



**ADDENDUM #4**  
**REQUEST FOR BID**  
**No. 2019-017**

---

**Effective:** April 30, 2019  
**Project:** Construction of Discovery Park  
**Issued By:** Melanie Brown, Project Manager  
Department of Public Works  
800 Rabbitt Road  
Gaithersburg, Maryland 20878

---

This addendum (“Addendum”) is incorporated into and made part of the above Request for Bids (“Solicitation”). The purpose of this Addendum is to revise Specification sections:

PLAYGROUND PROTECTIVE SURFACING	32 18 16.13 - 1 to 32 18 16.13 - 4
BOARD FENCING	32 31 12 - 1 to 32 31 12 - 2
SITE FURNISHINGS	32 33 00 - 1 to 32 33 00 - 6
TURF AND GRASSES	32 92 00 - 1 to 32 92 00 - 8

As such, the Solicitation is hereby amended with the following revised Specification pages:

## SECTION 32 18 16.13 – PLAYGROUND PROTECTIVE SURFACING

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section Includes:
  - 1. Engineered Wood Fiber Mulch
  - 2. Poured-in-Place Play Surface
  - 3. Flexible Pavement

## 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each playground surface system, include materials, plans, cross sections, drainage and installation details.
- C. Samples: For each exposed product and for each color and texture specified.

## 1.3 INFORMATIONAL SUBMITTALS

- A. Material certificates.
- B. Material test reports.
- C. Product certificates.
- D. Product test reports.
- E. Field quality-control reports.
- F. Warranty: Sample of special warranty.

## 1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

- B. Standards and Guidelines: Comply with CPSC No. 325, "Handbook for Public Playground Safety"; ASTM F 1292; and ASTM F 1487.

## 1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of playground surface system that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion or Manufacturer's recommendation, whichever is longer.

## PART 2 - PRODUCTS

### 2.1 ENGINEERED WOOD FIBER MULCH

- A. Surface System: Poured-in-place, single-layer system. Provide manufacturer's standard thickness as required for overall thickness indicated, tested for impact attenuation according to ASTM F 1292 and for accessibility according to ASTM F 1951.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Basis of Design product: GameTime - GT Impax, Model: EWF 1. Playground surface system installation shall be per manufacturer's recommendations. 150 PlayCore Drive SE – Fort Payne, AL 35967. (800) 235-2440.
    - b. OR approved equal by Landscape Architect.
  - 2. Product is manufactured of size-controlled hardwoods which average 1"-2" in length and contain a maximum of 15% fines to aid in compaction.
- B. Leveling: raking is required to maintain depths approved by playground surface system manufacturer.

### 2.2 POURED-IN-PLACE PLAY SURFACE

- A. Surface System: Poured-in-place, single-layer system. Provide manufacturer's standard thickness as required for overall thickness indicated, tested for impact attenuation according to ASTM F 1292 and for accessibility according to ASTM F 1951.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Basis of Design product: Surface America – PlayBond. Playground surface system installation shall be per manufacturer's recommendations. PO Box 157 – Williamsville, NY 14231. (800) 999-0555.
    - b. OR approved equal by Landscape Architect.

2. 1. PlayBound Poured-In-Place Primer:
    - a. Material: Urethane.
  3. 2. PlayBound Poured-in-Place Basemat:
    - a. Material: Blend of 100% recycled SBR (styrene butadiene rubber) and urethane.
    - b. Thickness: 3" (76 mm) for 8' critical fall height.
    - c. Formulation Components: Blend of strand and granular material.
  4. PlayBound Poured-In-Place Top Surface:
    - a. Material: Blend of recycled EPDM (ethylene propylene diene monomer) rubber and aromatic or aliphatic urethane binder.
    - b. Thickness: Nominal 1/2" (12.7 mm), minimum 3/8" (9.5 mm), maximum 5/8" (15.9 mm).
    - c. Color: Brown.
    - d. Dry Static Coefficient of Friction (ASTM D2047): 1.0.
    - e. Wet Static Coefficient of Friction (ASTM D2047): 0.9.
    - f. Dry Skid Resistance (ASTM E303): 89.
    - g. Wet Skid Resistance (ASTM E303): 57.
- B. Leveling and Patching Material: Portland cement-based grout or epoxy- or polyurethane-based formulation suitable for exterior use and approved by playground surface system manufacturer.

