

## **DIVISION 2**

### **SECTION 02920 – TURF SEED CONSTRUCTION**

#### **PART 1 - GENERAL**

##### **1.01 Work Included**

- A. The Contractor shall furnish all labor, materials, tools, equipment and perform all work and services necessary for irrigated turf seed construction in the quantities required. Furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a healthy, sound, and complete, craftsman-like installation. Work to include:
  - 1. Application of herbicides.
  - 2. Soil preparation.
  - 3. Fine grading of all planting areas.
  - 4. Seeding and mulch.
  - 5. Maintenance during establishment.

##### **1.02 Related Work**

- A. Tree Protection: Section 02122
- B. Irrigation Installation: Section 02810
- C. Sod Construction: Section 02950
- D. Planting Maintenance: Section 02970

##### **1.03 Submittals & Quality Assurance**

- A. Submit three copies of:
  - 1. Manufacturer's specifications and literature on all products;
  - 2. Manufacturer's tests (within 6 months of application) on supplied products;
  - 3. Complete materials list including quantities and description of materials.
- B. Summary of submittals from this section:
  - 1. Seed mix content.
  - 2. Soil amendment analysis.
  - 3. Mulch.
  - 4. Seed tags from bags.
- C. Provide at least one person who shall be present at all times during execution of this portion of the work and who shall be thoroughly familiar with the type of materials being installed and the best methods for their installation and who shall direct all work performed under this section.

##### **1.04 Inspections**

- A. Initial Inspection:

Contractor will inspect existing site conditions and note irregularities affecting the work of this section. Verify that grading operations have been satisfactorily completed and that top soil of adequate quantity and quality has been placed in all disturbed areas as specified. Verify that the areas to be revegetated are protected from concentrated runoff and sediment from adjacent areas.

Note any previous treatments to the areas such as temporary seeding or mulching and discuss with the City Representative how these treatments will affect permanent revegetation. Report all irregularities affecting work of this section to the City Representative before initiating work. When the Contractor begins work under this section, it implies acceptance of existing conditions.

**B. Substantial and Final Acceptance:**

1. Contractor shall notify City Representative prior to start of work. City Representative will monitor the work.
2. Upon completion of the seeding operations, the contractor shall notify the City Representative to review the work. If all work is acceptable, the City Representative shall record the date and issue a "Conditional Acceptance" certificate which states that the Contractor shall begin maintenance of all seeded areas as specified.
3. Seeded areas shall receive "Final Acceptance" provided a healthy, even colored, viable turf is established, free of weeds and undesirable grass species, disease and insects. Seeded areas shall meet the required coverage for seed establishment.

**1.05 Guarantee**

- A. Guarantee seeded areas against defects for a period of one growing season from the date of final acceptance.
- B. This guarantee will not be enforced should seeded area die due to vandalism, improper maintenance by Owner, lawn mower damage, or other circumstances beyond the control of the Contractor.
- C. Replace seeded turf when it is no longer in a satisfactory condition as determined by the Owner's Representative for the duration of the guarantee period.
- D. Areas seeded in the spring shall be inspected for required coverage the following fall no later than October. Areas seeded in the fall will be inspected October of the following year.

**PART 2 - MATERIALS**

**2.01 Herbicide**

- A. Round-Up

**2.02 Soil Amendment**

- A. Use compost or well rotted manure free from lumps, stones or other foreign matter. Do not use Colorado mountain peat, sphagnum peat is acceptable. Soil amendment must be free of mineral matter or chemical composition harmful to plant life and have the following properties:

Organic Matter: 35-40%  
pH: 7.4 to 8.5  
Salt: < 7 mmhos/cm

Submit test results prior to application. Apply at a rate of six cubic yards per 1,000 square feet in areas of high traffic and sports fields. See landscape plan for designated area.

**2.03 Seed**

- A. Seed shall be of the latest crop available and shall be certified seed with a PLS (pure live seed) rate no lower than 92%. Seed shall meet the requirements of Colorado Department of Agriculture Seed Laws, Chapter 35, Article 27. Seed shall be no greater than one year old. Seed which has become wet, moldy, or otherwise damaged in transit or in storage shall not be used. All seed shall be delivered in sealed bags showing weight, analysis, and vendor's name.

**1. Irrigated Turf Seed Mix: Dwarf Type Tall Fescue**

The seed mixture shall be a blend of four to five dwarf type tall fescue cultivars to be approved by the City Representative and Parks & Public Places Department. The seeding rate shall be 9 lbs. Per 1,000 square feet. The following list is representative of the desired mix.

Grande	35%
Crew Cut II	20%
Endeavor	20%
Olympic Gold	15%
Coronado Gold	10%

**2.04 Fertilizer**

**COMMERCIAL FERTILIZER CONTENT & APPLICATION RATE**

Commercial fertilizer (18 – 46 – 0)	Percent available by weight
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Nitrogen	18
Phosphorus	46
Potassium	0

Application rate of 242 lbs. per acre.

**2.05 Mulch**

- A. Clean Graminae (grass family) straw supplied from local area. Free of weed seeds and other matter that has not been specified in this section.

**2.06 Tackifier**

- A. Non toxic organic tackifier.

