

# **ATTACHMENT “A”**

## **SPECIAL PROVISIONS AND SPECIAL SPECIFICATIONS TO CITY OF AUSTIN STANDARD SPECIFICATIONS**

**(26 PAGES INCLUDING COVER PAGE)**

**SPECIAL PROVISION TO  
Standard Specification Item No. 601S Salvaging and Placing Topsoil  
(Version 09-01-11)**

These special provisions serve to modify, add to, and/or delete from the City of Austin Standard Technical Specification Item No. 601S: Salvaging and Placing Topsoil, dated 9/1/2011, incorporated into this Project Manual. Any item, paragraph, article, or work contained therein unless specifically modified, added to or deleted herein shall apply where applicable.

**Article 601S.1 Description**

**Add/revise** the following sentences to the first paragraph:  
*(Changes to the paragraph are underlined)*

This item shall govern the salvage, removal (only on direction of owner/engineer), storage and placement of existing and/or approved topsoil ...

To restore ecological structure to a stream restoration project, the goal is to salvage and stockpile existing soil to preserve its original quantity and quality. Salvaged soil may require amendment depending on results of a soil analysis. Amendment will be specified per SP-606S.

Soil preparation methods will be subsidiary to the applicable sod, seed, or planting specifications.

**Article 601S.2 Submittals**

**Delete** the existing paragraph and **Add** the following:

The submittal requirements of this specification item shall include the test results and soil classification necessary for approval of material as suitable topsoil, including the following:

- A. Activities Before Construction
  1. Preconstruction meeting to discuss the soil striping and stockpiling, and reinstallation of soils.
  
- B. Submittals Required During Construction
  1. Delivery tickets to indicate quantities of all soil amendments recommended by the soil analysis, including compost delivered to the site (reference SP-606S).
  2. Topsoil stockpiles should be monitored for ammonium buildup (soil test) and temperature rise (above 80°) using a soil thermometer. If either of these two indicators is observed, the pile should be broken down or turned to halt the decomposition process.
  3. Soil test shall be done after stockpiled soil is in place and has been amended to ensure sufficient amendment per recommendations of soil test.
  
- C. Activities During Construction
  1. Landscape Architect to verify proper excavation and stockpiling of topsoil and other materials.
  2. After rough grading Landscape Architect to inspect subsoil and subgrade areas to ensure:
    - (a) they are free of debris;
    - (b) Proper compaction rates are met;
    - (c) Subgrade is excavated to proper depth and to proper slopes per grading plans;
    - (d) Scalloped per Figure 1.

3. During topsoil placement Landscape Architect to inspect for:
  - (a) Soil placement procedures: proper depths, layering, and transitioning;
  - (b) Proper compaction;
  - (c) Proper amendment type and procedures.

### **Article 601S.3 Materials**

*(Changes to the paragraph are underlined or stricken)*

**Delete** the following from Item **A. Topsoil, 1:**

~~The topsoil shall be composed of 4 parts of soil mixed with 1 part compost, by volume. The compost shall meet TxDOT specification Item 161. The landscape-grade soil shall be locally available native soil that meets the following specifications in SS-612.~~ **Delete the rest of the section, up to and including the “Textural Class” table. The last two bullet points following the table shall remain.**

### **Article 601S.5 Construction Methods**

**Add** the following:

Topsoil Salvage and Stockpiling:

1. Pre-salvage vegetation removal
  - a. Existing vegetation should be mowed short and scalped to remove as much vegetation as possible while leaving as much salvageable soil as possible.
2. Timing
  - a. It is best not to undertake topsoil salvage when the soil contains excessive moisture; optimal moisture content is 10% to 15%.
3. Handling
  - a. To preserve overall quality of the soil and preclude compaction, minimize vehicular traffic on soils to be stripped. Keep vehicular and pedestrian traffic off soil stockpiles. Loaders shall load and unload from the bottom of the pile.
  - b. Topsoil Stockpiles shall be clearly labeled with signs on site.
  - c. Topsoil stockpiles shall be monitored for ammonium buildup and temperature rise.
  - d. Stockpiled Topsoil should be covered several weeks before reuse to limit additional soil moisture from precipitation.
4. Duration
  - e. Stockpiles up to approximately five (5) feet high (1.5 m) maximum will stay healthy for up to a year, after which the structure and chemical composition markedly decreases, as will the viability of seeds and soil flora and fauna. Wide, shallow stockpiles are optimal for retention of microbes, viable seeds, etc.
  - f. For soil health, minimize the amount of time that topsoil remains stockpiled.