## 2.3 FLEXIBLE PAVEMENT

- A. Surface System: For all trails, GaGa Pit and Four-Square court
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Basis of Design Product: Flexible, porous paving KBI Flexi-Pave HD2000; KB Industries, Inc., 4600 140<sup>th</sup> Ave. Suite 200, Clearwater, FL 33732; 727-723-3300.
    - b. OR approved equal by Landscape Architect.
    - c. Material: Recycled passenger tires, crushed stone, and a urethane binding agent; all components, materials and compounds shall be 100% sourced and manufactured in the USA.
    - d. Manufacturer shall have at least 10 years' experience with similar applications and installations in the USA.
    - e. Product shall meet or exceed all current and applicable ASTM and CPSC standards.

## EXECUTION

### 2.4 INSTALLATION



- A. Hard-Surface Substrates (including stone subbase): As specified on contract documents.

- B. Comply with playground surface system manufacturer's written installation instructions. Install playground surface system over area, thickness shall be as specified by the manufacturer based on the fall height for the installed play equipment.
- C. Seamless Surface: Mix and apply components of playground surface system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface and impact-attenuating system of total thickness indicated.
  - 1. Edge Treatment: As per manufacturers recommendations.
- D. Engineered Wood Fiber Mulch: Place Engineered Wood Fiber Mulch surface as specified on contract documents.
- E. Uniformly grade Engineered Wood Fiber Mulch surface evenly free from irregular surface changes as indicated. Hand rake to a smooth finished surface and to required elevations.

## 2.5 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Testing Services: Testing and inspecting of completed applications of playground surface system shall take place according to ASTM F 1292.
  - 1. A CPSI certified inspector to approve and submit a field report to Landscape Architect to verify that installation of all playground safety surfacing is installed to all current codes and standards.
- C. Remove and replace applications of playground surface system where test results indicate that it does not comply with requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with requirements.

END OF SECTION

## SECTION 32 31 12 – BOARD FENCING

## 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.

## 1.2 SUMMARY

- A. Section Includes:
  - 1. Board Fencing

## 1.3 ACTION SUBMITTALS

- A. Shop Drawings. Provide full shop drawings for approval to include all relevant dimensions, connections, installation methods, and materials, including a full elevation of the fence line with accurate grade information.
- B. Samples: For each exposed product.

## 1.4 INFORMATIONAL SUBMITTALS

- A. Material certificates.
- B. Material test reports.
- C. Product certificates.
- D. Product test reports.
- E. Field quality-control reports.
- F. Warranty: Sample of special warranty.

## 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Manuals.

## PART 2 - PRODUCTS

### 2.1 BOARDS

- A. 3-boards, evenly spaced.
- B. Lumber will be Cedar.
- C. Each board will be bolted to posts in the same location.

### 2.2 POSTS

- A. 6" square Cedar posts.
- B. 78-inch total height.
- C. Posts will be buried 30 inches into the ground.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Comply with Construction Detail unless more stringent requirements are indicated.
- B. Unless otherwise indicated, install fencing after landscaping and paving have been completed.
- C. Install fencing level, plumb, true, and at locations indicated on Drawings.



- D. Post Setting: Auger holes to depth shown on contract documents. Place gravel at base of hole to shown depth and compact. Place posts, backfill and compact. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations.

END OF SECTION

## SECTION 32 33 00 - SITE FURNISHINGS

## 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.

## 1.2 SUMMARY

## A. Section Includes:

1. Picnic Table
2. Picnic Shelter
3. Bike Rack
4. Trash Receptacle
5. Dog Waste Station with Two-Hole Roll Bag Dispenser
6. Signs
7. Bench
8. Trail Marker
9. Boulder

## B. Related Requirements:

1. Section 32 13 13 Concrete Paving.

## 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.
- C. Samples for Initial Selection: For units with factory-applied finishes.
- D. Samples for Verification: For each type of exposed finish, not less than 6-inch long linear components and 4-inch square sheet components.
- E. Product Schedule: For site furnishings. Use same designations indicated on Drawings.

## 1.4 INFORMATIONAL SUBMITTALS

- A. Material certificates.
- B. Material test reports.



- C. Product certificates.
- D. Product test reports.
- E. Field quality-control reports.
- F. Warranty: Sample of special warranty.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For site furnishings to include in maintenance manuals.

