SECTION 32 9200 – TURF AND NATIVE/ADAPTIVE PLANTINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to this section.
   B. Comply with most current edition of the Northwestern University Design Standards.

1.2 SUMMARY
   A. Provide all labor, materials and equipment as necessary to complete all work as indicated on the Drawings and specified herein. Review specific project requirements with NU during the design phase.
   B. This Section includes:
      1. Topsoil.
      2. Fertilizer.
      3. Seed.
      4. Mulch.
      5. Sod.

1.3 SUBMITTALS
   A. Quality Assurance/Control Submittals: Supplier's certified analysis for each seed and fertilizer mixture required.

1.4 DELIVERY, STORAGE AND HANDLING
   A. Deliver materials in original, unbroken, brand marked containers or wrapping indicating weight, analysis and manufacturer's name.
   B. Handle and store materials in a manner which will prevent deterioration, damage, contamination with foreign matter, damage by weather or elements, and in accordance with manufacturer's directions.
   C. Reject damaged, deteriorated or contaminated material shall be immediately removed from the site. Replace rejected materials with new materials at no additional cost to NU.

1.5 PROJECT CONDITIONS
   A. Contractor shall obtain and submit copies to Northwestern University all necessary related city and environmental permits (e.g. irrigation – water department permits; use of city hydrants - city hydrant permit, etc.).
PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil:
   1. Natural loam topsoil.
   2. Uniform quality.
   3. Free of undesirable material.
   4. Organic content greater than 6% by weight.
   5. Acidity between pH 5.0 and pH 8.0.

B. Fertilizer:
   1. Dry Fertilizer: Ready mixed granular material containing equal amounts by weight of
      available nitrogen (N), readily available phosphoric acid (P₂O₅) and total available
      potash (K₂O), (12-12-12).
   2. Liquid Fertilizer for Hydroseed: 16-32-4 containing no chlorine.
   3. Minimum 40% filler by weight.

C. Seed:
   1. Uniform mixtures composed of seed of the following proportions by weight:
      a. Drain Side Slopes, Spoil Banks, and Other Disturbed Areas: 35% creeping red
         fescue, 10% Kentucky bluegrass, 2% red top, 35% tall fescue, 3% timothy, 15%
         birdsfoot trefoil.
      b. Lawns: 30% perennial rye grass, 30% Kentucky bluegrass, 40% creeping red
         fescue.
   2. Legumes shall be inoculated with the proper nitrogen fixing bacteria within 24 hours prior
      to seeding.
   3. Germination of seeds shall be 80% minimum.
   4. Purity of seeds shall be 90% minimum.

D. Mulch:
   1. Anchoring Material for Small Grain Mulch:
      a. Netting:
         1) Biodegradable.
         2) Openings not to exceed 1-1/2 inches x 2 inches.
         3) Minimum Roll Width: 35 inches.
         4) Anchoring Staples or Pins: [Steel wire not permitted] [Wood pegs] [or
            No. 11 steel wire] at least 6 inches long.
   2. Hydromulch:
      a. Slurry: Minimum 60% wood fiber mulch with remaining being recycled cellulose
         fibers.
      b. Tackifier:
PART 3 - EXECUTION

3.1 TOPSOIL

A. Lawns:
   1. Comply with local requirements.

B. Perennials:
   1. Comply with local requirements.

C. Shrubs:
   1. Comply with local requirements.

D. Other Areas: Spread existing topsoil.

3.2 FERTILIZING

A. Location:
   1. Leveled spoil.
   2. Other disturbed areas.
   3. No fertilizer shall be used with native seeding.

B. Dry Fertilizer:
   1. Broadcast on surface as first step in seeding process.
   2. Apply with seeding if drilled.
   3. Apply uniformly.
   4. Application Rate: Equivalent to $\frac{240}{500}$ pounds per acre of 12-12-12.

C. Hydroseeding:
   1. Apply fertilizer with seeding.
   2. Application Rate: Equivalent to 272 pounds per acre of 16-32-4.

3.3 LAYING SOD

A. As specified by local requirements.
3.4 SEEDING

A. Scheduling:
   1. Within [30 days] [7 days] [24 hours] from the time the area was first disturbed.
   2. Channel Banks: Within 24 hours from the time the area was first disturbed.
   3. Seasonal Limitations:
      a. [April 20] [May 1] through November 1.
      b. Soil temperatures shall be between 50ºF-65ºF.

B. Sowing:
   1. Sow the seed following or in conjunction with the fertilizer and while the seed bed is in a friable condition.
   2. Do not sow seed through mulch.
   3. Application Rate:
      a. Lawns: Sow seed at a minimum rate of 100 pounds per acre.
      b. Ditch Banks, Spoil Berms, and Other Areas: Sow seed a minimum rate of 56 pounds per acre.

C. Method:
   1. Broadcast: Do not seed when wind velocity exceeds 5 miles per hour.
   2. Mechanical drills.
   3. Hydroseeder:
      a. Use only equipment specifically designed for hydraulic seeding application.
      b. Mix seed, fertilizer and pulverized mulch in water until uniformly blended into homogeneous slurry.
      c. Continue mixing during application.
      d. [Native seed must be applied with water only for direct seed-soil contact, not with pulverized mulch.]
      e. [Apply pulverized mulch after native seed is applied.]

D. Inspection:
   1. Visually inspect for uniform distribution.
   2. Reseed areas as required to establish a uniform and stable stand of grass.

E. Finishing: Incorporate seed into the upper 1/2-inch of soil.

3.5 MULCHING

A. Small Grain Mulch:
   1. Application:
      a. Immediately after seeding.
      b. Uniform distribution.
      c. Allow sunlight to penetrate mulch.
2. Application Rate:
   a. Two tons per acre (2-1/2 bales per 1000 square feet).
   b. Three tons per acre for dormant seeding.
   c. One ton per acre (1-1/4 bales per 1,000 square feet) for native seeding.

3. Anchoring:
   b. Slopes 3:1 (H:V) or Steeper for Netting: Install in accordance with manufacturer's instructions.

B. Hydromulch:
   1. Apply with hydroseed.
   2. Application Rate: 1,250 pounds per acre.
   3. Apply after native seed has been applied without mulch in slurry.

3.6 MAINTENANCE

A. Reseed, resod, refertilize, remulch, or regrade as necessary to establish a uniform and stable grassed area.

END OF SECTION 32 9200