5. Erosion and Flooding Protection
  - g. Stockpiles should be seeded for stabilization and to maintain soil health. Vegetating the stockpile will help maintain viability of the soil's fungi and microbial communities. Soil stockpiles should be seeded, if possible, within 10 days of forming the stockpile.
  - h. From September 15 to March 1, seeding shall be a cool season cover crop: Wheat (*Triticum aestivum*), Oats (*Avena sativa*), or Cereal Rye Grain (*Secale cereal*). From March 2 to September 14, seeding shall be vegetated with native seed per SP-609S. The cover crop will act as a "green manure" soil amendment once the topsoil is replaced.
  - i. Implement appropriate weed control strategies.
  - j. Erosion control matting or geotextiles can be used to temporarily protect stockpiles, not plastic.
  - k. Use erosion protection measures to prevent stockpiled topsoil from leaving the stockpile area.
  - l. Stockpile area shall be outside the floodplain.
  
6. Placement
  - m. Install stockpiled topsoil on top of rough subgrade to achieve finished grades, reestablishing a natural, healthy soil profile.
  - n. Transitioning between the subsoil and salvaged topsoil can be accomplished by applying two to three inches of topsoil, tilling it into the underlying soil, and then applying the remaining soil on top.

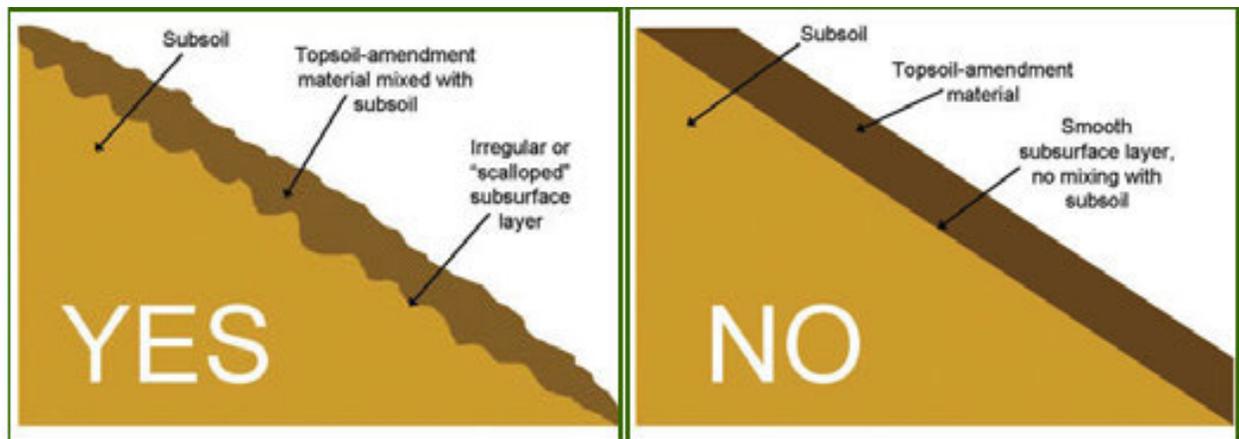


Figure 1 Topsoil amendment applied and mixed with subsoil, creating a scalloped subsurface layer (left). Typical topsoil amendment application without mixing with subsoil (right). Source: Watershed Management Guidebook (Drake & Hogan, 2013).<sup>1</sup>

<sup>1</sup> Drake, K., & Hogan, M. (2013). *Watershed Management Guidebook*. An Integrated Environmental Restoration Services, Inc. Publication.

**Revise** the following (3<sup>rd</sup> paragraph):  
(Changes to the paragraph are underlined)

The existing topsoil shall be removed from the area indicated on the Drawings, stockpiled in windrows for ease of loading and hauling and to promote seed stock and plant viability. Native soil salvaged from the site shall be stockpiled in locations shown on the drawings or as agreed on between Contractor and City.

**Article 601S.6 Measurement and Payment**

**Add** the following:

Topsoil Salvage and Place is paid for at the contract bid price per cubic yard. Payment includes all labor, materials, and equipment necessary to complete this bid item including salvaging, special handling, stockpiling, storage, re-handling of material, and placement.