#### 1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Trash Receptacle Inner Containers: 2 full-size units for each size indicated, each unit.
  - 2. Anchors: As indicated per manufacturer.

### PART 2 - PRODUCTS

#### 2.1 PICNIC TABLE (Basis of Design product)



- A. Belson Outdoors Model#: 238HS-V6. 111 North River Road, North Aurora, IL 60542 (800)323-5664
  - 1. Locate as shown on plans.
  - 2. Surface mount per manufacturer's specifications.
  - 3. Material: All steel, heavy duty
  - 4. Color: Top/Seat - green; Frame - brown.
  - 5. Size: 6' length.
- B. OR approved equal. All approved equals shall be authorized only by the Landscape Architect and approved by the owner. At a minimum, approved equals must have the same type and quantity of components, be of equal or higher quality than what is specified, shall include all accessibility and safety components as the specified product, and have the same or better warranty.

#### 2.2 PICNIC SHELTER (Basis of Design product)

- A. Polygon Model#: SUN SHELTER 8X9 SSG-8X9. 4240 N. 136th AVE, HOLLAND, MI 49424. (616)399-1963
  - 1. Locate as shown on plans.
  - 2. Surface mount per manufacturer's specifications.
  - 3. Color:
    - a. Frame: Poli-5000 finish, color Barkwood.
    - b. Roof: 24 GA., steel, Kynar-500 Evergreen

4. Material: Powder coated Steel. Steel columns and frame.
5. Size: 8'x9'

B. OR approved equal. All approved equals shall be authorized only by the Landscape Architect and approved by the owner. At a minimum, approved equals must have the same type and quantity of components, be of equal or higher quality than what is specified, shall include all accessibility and safety components as the specified product, and have the same or better warranty.

### 2.3 BIKE RACK (Basis of Design product)

A. Secure Site Design LLC (a Victor Stanley Affiliate) Model #: BRHS-101 Cycle Sentry Series. P.O. Box 307, Dunkirk, MD 20754 (888)268-4726.

1. Locate as shown on plans.
2. Surface mount per manufacturer's specifications.
3. Color: Tavern Square Green, powder coat, selected from manufacturer's standard.
4. Material: 2.375 in OD Tubular Steel Pipe.

B. OR approved equal. All approved equals shall be authorized only by the Landscape Architect and approved by the owner. At a minimum, approved equals must have the same type and quantity of components, be of equal or higher quality than what is specified, shall include all accessibility and safety components as the specified product, and have the same or better warranty.

### 2.4 TRASH RECEPTACLE (Basis of Design product)

A. Victor Stanley Model #: SD-42 Ironsites Series. P.O. Box 307, Dunkirk, MD 20754 (888)268-4726.

1. Locate as shown on plans.
2. Surface mount per manufacturer's specifications.
3. Color: Black, selected from manufacturer's standard.
4. Rain bonnet Lid and VS Relay sensors

B. OR approved equal. All approved equals shall be authorized only by the Landscape Architect and approved by the owner. At a minimum, approved equals must have the same type and quantity of components, be of equal or higher quality than what is specified, shall include all accessibility and safety components as the specified product, and have the same or better warranty.

### 2.5 RECYCLING RECEPTACLE (Basis of Design product)

A. Victor Stanley Model #: SD-42 Ironsites Series. P.O. Box 307, Dunkirk, MD 20754 (888)268-4726.

1. Locate as shown on plans.
2. Surface mount per manufacturer's specifications.
3. Color: Forest Green, selected from manufacturer's standard.
4. Rain bonnet Lid and VS Relay sensors

