

SECTION 32 92 20

HYDRO-SEEDING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Preparation of subsoil.
- B. Placing topsoil.
- C. Seeding, mulching and fertilizing.
- D. Maintenance.

1.2 RELATED SECTIONS

- A. Section 31 23 00 - Excavation and Backfill: Topsoil
- B. Section 32 93 00 - Trees, Plants, and Ground Cover

1.3 REFERENCES

- A. FS O-F-241 - Fertilizers, Mixed, Commercial.

1.4 DEFINITIONS

- A. Weeds: Include Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.5 SUBMITTALS AT PROJECT CLOSEOUT

- A. Section 01 77 00 - Contract Closeout: Procedures for submittals.
- B. Maintenance Data: Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.6 QUALITY ASSURANCE

- A. Provide seed mixture in containers showing percentage of seed mix, germination percentage, year of production, net weight, date of packaging, and location of packaging.

1.7 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer, herbicide, and pesticide composition and application.

1.8 DELIVERY, STORAGE, AND PROTECTION

- A. Section 01 60 00 - Material and Equipment: Transport, handle, store, and protect products.
- B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

1.9 MAINTENANCE SERVICE

- A. Section 01 77 00 - Contract Closeout.
- B. Contractor to maintain seeded areas immediately after placement until grass is well established and exhibits a vigorous growing condition for one cutting. This shall include watering fertilizing, and weed control at regular intervals. Architect to determine if grass is well established and exhibits vigorous growth condition.

PART 2 PRODUCTS

2.1 SEED MIXTURE

- A. Seed Mixture as indicated below, unless noted otherwise on Civil drawings.
 - 1. Turf Type Fescue Grass: 8 pounds per 1000 square feet.
 - 2. Quick-Cover Annual Rye Grass: 3 - 4 pounds per 1000 square feet.
 - 3. During certain periods of the year, Annual Rye Grass may be deleted upon approval of a local A.N.L. A. certified nursery and Architect.

2.2 SOIL MATERIALS

- A. Topsoil: Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from drained site; free of subsoil, clay or impurities, plants, weeds.

2.3 ACCESSORIES

- A. Mulching Material: Cellulose fiber mulch at a rate of 2000 lbs per acre with a maximum of 50 lbs per 100 gallons of water.

- B. Fertilizer: FS O-F-241; as recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil to the following proportions: Nitrogen 13 percent, phosphoric acid 13 percent, soluble potash 13 percent.
- C. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.
- D. Herbicide: Type as recommended by local county agent.
- E. Erosion Fabric: Curlex Blankets, manufactured by American Excelsior Company or approved alternate.
- F. Stakes: Softwood lumber, chisel pointed.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that prepared soil base is ready to receive the work of this section.

3.2 PREPARATION OF SUBSOIL

- A. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- B. Remove foreign materials, weeds and undesirable plants and their roots. Remove contaminated subsoil.
- C. Scarify subsoil to a depth of 4 inches where topsoil is to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

3.3 PLACING TOPSOIL

- A. Spread topsoil to a minimum depth of 4 inches over area to be seeded. Rake until smooth.
- B. Place topsoil during dry weather and on dry unfrozen subgrade.
- C. Remove vegetable matter and foreign nonorganic material from topsoil while spreading.
- D. Grade topsoil to eliminate rough, low or soft areas, and to ensure positive drainage.

3.4 FERTILIZING

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of topsoil and prior to roller compaction.

- C. Do not apply fertilizer at same time or with same machine as will be used to apply seed.
- D. Mix thoroughly into upper 2 inches of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

3.5 PREPARATION OF SLURRY

- A. Slurry preparation shall take place on-site.
- B. Add water to tank with engine at half throttle.
- C. When water level has reached agitator shaft, establish good recirculation and add seed and chemical additive.
- D. Add wood pulp mulch after tank is at least one-third full of water.
- E. Open engine throttle to full speed when tank is half full of water.
- F. All wood pulp mulch shall be added by the time tank is 2/3 to 3/4 full.
- G. Spraying shall commence immediately. If seeding is delayed 1/2 - 2 hours, add an additional 50% of seed mix. If delay is longer than 2 hours, begin with new mixture.

3.6 APPLICATION OF SLURRY

- A. Spray area with uniform visible coat using green color of wood pulp as guide.
- B. Apply in a sweeping motion in an arched stream, allow wood fiber to spread at required rate per acre.
- C. Planting Season: Verify with a local A.N.L.A. certified nursery.

3.7 MAINTENANCE

- A. When seedlings are 1-1/2" high, apply 1/2 lb. of water soluble nitrogen per 1000 sq.ft. to stimulate rapid establishment and protect against weed invasion.
- B. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.
- C. Neatly trim edges and hand clip where necessary.
- D. Immediately remove clippings after mowing and trimming.
- E. Water to prevent grass and soil from drying out.

- F. Roll surface to remove minor depressions or irregularities.
- G. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- H. Immediately reseed areas which show bare spots.
- I. Protect seeded areas with warning signs during maintenance period.

3.8 EROSION

- A. If topsoil begins to erode before grass is established, redress to finish grades and re-seed.

3.9 SCHEDULE

- A. As indicated on drawings, and where disturbed by construction in areas not scheduled for sodding or planters.

END OF SECTION