**Pay Item SP 601S-A** Salvage and Place Topsoil – per Cubic Yard.

**End**

**SPECIAL PROVISION TO  
Standard Specification Item No. 602S Sodding for Erosion Control  
(dated 06-16-08)**

These special provisions serve to modify, add to, and/or delete from the City of Austin Standard Technical Specification Item No. 602S: Sodding for Erosion Control, dated 6-16-2008. Any item, paragraph, article, or work contained therein unless specifically modified, added to or deleted herein shall apply where applicable.

**Article 602.2 Submittals**

**Delete** the existing paragraph and **Add** the following:

The submittal requirements for this specification item shall include the identification of the type and source of sodding and type and rate of application of fertilizer, including the following:

- A. Required Submittals Before Construction
  - a. Source of sod and certification of variety
  - b. Installation and maintenance requirements as provided by supplying sod farm
- B. Required Inspections During Construction
  - a. After fine grading is complete and all soil amendments (if any) have been added, before sod is placed. Notify Owner a minimum of 7 days in advance to allow for inspection.
  - b. After sod installation.

**Article 602.3 Materials**

**Add** the following to item A. Block and Mulch Sod:

- a. Buffalo grass sod.
- b. Hybrid Bermuda grass sod.
- c. Zoysia sod.

**Add** the following:

- F. Topsoil

Topsoil shall meet Standard Specification 601S or Topsoil Mix SS-612.

**Article 602.5 Construction Methods**

**Add** the following to item A. General:

- a. Soil in planting area shall be tilled to a depth of six inches. In the critical root zone of trees, limit scarification to one inch.
- b. After tilling or scarification, add required amendment per soil test or install approved topsoil (601S) or topsoil mix (SS612) to six (6) inch depth minimum. The planting area should be smooth with no rocks or other materials over one inch.
- c. Turfgrass sod shall be harvested, delivered and installed within a 24-hour period, unless a suitable preservation method is approved before delivery.

**Add** the following to item B. Placement:

- a. Turfgrass sod shall be delivered to the site specified by Owner and off-loaded using equipment provided by the Contractor or turfgrass sod supplier. Palletized or large-roll turfgrass sod shall be off-loaded at the designated location at the installation site.

#### **Article 602.8 Measurement**

**Add** the following to item A. Block and Mulch Sod:

- a. 4" stand of buffalo grass in accordance with sod supplier's recommendation.

#### **Article 602.9 Payment**

**Add** the following:

**Pay Item SP 602S-B** Buffalo grass sod – per Square Yard

**Pay Item SP 602S-C** Hybrid Bermuda Grass sod – per Square Yard

**Pay Item SP 602S-D** Zoysia grass sod – per Square Yard

End

**SPECIAL PROVISION TO  
Standard Specification Item No. 604S Seeding for Erosion Control  
(dated 08-18-10)**

These special provisions serve to modify, add to, and/or delete from the City of Austin Standard Technical Specification Item No. 604S: Seeding for Erosion Control, dated 08/18/2010. Any item, paragraph, article, or work contained therein unless specifically modified, added to or deleted herein shall apply where applicable.

**Article 604S.1 Description**

**Revise** the following:

*(Changes to the paragraph are underlined or stricken)*

This item shall govern the preparation of a seed bed to achieve permanent vegetative stabilization to the lines and grades indicated on the Drawings, sowing of seeds, fertilizing, ~~mulching with straw, cellulose fiber wood chips, recycled paper mulch~~ hydromulch, soil retention blanket and other management practices along and across...

**Article 604S.2 Submittals**

**Add/Revise** the following:

*(Changes to the paragraph are underlined or stricken)*

- A. Identification of the type...of the seed. Provide delivery tickets indicating the quantity of each type of seed delivered to the site.
- B. type of mulch. Invoice showing certification of Hydromulch/seed mix as Bonded Fiber Matrix (BFM) or Fiber Reinforced Matrix (FRM).
- E. List of type of seeding equipment proposed for use.

**Article 604S.3 Materials**

**Add/Revise** the following:

*(Changes to the paragraph are underlined or stricken)*

C. **Top Soil.** Top soil shall conform to Standard Specification Item No. 601S.3(A) or Special Specification 612, Topsoil Mix, as directed by the designated City representative.

I. **Hydromulch.** Hydromulch for permanent vegetative stabilization materials may include:

- 1. Bonded Fiber Matrix (BFM): organic defibrated fibers and cross-linked hydro-colloidal tackifiers. Refer to ECM Table 1.4.7-C
- 2. Fiber Reinforced Matrix (FRM): organic defibrated fibers produced from grinding clean, whole wood chips, crimped interlocking fibers, cross-linked insoluble hydro-colloidal tackifiers and reinforced natural and/or synthetic fibers.