**PART 3 - EXECUTION**

**3.01 Site Preparation**

- A. Prepare areas as follows:
  1. Remove any existing vegetation not scheduled to remain. Apply Roundup herbicide to all weeds and undisturbed areas that shall be re-seeded. Allow herbicide to sit for 7 to 10 days before tilling or preparing soil for seed. Apply Roundup at manufacturer's recommended rate for vegetation type specified.
  2. Rip existing topsoil to a minimum depth of eight (8) inches in one direction using an agricultural ripper with tines spaced at no greater than 18 inches. Areas adjacent to walks, structures, curbs, etc., where the use of large mechanical equipment is difficult, shall be worked with smaller equipment or by hand.
  3. Place soil amendment at a rate of six (6) cubic yards per 1,000 square feet in areas to be irrigated as indicated on plans.
  4. Till all areas to be planted to a depth of six (6) inches.
  5. In tree protection areas, the topsoil shall be worked by hand to a depth of 3 inches.
  6. Remove all rubble, stones, plant material and extraneous material over 1½ inches in diameter from the site.
  7. Apply pre-planting fertilizer specified in Part 2 of this Section.

8. Restore fine grade with float drag to remove irregularities resulting from tilling operations. Float drag in two directions. Coordinate restoration of fine grade to establish the vegetation subgrade at one inch below adjacent paved surfaces. Match grade at property lines and work-limit lines.
- B. Remove any additional stones over 1½ inches that have come to the surface. Perform drainage test by applying water with the irrigation system. All grades shall provide for run-off of water without low spots or pockets. Do not plant until the finished grade is reviewed by the City Representative. This review does not reduce Contractor's responsibility to provide a finished product that drains properly.

### **3.02 Seed Application**

- A. Seed areas indicated on drawings and areas disturbed by construction.
- B. Selection of the time of seeding shall be Contractor's responsibility, consistent with germination and erosion control requirements. Optimal seeding time for Tall Fescue is mid May through early September.
- C. Re-work previously prepared areas that have become compacted or damaged by rains or traffic.
- D. Apply by drilling, drill in a minimum of two directions at right angles to one another. Broadcast or hydro seed in areas that are inaccessible or too steep to drill or as indicated on plans.
- E. Do not drill or sow during windy weather or when ground is frozen or untillable.
- F. Cover seed to depth of 1/4 inch by raking or dragging.
- G. Firm seeded areas with a roller weighing maximum of 100 lbs. per foot of width.

### **3.03 Hydraulic Seeding and Mulching Option**

- A. Where areas to be seeded are too steep or inaccessible for equipment, Contractor shall seed, fertilize and or mulch by hydraulic spray application. Seed is required at double the rate specified and wood cellulose fiber mulch is required to be applied at a rate of one ton per acre. If hydraulic seeding is used with drill seeding then use the specified application rate.
- B. Combine seed with water to provide a slurry. Perform hydraulic application in such a manner that the liquid carrier will uniformly distribute the material over the entire area to be seeded at rates not less than specified. Do not compact hydraulically seeded areas following application. If seed and mulch are applied in a single application the rate of seed application shall be doubled.

### **3.04 Maintenance**

- A. Seed Establishment Period:
  1. Water seeded areas as needed, minimum of two times per day, until grass is established. Water so that no erosion or movement of seed or mulch occurs. Hand water as necessary to prevent movement of seed.
  2. Seed establishment period shall begin upon completion of seeding operations and continue through the first mowing or until the turf is established.
  3. Post "keep off the grass" signs until turf is established.
  4. Maintain seeded areas until all the grass is established and has been mowed once. Maintenance shall include watering, fertilizing and herbicide weed control as necessary. Do not apply herbicide before the first mowing, do not mow before the majority of seedlings have three leaf blades.
  5. After germination or turf establishment remove any turf that has germinated within the baseball infield. Establish a smooth arc along the edge of the infield and either rototill or spray any seed that has germinated.

6. Mowing: Mow when grass is over four (4) inches. Mow at a height of three (3) inches. Do not mow more than one third (1/3) height of grass. Reduce irrigation prior to mowing to prevent damage to turf.
7. Required coverage for grass seed areas shall be twenty five (25) viable live seedlings of the species specified per square foot as measured from five (5) feet directly overhead. Determination of required coverage will be based on a random sampling of the entire project area, and shall consist of a minimum of five samples, each two square feet in area. Bare spots are defined as those areas larger than one square foot which do not meet the required coverage. After the inspection it is the Contractor's responsibility to perform the required maintenance within one week to insure a healthy established seeding condition.
8. The total area occupied by bare spots larger than 0.5 square feet must not exceed ten percent (10%) of the total seeded area. Maximum single bare spot size is one square foot. All seeded grass areas which do not meet the satisfactory stand of growth qualification shall be reseeded and hydromulched.
9. Once the maintenance periods are completed and seed establishment is accepted, the City Representative shall issue a written notice of Final Acceptance. The guarantee period extends for one full growing season after Final Acceptance.

### **3.05 Reseeding and Repair**

- A. Reseed areas where there is not a satisfactory stand of grass at the end of establishment period. Scratch the surface to prepare seed bed and over-seed with drill seeder or hydromulch.
- B. Reseed areas that have been damaged or disturbed by the Contractor's operation according to these specifications.
- C. After one growing season, there shall be no visual difference between seed and healthy sod in irrigated areas.

**END OF SECTION**