

San Antonio Water System Standard Specifications for Construction

ITEM NO. 103

Revegetation

103.1. DESCRIPTION: This item shall govern for preparing ground, providing for sowing of seeds, mulching with 70/30 wood/cellulose blend fiber mulch, and other management practices along and across such areas as are designated on the plans and in accordance with these specifications. All areas shall be covered with live grass before acceptance.

103.2. MATERIALS: All seed must meet the requirements of the Texas Seed Law including the labeling requirements for showing purity, germination, name and type of seed. Seed furnished shall be of the previous season's crop for the date of the project. Each variety of seed shall be furnished and delivered in separate bags or containers. A sample of each variety shall be furnished for analysis and testing when directed by the Engineer. The amount of seed planted per acre shall be of the type specified in plans and contract documents.

1. Annual Rye grass will be free of Johnson grass, field bind weed, dodder seed, and free of other seed to the limits allowable under the Federal Seed Act and applicable State Seed Laws.
2. Hydromulch Annual Rye grass will be added into slurry between October 1 and March 15.
3. No additional cost will be charged to the SAWS
4. Fertilizer shall have a chemical analysis of 15-15-15 with micronutrients and shall be water soluble (The figures in the analysis represent the percent of nitrogen, phosphoric acid and potash nutrients, respectively). Fifty percent or greater of the Nitrogen required shall be in the form of Nitrate Nitrogen (N03). The remaining Nitrogen required may be in the form urea Nitrogen (C0(NH2)2).
5. In the event it is necessary to substitute a fertilizer of a different analysis, it shall be a pelleted or granulated fertilizer with a lower concentration, but the total amount of nutrients furnished and applied per acre shall equal or exceed that specified for each nutrient.
6. The fertilizer shall be dry and in good physical condition. Fertilizer that is powdered or caked will be rejected.
7. **Water.** Shall be furnished by the Contractor and shall be clean and free of substances harmful to the growth of vegetation.

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8. **Herbicide.** Herbicide used shall be an easy to apply, effective in a short term, chemical agent to inhibit or destroy weed growth, while being harmless to seed and grass being implanted.
9. **Topsoil.** Topsoil shall conform to the provisions of City of San Antonio Item 515, "Topsoil."

103.3. EQUIPMENT: Provide the machinery, tools and equipment necessary for proper prosecution of the work. All machinery, tools and equipment used shall be maintained in a satisfactory and workmanlike manner.

103.4. CONSTRUCTION: Security of stored hydromulch, seeding and sodding materials will be the sole responsibility of the Contractor at no additional expense to SAWS. It is the Contractor's responsibility to verify the location of all utility lines, electric cables, sprinkling systems and conduits so that the proper precautions must be taken not to disturb or damage any subsurface improvements. Should obstructions be found, the Contractor will promptly notify SAWS Inspector. Any damage caused by the Contractor shall be repaired by himself at no cost to SAWS. Any such repairs shall be subject to approval by the Inspector.

1. The following construction sequences and procedures shall be observed:
2. The Contractor shall notify the Inspector not less than 48 hours in advance of any hydromulching, seeding, or sodding operation and shall not begin the work until areas prepared or designated for seeding have been approved.
3. Inspect subsoil for the presence of objectionable materials, such as rocks (2 inches in diameter and larger), concrete waste, building debris, weeds, grass or other material that would be detrimental to the growth of grasses.
4. Protect existing underground improvements from damage.
5. Cultivate to a depth of 3 inches in areas to receive hydromulch, seeding or sod.
6. If compaction is due to equipment, traffic or storage, cultivate to a depth of 6 inches, and apply herbicide as directed by manufacturer.
7. Remove any foreign or objectionable materials collected during cultivation.
8. Grade placement area to eliminate rough spots and low areas where ponding may occur.
9. Assure positive drainage away from all buildings. Maintain smooth, uniform grades.
10. Hydromulch seed or sod, area and weed control shall consist of killing all weeds and maintaining a weed free condition until completion of the project by applying herbicide as directed by the manufacturer.