**Delete** the following:

- ~~E. Straw Mulch or Hay Mulch.~~
- ~~G. Cellulose Fiber Mulch (Natural Wood).~~
- ~~H. Recycled Paper Mulch.~~

#### Article 604S.4 Construction Methods

Add the following:

##### C. Seeding

Apply seed uniformly with a seed spreader, drill, cultipacker seeder or hydroseeder.

##### D. Protection of Seed Bed with Hydromulch or Soil Retention Blanket.

Newly-installed seeding must be protected by Hydromulch or soil retention blanket (refer to Standard Specification 605S Soil Retention Blanket) immediately after seeding.

###### 1. Hydromulch

Permanent vegetative stabilization with Hydromulch shall comply with the requirements of ECM Table 1.4.7-C using either:

- (a) Bonded Fiber Matrix (BFM): 80% organic defibrated fibers and 10% tackifier (Refer to ECM Table 1.4.7-D for BFM properties), or
- (b) Fiber Reinforced Matrix (FRM): 65% organic defibrated fibers, 25% reinforcing fibers or less, and 10% tackifier (Refer to ECM Table 1.4.7-E for FRM properties).

#### Article 604S.5 Non-Native Seeding

Add/Revise the following:

*(Changes to the paragraph are underlined or stricken; all else is new)*

**A. Method A. Broadcast Seeding.** The seed or seed mixture in the quantity specified shall be uniformly distributed over the prepared seed bed areas indicated on the Drawings or where directed by the Engineer or designated representative. ~~If the sowing of seed is by hand, rather than by mechanical methods, the seed shall be sown in two directions at right angles to each other. If mechanical equipment is used, all varieties of seed, as well as fertilizer, may be distributed at the same time, provided that each component is uniformly applied at the specified rate. Apply seed uniformly at the specified rate with a seed spreader, drill, cultipacker seeder or hydroseeder.~~ After planting with a seed spreader, the planted area shall be rolled with a corrugated roller of the "Cultipacker" type. All rolling of the slope areas shall be on the contour.

**B. Method B - Hydraulic Planting.** The seedbed shall be prepared as specified above and hydraulic planting equipment, which is capable of placing all materials in a single operation, shall be used.

**Replace the standard language** in the Table for Fiber Mulch and Soil Tackifier:

*(Changes to the paragraph are underlined or stricken)*

#### March 1 to September 15

For permanent vegetation, newly-installed seeding must be protected by hydromulch or soil retention blanket (refer to Standard Specification 605S Soil Retention Blanket) immediately after seeding. Protection of the seed bed shall occur in a manner that will allow seed germination and that encourage effective vegetative growth. Hydromulching shall comply with requirements of City of Austin, Environmental Criteria Manual (ECM) Section 1.4.0.

1. Hydromulch

Permanent vegetative stabilization with Hydromulch shall comply with the requirements of ECM Table 1.4.7-C using either:

(a) Bonded Fiber Matrix (BFM): 80% organic defibrated fibers and 10% tackifier (Refer to ECM Table 1.4.7-D for BFM properties), or

(b) Fiber Reinforced Matrix (FRM): 65% organic defibrated fibers, 25% reinforcing fibers or less, and 10% tackifier (Refer to ECM Table 1.4.7-E for FRM properties).

**Article 604S.6 Native Grass Seeding**

**Remove this section – all native seeding will conform to SP-609S.**

**Article 604S.7 Mulch**

*(Changes to the paragraph are underlined or stricken; all else is new)*

~~A. Straw Mulch~~

~~B. Fiber Mulch~~

~~C. Recycled Paper Mulch~~

~~D. Shredded Brush Mulch~~

**E. Bonded Fiber Matrix (BFM):** 80% organic defibrated fibers and 10% tackifier (Refer to ECM Table 1.4.7-D for BFM properties).

**F. Fiber Reinforced Matrix (FRM):** 65% organic defibrated fibers, 25% reinforcing fibers or less, and 10% tackifier (Refer to ECM Table 1.4.7-E for FRM properties).

**Article 604S.9 Payment**

*(Changes to the paragraph are underlined or stricken; all else is new)*

**Add/Revise** the following:

**Pay Item No. SP-604S-A1:** Non-Native Seeding for Erosion Control Method, Seed Spreader, Per Square Yard.

**Pay Item No. SP-604S-A2:** Non-Native Seeding for Erosion Control Method, Drill or Cultipacker, Per Square Yard.

**Pay Item No. SP-604S-A3:** Non-Native Seeding for Erosion Control Method, Bonded Fiber Matrix Hydromulch or Fiber Reinforced Matrix, Per Square Yard.