- B. OR approved equal. All approved equals shall be authorized only by the Landscape Architect and approved by the owner. At a minimum, approved equals must have the same type and quantity of components, be of equal or higher quality than what is specified, shall include all accessibility and safety components as the specified product, and have the same or better warranty.
- 2.6 DOG WASTE STATION WITH TWO-HOLE ROLL BAG DISPENSER (Basis of Design product)
- A. PetWasteCo Model #: PWC-019. 12316 World Trade Drive Suite 102, San Diego, CA 92128. (800)738-7940.
1. Locate as shown on plans.
  2. Surface mount per manufacturer's specifications.
  3. Size: 8-foot post, 12" x 72".
  4. Color: Tavern Square Green, powder coat, selected from manufacturer's standard.
- B. OR approved equal. All approved equals shall be authorized only by the Landscape Architect and approved by the owner. At a minimum, approved equals must have the same type and quantity of components, be of equal or higher quality than what is specified, shall include all accessibility and safety components as the specified product, and have the same or better warranty.
- 2.7 PARK INFORMATION SIGN (Basis of Design product)
- A. Sign, frame and cantilever exhibit base. BEST-EXHIBITS, Division of DRM DIVERSAFAB; [www.BEST-EXFAB.COM](http://www.BEST-EXFAB.COM)
1. Two locations as shown on the plans.
  2. In-ground mount.
  3. Size: 4" square, 30" Ht. posts; graphic panel at 30-degree angle on post; frame sized to fit graphic panel.
  4. High resolution graphic to be provided by City of Gaithersburg.
  5. Material: Frame constructed from aluminum extrusion with welded aluminum back plate; standard powder coat black.
- 2.8 SIGN (FOREST CONSERVATION SIGN AND MEADOW SIGN)
- A. Sign and Post.
1. Location shown on plans.
  2. Size: Noted on plan details
  3. In-ground mount, shown on detail
  4. High Resolution graphic to be provided by City of Gaithersburg
  5. Material: Steel Plate and Post, powder coat finish
  6. Color: Green post

## 2.9 BENCH (Basis of Design product)

- A. Victor Stanley Model #RB-28 Steelsites RB Collection P.O. Box 307, Dunkirk, MD 20754 (888)268-4726.
1. Locate as shown on plans.
  2. Surface mount per manufacturer's specifications.
  3. Color: Black, selected from manufacturer's standard.

## 2.10 TRAIL MARKER (Basis of Design product)

- A. Baldwin Design Works Flush Mount Trail Marker 85 Kelli Clark Ct. Cartersville, GA 30121 (404)518-7688
1. Inground mounted, Top to be flush with trail surfacing, refer to detail
  2. Locate Start of trail and every 1/10 mile on main trail loop facing going counter - clockwise.
  3. Color: To be determined by Landscape Architect for approval.
  4. Font and Design to be approved by Landscape Architect.

## 2.11 BOULDER

- A. Contractor to select and send Landscape Architect photos and dimensions of boulders for approval.
1. Size: Maximum 36" Ht. above ground, at least 18" below ground, Width and shape varies to encourage different dimensions.
  2. Finish: Weathered, sharp edges to be rounded off
  3. Color: Grey

## 2.12 FABRICATION

- A. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.
- B. Welded Connections: Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended, so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.
- C. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, splinters, and sharpness; all edges and ends rolled, rounded, or capped.
- D. Factory Assembly: Factory assemble components to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

## 2.13 GENERAL FINISH REQUIREMENTS

- A. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.
- B. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.
- C. Install site furnishings level, plumb, true, and at locations indicated on Drawings.

END OF SECTION

## SECTION 32 92 00 – TURF AND GRASSES

## 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.

## 1.2 SUMMARY

- A. Section Includes:
  - 1. Seeding
  - 2. Hydroseeding
- B. Related Requirements:
  - 1. "PLANTS" for trees, shrubs, ground covers, and other plants as well as border edgings and mow strips.

## 1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- D. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

## 1.4 PRE-INSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For landscape Installer.
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, 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.
  - 1. Certification of each seed mixture for turfgrass. Include identification of source and name and telephone number of the supplier.
- C. Product Certificates: For fertilizers, from manufacturer.
- D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required maintenance periods.

### 1.7 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.
  - 1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
  - 2. Experience: Five years' experience in turf installation.
  - 3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
  - 4. Personnel Certifications: Installer's field supervisor personnel assigned to the Work shall have certification in one of the following categories from the Professional Landcare Network:
    - a. Landscape Industry Certified Technician - Exterior.
    - b. Landscape Industry Certified Lawncare Manager.
    - c. Landscape Industry Certified Lawncare Technician.
  - 5. Pesticide Applicator: State licensed, commercial.

### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.
- B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.