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11. Before placement of hydromulch, seeds or sod, all areas shall be cultivated to a depth of 3 inches unless otherwise specified or ordered by the Engineer. Cultivation of the soil may be done by disc, spring tooth harrow, roto-tiler, or similar equipment.
12. This operation shall be done at right angles to the natural flow of water on the slopes.
13. The area shall then be rolled in two directions; the second shall be done at right angles to the first rolling.
14. Rake the area to make it smooth and level. Add soil where necessary or as directed by the Inspector.
15. The finished grade shall be 1 inch below all curbs, sidewalks, and/or other appurtenances.
16. Apply the fertilizer at the rate and mixture specified. The fertilizer shall be applied by an approved hand or mechanical method.
17. Roll the area in one direction.
18. Slurry for Hydromulch to be sprayed evenly in two intersecting directions with a hydraulic seeder.
19. Erect a barrier of stakes and strings, and post warning signs where necessary, or as directed by the Inspector.
20. Apply water as required to keep the mulch damp at all times throughout germination and initial growth period as determined by the Inspector.
21. Upon completion, all excess material shall be removed and disposed of off the project site at Contractor's expense.
22. **Guarantee and Lawn Established Period.** The guarantee and lawn established period shall begin immediately after the completion of the planting and shall start with the Provisional Acceptance and end with the Final Acceptance.
23. **Provisional Acceptance.** Upon completion of hydromulching, seeding or sodding and written request of Contractor, the Inspector will inspect all the work for Provisional Acceptance.
24. **Guarantee Period.** The guarantee period shall begin upon completion of the provisional acceptance. All plant materials shall be guaranteed by the Contractor for a period of sixty days (60) from the date of provisional acceptance, to be in good, healthy, and nourished condition. The exceptions are damages resulting from neglect by the property owner, abuse or damage by others, or unusual phenomena or incidents which are beyond the Contractor's control. During the lawn establishment period, it shall be the Contractor's responsibility to ensure the continuing healthy growth. This care shall include labor, water and material necessary to keep

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the project in a presentable condition, including but not limit to removal of litter, mowing, trimming, removal of grass clippings, edging, fertilization, insecticide and fungicide applications, weed control, and repair and reseeded any and all damaged areas.

Water application shall be accomplished each week from March through October. An even application of one inch minimum of water shall be required over all lawn areas weekly. The rate and frequency of water application may be changed, as directed by the Inspector, depending on weather, and soil conditions.

25. Replacement. The Contractor shall replace, without cost to SAWS, and as soon as weather conditions permit, all dead grassed areas not in a vigorous, thriving condition, as determined by the Inspector during and at the end of the guarantee period. Replacements shall be subject to all requirements stated in this specification. The Contractor shall make all necessary repairs to grades, grassed areas, and terrace paving required because of grass replacement at no cost to SAWS.

26. Final Inspection and Acceptance. At the end of the guarantee period and upon written request of the Contractor, the Inspector will inspect all guaranteed work for final acceptance. The written request shall be submitted to SAWS ten (10) days prior to the anticipated date of inspection.

Acceptance of hydromulching, seeded and sodded lawns as herein specified shall be based on a uniform stand of grass and a uniform grade at the time of final inspection. Area of two square feet or more that are bare or have a poor stand of grass and area not having a uniform grade for any cause before final inspection shall be regraded, hydromulched, seeded, and sodded, as specified at the Contractor's expense.

Upon completion by the Contractor of all repairs or renewals which may appear at that time to be necessary in the judgment of SAWS or its authorized representative, the final acceptance of the hydromulching, seeding and sodding will be issued.

103.5. MEASUREMENT: Measurement of acceptable Revegetation complete in place, shall be made by the square yard and only for those areas designated on the plans, or for other areas directed by the Inspector. Fertilizers, wood cellulose fibers, seeds, herbicide and water will not be measured for payment.

103.6. PAYMENT: "Revegetation" measured as provided above, will be paid for at the contract unit price bid per square yard, which price shall be full compensation for furnishing, hauling and placing all materials, for all fertilizer and water required and for all labor, tools, equipment and incidentals necessary to complete the work.

-End of Specification-