~~**Pay Item No. 604S-C:** Native Seeding for Erosion Control Method, \_\_\_ Mulch Per Square Yard.~~

~~**Pay Item No. 604S-D:** Native Seeding for Erosion Control Method, \_\_\_ Mulch Per Acre.~~

~~**Pay Item No. 604S-E:** Mulch, \_\_\_\_\_ Per Square Yard.~~

~~**Pay Item No. 604S-F:** Mulch, \_\_\_\_\_ Per Acre.~~

END

**SPECIAL PROVISION TO  
Standard Specification Item No. 606S Fertilizer (Version 06/21/2007)**

These special provisions serve to modify, add to, and/or delete from the City of Austin Standard Technical Specification Item No. 606S: Fertilizer, dated 6/21/2007, incorporated into this Project Manual. Any item, paragraph, article, or work contained therein unless specifically modified, added to or deleted herein shall apply where applicable.

**Article 606S.1 Description**

*(Changes to the paragraph are underlined)*

This item shall govern the provision and distribution of fertilizer and other soil amendments over the areas...

**Article 606S.2 Submittals**

**Add** the following:

- F. Bills of lading for compost and all other soil amendments required by the soil analysis described in SS-612S shall be submitted indicating quantities that have been incorporated into the soil.
- G. Analysis of compost to establish that it meets the requirements identified below. Current test results (within 6 months of application) shall be provided to the Owner for review and approval.
- H. Results of Solvita Compost Maturity Test for proposed compost, including both carbon dioxide and ammonia tests.
- I. Description of compost source materials, by percentage of volume.
- J. Identification of compost source including supplier's name, address, phone number, and website address.
- K. Length of composting period.
- L. For aerated compost tea, document preparation procedure that aerated compost tea producer used, dates of preparation, and recommended installation procedures.

**Article 606S.3 Materials**

**Add** the following:

- A. Amendments shall be tailored to meet the fertilization recommendations of the soil analysis and plant needs. The aim is to build and maintain humus (slow-release N supply) with composts, humates, humus products, vegetable meals, fish products, and/or soil inoculants for better tilth and nutrient supply.

Compost: Well-composted, stable, and weed-free organic matter meeting the following parameters.

**Manure, sewage sludge, or kitchen waste based composts are prohibited.**

Parameters	Units of Measure	Range
pH	pH units	6 - 8 <sup>2</sup>
Soluble Salt Concentration	dS/m (mmhos/cm)	5 - 10 <sup>1</sup>
Organic Content	% (dry mass)	30-60%
Moisture Content	Content %, net weight basis	40-50%
Particle Size	% passing a selected mesh size dry weight basis	98% thru 3/4" screen or smaller
Bulk Density	---	800-1,000 lbs/cy
Nutrient Contents	Dry weight basis	N: 1-2.5%, P: 1-2%, K: 0.5-1.5%
Contaminants	Mg/kg (ppm)	<1
Maturity (Solvita®)		>5

- i. Compost will be rototilled into the stockpiled topsoil after it is placed back in the stream restoration area.
- ii. Rototilling shall not be done below the drip line of existing trees.
- b. Compost Tea: aerated compost tea shall be produced by a recognized and experienced producer of commercial aerated compost tea, meeting the following parameters:

Parameters	
Active bacteria	150 ug/ml
Total bacteria	300 ug/ml
Active fungi	10 ug/ml
Total fungi	20 ug/ml
Beneficial nematodes	10/ml
Ciliates	Not more than 100/ml

**Article 606S.4 Construction Methods**

Delete the following:

Maintenance fertilizing shall be applied every 6 months after the new sod or grass is placed or until the work is accepted by the City.

**Article 606S.5 Measurement**

Add the following:

**Pay Item No. 606S-C:** Soil amendment: Compost per CY  
**Pay Item No. 606S-D:** Soil amendment: Compost tea per  
GAL

**End**

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<sup>2</sup> pH and soluble salt content is more relevant to the establishment and growth of a particular plant, than is the pH or soluble salt content of a specific compost used to amend the soil.

## **SPECIAL PROVISION TO Standard Specification Item No. 608S Planting (dated 06-16-08)**

These special provisions serve to modify, add to, and/or delete from the City of Austin Standard Technical Specification Item No. 608S: Planting, dated 06/16/2008. Any item, paragraph, article, or work contained therein unless specifically modified, added to or deleted herein shall apply where applicable.