#### 1.9 FIELD CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.
1. Spring Planting: April 1 – June 1
  2. Fall Planting: September 1 – October 31
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

### PART 2 - PRODUCTS

#### 2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species:
1. Quality: State-certified seed of grass species as listed below for solar exposure.
  2. Quality: Seed of grass species as listed below for solar exposure, with not less than 85 percent germination, not less than 95 percent pure seed, and not more than 0.5 percent weed seed:
  3. Full Sun: Kentucky bluegrass (*Poa pratensis*), a minimum of three cultivars.
  4. Sun and Partial Shade: Proportioned by weight as follows:
    - a. 20 percent Kentucky bluegrass (*Poa pratensis*).
    - b. 70 percent chewings red fescue (*Festuca rubra* variety).
    - c. 10 percent perennial ryegrass (*Lolium perenne*).
    - d. 10 percent redtop (*Agrostis alba*).
  5. Shade: Proportioned by weight as follows:
    - a. 50 percent chewings red fescue (*Festuca rubra* variety).
    - b. 35 percent rough bluegrass (*Poa trivialis*).
    - c. 15 percent redtop (*Agrostis alba*).



## 2.2 FERTILIZERS

- A. 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: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.
- B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
  - 1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
  - 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

## 2.3 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- B. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.
- C. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

## 2.4 PESTICIDES

- A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

## 2.5 EROSION-CONTROL MATERIALS

- A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches (150 mm) long.

- B. Erosion-Control Fiber Mesh: Biodegradable burlap or spun-coir mesh, a minimum of 0.92 lb/sq. yd. (0.5 kg/sq. m), with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches (150 mm) long.



## 2.6 LANDSCAPE EDGING (Basic of Design Product)

- A. Col-met Model #: 1007-6
1. Locate along edge of seeded areas and poured-in-place safety surfacing and edge of seeded areas and wood fiber mulch.
  2. Install per manufacturer's specifications.
  3. Material: Black powder coat galvanized steel.
  4. Size: 10'x3/16"x6"
  5. Stake Size: 16" stakes.
- B. OR approved equal. All approved equals shall be authorized only by the Landscape Architect and approved by the owner. At a minimum, approved equals must have the same type and quantity of components, be of equal or higher quality than what is specified, shall include all accessibility and safety components as the specified product, and have the same or better warranty.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.
1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
  2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
  3. Uniformly moisten excessively dry soil that is not workable, or which is dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Landscape Architect and replace with new planting soil.

### 3.2 PREPARATION

- A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
1. Protect adjacent and adjoining areas from hydroseeding and hydro mulching overspray.
  2. Protect grade stakes set by others until directed to remove them.

- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

### 3.3 TURF AREA PREPARATION

- A. Placing Planting Soil: Place manufactured planting soil in seeded areas in place 4: deep over exposed subgrade.
  - 1. Reduce elevation of planting soil to allow for soil thickness of sod.
- B. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- C. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

### 3.4 SEEDING

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph (8 km/h).
  - 1. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
  - 2. Do not use wet seed or seed that is moldy or otherwise damaged.
  - 3. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- B. Sow turf seed at a total rate at manufacturer's recommended rates.
- C. Rake seed lightly into top 1/8 inch (3 mm) of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre (42 kg/92.9 sq. m) to form a continuous blanket 1-1/2 inches (38 mm) in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.
  - 1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
  - 2. Bond straw mulch by spraying with asphalt emulsion at a rate of 10 to 13 gal./1000 sq. ft. (38 to 49 L/92.9 sq. m). Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.

### 3.5 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, slow-release fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
  - 1. Mix slurry with nonasphaltic tackifier.
  - 2. Spray-apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre (15.6-kg/92.9

sq. m) dry weight, and seed component is deposited at not less than the specified seed-sowing rate.

### 3.6 TURF MAINTENANCE

- A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
  2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
  3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
- B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches (100 mm).
1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
  2. Water turf with fine spray at a minimum rate of 1 inch (25 mm) per week unless rainfall precipitation is adequate.
- C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowing. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowing to maintain the following grass height:
1. Mow turf-type tall fescue to a height of 2 to 3 inches (50 to 75 mm).

### 3.7 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Architect:
1. Satisfactory Seeded Turf: 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. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches (125 by 125 mm).
- B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

### 3.8 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents according to requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
- B. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

### 3.9 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.
- C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- D. Remove nondegradable erosion-control measures after grass establishment period.

### 3.10 FINAL ACCEPTANCE

- A. Contractor is responsible for maintaining turf seeding until final completion. At that time, the owner becomes responsible for maintenance of the turf seeding.

### 3.11 MAINTENANCE SERVICE

- A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" Article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:
  - 1. Seeded Turf: until Final Acceptance
    - a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

END OF SECTION