shipment or order of stock, as may be required by law for the necessary transportation. Certificates shall be filed with the Architect/Engineer, prior to acceptance of the materials.

1.3 SUBMITTALS

- A. Certification of grass seed from seed vendor for each grass seed mixture stating the botanical name, common name, and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

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1. Certification of each seed mixture for lawn seeding identifying source including name and telephone number of supplier.
- B. Topsoil analysis: Refer to Division 31 Section "Earthwork".
- C. One copy of Certificates of Inspection of Regulatory Agencies as specified herein.
- D. Qualification data for firms and people specified in the "Quality Assurance" articles demonstrate their capabilities and experience. Include list of completed projects with project names and addresses; names and address of Owners and other information specified.
- E. For hydroseeding applications only: submit product data sheets for tackifiers and any other slurry ingredients.

1.4 SCHEDULING

- A. Seasonal Requirements:
 1. Perform the seeding work between 1 March and 15 May or between 15 August and 15 October, or both, unless otherwise approved by the Architect/Engineer; and at such time that the seeding work will not be damaged by freezing temperatures, rain or high winds.
- B. Scheduling:
 1. Seeding operations shall not commence in any area until other trades no longer need machine access to these areas.
 2. Begin installation of seeding after preceding related work is accepted.

1.5 PRODUCT HANDLING

- A. Storage:
 1. Store in a dry, secure location off the ground, free from physical abuse.
 2. Protect from adverse weather conditions.

PART 2 - PRODUCTS

2.1 SEED

- A. Grass Seed: Fresh, clean, dry new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species: Seed of grass species as follows, with not less than 98 percent pure seed, not less than 85 percent germination, and not more than 0.3 percent weed seed:
 1. Permanent seed: Full sun or partial shade:
 - a. 90% Hybrid Bluegrass blend – a minimum of 3 varieties evenly blended, such as Midnight II, Rugby II, Nuglade, or as approved by Architect/Engineer.

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- b. 10% Perennial Rye Grass.
- 2. Permanent seed: Full shade:
 - a. 20% Hybrid Bluegrass.
 - b. 40% Creeping Red Fescue.
 - c. 20% Hard Fescue.
 - d. 20% Chewings Fescue.
- 3. Temporary seed:
 - a. 100% Annual Rye Grass.

2.2 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C602 agricultural limestone containing a minimum 80 percent calcium carbonate equivalent as follows:
 - 1. Class: Class T with a minimum 99 percent passing through No 8 sieve and a minimum 75 percent passing through No 60 sieve.
- B. Aluminum Sulfate: Commercial grade, unadulterated
- C. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate
- D. Sand: Clean, washed, natural or manufactured, free of toxic materials.

2.3 ORGANIC SOIL AMENDMENTS

- A. Peat: Sphagnum peat moss, partially decomposed, finely divided or granular texture, with a pH range of 3.4 – 4.8.
- B. Compost: Well-composted, stable and weed free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1 inch sieve; not exceeding 0.5 percent inert contaminants and free of substances toxic to humans and plantings.

2.4 MULCHES

- A. Straw Mulch: Provide air dry, clean mildew and seed free, salt hay or thrashed straw of wheat, rye, oats, or barley.
- B. Non-Asphaltic Tackifier: Colloidal tackifier recommended by fiber mulch manufacturer for slurry application; nontoxic and free of plant material or germination inhibitors.
- C. Asphalt Emulsion: ASTM D977, Grade SS-1 nontoxic and free of plant-growth or germination inhibitors.

2.5 FERTILIZER

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- A. Bone Meal: Commercial, raw or steamed, finely ground; a minimum 4 percent nitrogen and 20 percent phosphoric acid.
- B. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- C. Commercial Fertilizer: Commercial grade complete fertilizer of neutral character, consisting of fast and slow-release nitrogen 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: 12 percent of actual nitrogen, 12 percent phosphorous, and 12 percent potassium by weight.
- D. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water insoluble nitrogen, phosphorous, and potassium in the following composition:
 - 1. Composition: 20 percent nitrogen, 10 percent phosphorous and 10 percent potassium by weight.

2.6 WATER

- A. Potable.

PART 3 - EXECUTION

3.1 GENERAL

- A. Inspection:
 - 1. Verify soil preparation and related preceding work have been completed.
 - 2. Do not start work until other trades no longer need machine access to these areas.
 - 3. Do not start work until conditions are satisfactory.
- B. Preparation:
 - 1. Protect structures, utilities, sidewalks, pavements and other facilities, trees, shrubs and plantings from damage caused by planting operations.
 - 2. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil bearing water runoff or airborne dust to adjacent properties or walkways.

3.2 LAWN PREPARATION

- A. Limit lawn preparation to areas to be planted.
- B. Newly Graded Subgrades:
 - 1. Loosen subgrade to a minimum depth of 6".
 - 2. Remove stones larger than 1" in any dimension, sticks, roots, trash, and other extraneous matter.
 - 3. Apply soil amendments and fertilizer as recommended by topsoil analyst directly to topsoil before loosening.