### **Article 608S.2 Submittals**

**Add** the following:

H. Photographs of specimens of all plants shall be provided to Landscape Architect for approval at least seven days before requesting permission for delivery to the site. Photographs, taken at the nursery, shall be of the actual plants to be supplied, and shall include scale figures for reference. The Landscape Architect may visit the nursery to approve and tag particular plants, as appropriate.

I. One gallon samples of each type of mulch and each component of the planting as specified in SP-601S and SS-613 (topsoil mix), and one quart sample of each fertilizer component as described in SP-606S.

J. Copy of Licensed Pesticide Applicator's certificate.

K. Copy of pesticide application record with each invoice.

L. Receipts for accredited landfill or other City-approved facility should turfgrass clipping disposal be necessary.

M. Rhizome barrier sheet: submit sample (6"x6") and; manufacturer's product data, installation instructions and warranty.

### **Article 608S.3 General**

**Revise the Standard Language** as follows:  
(Changes to the paragraph are underlined)

3. Irrigation.

The Contractor shall possess an irrigator's license issued by the Texas Commission on Environmental Quality (TCEQ) ~~State of Texas and the Texas Board of Irrigators~~ or employ such a licensed irrigator to perform the irrigation system installation and maintenance.

## Article 608S.4 Materials

Revise/Add the Standard Language as follows:

*(Changes to the paragraph are underlined)*

### A. Plant Material

#### 1. Container Plants

All containers plants will be priced according to the nature of their usage and availability on the market; the term "standard" is a commonly used plant that is widely available on the market (e.g., lantana, salvias, muhly grasses, Mexican feathergrass) and thus, is of lower price than a "premium" plant (e.g., horsetail reed, some rushes, some agaves, etc.) that is less widely use and/or available for various reasons (e.g., slower growing). Plant availability is highly dependent on the market and weather, and may change annually.

### E. Mulch

Contractor shall install hardwood mulch consisting primarily of organic material (shredded bark, stump grindings, composted bark) and produced from a 3 (three) inch minus screening process. The material shall be a well-graded mixture of particle sizes and must be free of refuse, ground construction debris, biosolids, and manure. It may be manufactured on or off the project site. Three inches of mulch should be installed and maintained in non-turf areas.

Gravel can be used for soil stabilization in rain gardens and biofiltration ponds ONLY. The gravel should be ¾"- to 1"-diameter washed, rounded river gravel. Crushed limestone and granite (i.e., "decomposed" granite) are not acceptable due to fines that cause clogging. Placement of gravel relative to plant materials should follow the guidelines for organic mulch.

### G. Planting Soil Mixture

*(Changes to the paragraph are underlined)*

The planting soil mixture shall consist of a soil mixture of ¾ fine sandy loam, 1/8 peat moss and 1/8 leaf mold. The sandy loam shall be taken from a well drained, arable site. It shall be free of subsoil, stones, clay, roots, weeds, grass or other objectionable debris, matter or toxic wastes. follow that in SS-612 (Topsoil Mix). For turf and landscape areas, six (6) inches minimum of soil is required and 12 inches for tree planting.

### H. Vegetative Watering

*(Changes to the paragraph are underlined)*

Refer to SS-603 for specifics of the work of Temporary Landscape Irrigation.

### J. Pesticides including Herbicides

*(Changes to the paragraph are underlined)*

If chemical treatment is necessary to eradicate perennial weeds, a non-selective herbicide containing Glyphosate (e.g. Roundup) is preferred for herbaceous plants. For woody plants an herbicide with the appropriate formulation of the active ingredient Triclopyr is usually preferred. Sedges (e.g. nutsedge) may be managed with a product that selectively controls plants in the genus Cyperus (e.g. Sedgehammer, Manage, etc.)

The City's pre-approved primary herbicide ingredients are listed below. The Contractor's Licensed Pesticide Applicator shall not use an herbicide or pesticide whose primary ingredient is not on the following list without prior written consent.

- (1) Imazamox.
- (2) Glyphosate, and
- (3) Triclopyr.

In riparian areas, use a surfactant-free glyphosate, labeled safe for aquatic use.

Organic herbicides, including acetic acid (20% vinegar) and essential oils are permitted in biofiltration ponds and rain gardens.

Herbicides should have a photosensitive dye that produces a contrasting color when sprayed on the ground. The color must disappear between two to three days after being applied. The dye must not stain surfaces, or injure plants or wildlife when applied at the manufacturer's recommended rate.

Fire ants frequently invade sites with disturbed soils. Pest management materials shall include the use of bait formulated to eliminate the entire colony, including the queen.

Example of acceptable bait materials include:

- |                    |                                |
|--------------------|--------------------------------|
| (1) Hydramethylnon | product names: Amdro®, Combat® |
| (2) Spinosad       | product name: Eliminator®      |
| (3) Methoprene     | product name: Extinguish™      |
| (4) Abamectin      | product name: Ascend™, Raid®   |
| (5) Pyriproxyfen   | product name: Spectracide®     |

#### **P. Mowing and Trimming Equipment**

*(Changes to the paragraph are underlined)*

Turf will be maintained with professional quality mulching mower and trimming equipment complying with City of Austin Resolution No. 040115-31 on air emissions reductions

**Add the following:**

#### **Q. Rhizome Barrier**

*(Changes to the paragraph are underlined)*

Barrier may be: High Density Polyethylene (HDPE), 40 mil thickness; high-impact polystyrene (HIPS) with rubberizer added and UV inhibitor, 0.040"-0.060" thickness (min).

**Remove the Standard Language and replace** with the following:

#### **K & L. Stakes and Guys; Bracing**

*(Changes to the paragraph are underlined)*

Stakes shall be metal "T" or wood posts driven outside the rootball and connected to the tree with a web fabric tape (e.g., Arbor Tie). The tape should be tied to form a figure eight twist that is not tied to the trunk, just attached to the posts. The point of contact should be only about halfway up the trunk. All stakes and web tape shall be removed after one year.

## Article 608S.5 Construction Methods

Revise/Add Standard Language as follows:  
(Changes to the paragraph are underlined)

### B. Excavation of Planting Pits

#### 2. Pit Sizes

a. The planting pit should be a minimum horizontal dimension of three (3) times the width of the rootball for the following plant specifications:

(1) Containers of fifteen (15) gallons or larger [56 liters or larger];

(2) Boxes of fourteen (14) inches or larger [350 mm or larger] and

(3) Root ball diameter of balled and burlapped or bag grown plants larger than fourteen (14) inches [350 mm]

d. Pits shall not be excavated deeper than the depth of the plant rootball. Plants larger than 1 gallon size shall be placed on firm soil at the base of the planting pit.

### E. Pruning Roots

Root pruning shall be done at the time of planting to remove damaged or undesirable roots, i.e., those that will become a detriment to future growth of the root system.

### F. Pruning of Tops

No pruning of tops shall be done without approval of the Landscape Architect for specific cuts.

### G. Planting and Backfilling

#### 2. Depth of Transplanting

A tree's root flare shall be at or slightly above the finished grade. Determine how deep the root flare is in the ball before placing it in the planting hole.

a. Determine the elevation of the root flare and ensure that it is planted at grade. This may require that the tree be set higher than the grade in the nursery.

b. If the root flare is less than 2 inches below the soil level of the root ball, plant the tree so that the flare is even with the grade. If the flare is more than 2 inches at the center of the root ball the tree shall be rejected.

### J. Pruning

Bunchgrasses require annual clipping in late winter to retain plant health but shall be cut no shorter than 18 inches.

### K. Plant Supports and Bracing Trees

Remove the third paragraph about bracing. Refer to 608S.4 K & L above.

## **M. Tree Trunk Protection**

- a. All trees indicated on the Drawings to be wrapped shall be neatly and securely wrapped with a commercial tree wrapping material approved by the Landscape Architect or designated representative. If no wrapping requirements appear on the drawings, submit a drawing of the wrapping method to be used for approval.
- b. Wrapping material shall be applied from the base of the tree to the first branch.
- c. Wrapping material shall be fastened with biodegradable tape loosely wrapped in a single layer around the wrapping material. The wrap shall not be stapled nor shall it be tied with non- or slowly biodegradable tape, any synthetic tape, any synthetic or natural fiber string, or wire.
- d. All wrapping material shall be removed no later than one year after planting.

## **N. Mulching**

All plants shall receive mulching to a depth of 2 to 3 inches within the water basin or across the beds or in a six-foot-diameter ring around newly planted trees unless met with an obstruction (e.g., adjacent sidewalk) and unless indicated otherwise on the Drawings. Gravel soil cover in biofiltration facilities shall be 1 inch minimum. The mulching material shall be placed evenly and uniformly to provide 100 percent coverage of bare areas. A small amount of backfill shall be sprinkled on top of organic mulch to hold it in place if directed by the Engineer or designated representative. If hay is used, the depth shall be 4 inches (100 mm) loose measurement.