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- C. Unchanged Sub-grades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, prepare surface soil as follows:
 - 1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
 - 2. Loosen surface soil to a minimum depth of 6".
Remove stones larger than 1" any dimension, sticks, roots, trash, and other extraneous matter.
 - 3. Apply soil amendments and fertilizers according to topsoil analysis and mix thoroughly into top 6 inches of soil. Till soil to a homogeneous mixture of fine texture.
- D. Finish Grading:
 - 1. Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture.
 - 2. Grade to within plus or minus 1/2 inch of finish elevation.
 - 3. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.
- E. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- F. Restore areas if eroded or otherwise disturbed after finish grading and before planting.
- G. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

3.3 SEEDING

- A. General:
 - 1. Sow seed with spreader or seeding machine.
 - 2. Do not broadcast or drop seed when wind velocity exceeds 5 mph.
 - 3. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 - 4. Do not use wet seed or seed that is moldy or otherwise damaged.
 - 5. Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray.
 - 6. Unless otherwise indicated, sow seed at the rate of 4 to 6 lb./1000 sq. ft.
- B. Slope Protection:
 - 1. On slopes 5:1 and steeper, install erosion control blanket.
 - 2. On slopes less than 5:1, install straw mulch.
 - a. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose depth over seeded areas.
 - b. Spread by hand, blower, or other suitable equipment.
 - c. Anchor straw mulch by crimping into topsoil with suitable mechanical equipment.

3.4 HYDROSEEDING

- A. Hydro-seeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydro-seed applications. Continue mixing until it is uniformly blended into homogeneous slurry suitable for hydraulic application.

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1. Mix slurry with starch based tackifier following manufacturer recommendations.
 - a. Super Tack Natural Tackifier web: www.fibramulch.com 1-888-298-9911
 - b. Star Tak 600 or Star Tak 100 web: www.chemstar.com 1-800-328-5037
 - c. Alternate starch-based products may be approved upon submission
- B. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply mulch at a minimum rate of 1500-lb/acre dry weight but not less than the rate required to obtain specified seed-sowing rate.

3.5 PROTECTION

- A. Description:
 1. Erect temporary barricades and warning signs to protect against pedestrians and vehicular traffic.

3.6 CLEANING

- A. Description:
 1. Immediately clean spills from paved and finished surface areas.
 2. Remove debris and excess materials from the project site.
 3. Dispose of protective barricades and warning signs at termination of lawn establishment.
 4. Remove erosion control measures after lawn establishment period.

3.7 LAWN ESTABLISHMENT

- A. Watering:
 1. Water daily for the first 14 days after seeding.
 2. After first 14 days, supplement rainfall to produce a total of 2 inches of water per week until lawn is clearly established and growing healthy.
- B. Mowing:
 1. When grass reaches 2-1/2 inches in height, mow to 1-3/4 inch in height.
 2. Maintain grass between 1-3/4 inch and 2-1/2-inch height.
 3. Do not cut off more than 40% of grass leaf in single mowing.
 4. Remove grass clippings.
 5. Re-seed spots larger than 1 square foot not having uniform strands of grass.
- C. Weed Eradication:
 1. Between second and third mowing, apply herbicide uniformly at manufacturer recommended rate.
- D. Fertilizer:
 1. Apply fertilizer uniformly at 1 lb. of nitrogen per 1000 square feet 30 days and 60 days after seeding and water immediately.

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E. Satisfactory Seeded Lawn:

1. At end of maintenance period, a healthy, uniform, close stand of grass has been established free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 inches by 5 inches.

3.8 WARRANTY AND MAINTENANCE

A. Begin maintenance of lawns immediately after each area is seeded and continue until acceptable lawn is established, but not less than 60 days after date of Substantial Completion.

1. If full maintenance period has not elapsed before the end of planting season, or if lawn is not fully established, continue maintenance during the next planting season.
2. Maintenance includes watering, fertilizing, weeding, mowing, trimming, replanting, and other operations to provide a uniform, weed free, smooth lawn.

B. Begin the warranty period after the date of Substantial Completion and continue for a period of (one full year).

1. The warranty specified in this section does not deprive the Owner of other rights; he may have in these specifications.
2. The warranty period for new lawn areas shall be for (one full year) after date of Substantial Completion against defects including death and unsatisfactory growth except for defects resulting from Owner abuse or neglect or incidents beyond Contractor's control.
3. Replacement seeding under this warranty shall be granted for (one full year) from date of installation and acceptance.
4. The Contractor shall, at no cost to the Owner, repair damage done to walks, buildings, roads, and other plants or lawns during reseeding.
5. Inspection of the lawn to determine its completion for the beginning of the warranty period will be made by the Architect/Engineer upon notice requesting such inspection by the Contractor at least seven (7) days prior to the anticipated inspection date.

3.9 FINAL INSPECTION AND ACCEPTANCE

A. Description:

1. Request final inspection in writing for acceptance at least ten (10) days before end of warranty period.
2. At the end of the warranty period on the completed lawn, and on written notice from the Contractor, the Architect/Engineer will, within 15 days of such written notice, inspect the lawn to determine if a satisfactory stand of grass has been produced.
3. If a satisfactory lawn has not been established, another inspection will be made after written notice from the Contractor that the lawn is ready for inspection following the next growing season.

END OF SECTION 32 92 19