## **P. Maintenance and Initial Plant Replacement**

The Contractor shall be responsible for replacement of any turfgrass under this contract when, in the opinion of the Engineer/Landscape Architect, such damage or destruction has resulted from the Contractor's own action or neglect during the execution of this contract. Replacement shall be done to the satisfaction of the Engineer/Landscape Architect at the Contractor's expense. Turfgrass shall be replaced as directed by the Engineer/ Landscape Architect with the same species, size, and quality (or better) as was originally present.

**Add the following:**

### **Q. Rhizome Barrier**

Install barrier sheet material in accordance with manufacturer's instructions at locations indicated on the Drawings or per instructions from the Contract Manager.

Trench shall be dug around entire perimeter of the containment area and to depth specified by manufacturer. It shall be at least two inches shallower than height of barrier and protrude above the surface at least two inches to minimize likelihood of rhizomes escaping over the barrier. Any seam or break in the barrier shall be overlapped and fastened or extrusion welded. The trench shall be backfilled and compacted sufficiently to prevent substantial subsidence.

## **Article 608S.6: Plant Establishment and Post-establishment Maintenance**

**Add the following to the first paragraph:**  
*(Changes to the paragraph are underlined)*

For the purposes of this contract, the following activities will apply to the periods of both plant establishment and post-establishment maintenance. The duration of the post-establishment period shall be defined by the Contract Manager, not to exceed five years.

**Revise/add Standard Language** as follows:

### **C. Mowing and Trimming**

Contractor will mow all turf areas at least four times from March 1 through October 31. Mowing height shall be no lower than 4 inches and no higher than 6 inches. Mowing is not preferred in Vegetative Filter Strips (VFS). Clippings can be left on the turf as long as no readily visible clumps remain on the grass surface after mowing. Otherwise, Contractor shall remove and dispose of excessive clippings at an accredited landfill or other City-approved facility and provide proof by attaching receipt to invoice. Clippings must be physically removed from hardscapes. Blowing of clippings and leaves from landscape to hardscape areas such as roadways is not permitted.

Edges along hardscapes (e.g., sidewalks, driveways) and fixed objects shall be trimmed during each mowing event. Turf around sprinkler heads shall be trimmed to prevent grass from interfering with irrigation spray. String trimmers may not be used around tree trunks.

**Add** the following:

### **F Pest Management: Insect, Disease, Weed and Animal Control**

All pesticide use shall follow the IPM standards and protocols outlined in the City of Austin Grow Green website. (Note: the term pesticides is inclusive of herbicides, fungicides, insecticides and related terms)

Common noxious weeds are in Table 1 and City of Austin-defined Invasive Species are in Table 2 (see Special Specification 609S4), although the Contract Manager may ask the Contractor to remove any plant deemed undesirable by the City. Pesticide use is generally prohibited in green stormwater facilities, but may be allowed in specific circumstances. Where permitted, pesticide use shall follow the guidelines in this specification and those stated in City of Austin's ECM 1.6.3. Contractor shall consult with and obtain prior written approval from the City when the use of an herbicide is anticipated.

The circumstances wherein herbicides may be considered for weeds (both woody and herbaceous) include the following:

- Physical, mechanical and other non-chemical methods are unlikely to be successful
- Perennial species exist (use non-chemical methods for annual weeds)
- Weeds are too numerous to be removed manually

Noxious weeds shall be removed before they set seed. Various acceptable removal techniques include hand pulling, weed wrench, hoe, weed popper, or other forked instrument. When hand weeding, remove enough of the root system to prevent re-sprouting. Contractor shall promptly fill any holes resulting from weed removal.

Herbicides may be considered for woody weeds (trees and shrubs) that meet the criteria noted above. A cut-stump method is often used, wherein the trunk and branches are lopped at the base and removed from the site. Many species have the ability to re-sprout after cutting. For these species, the Contractor shall apply an herbicide to the exposed trunk immediately after cutting. Other herbicide application methods may also be considered.

Herbicides may also be considered for herbaceous weeds that meet the criteria noted above. Acceptable application methods include broadcast spray and wick application to foliage. Follow-up applications of herbicide may be necessary to eradicate certain well established plants. Generally, a non-selective herbicide containing glyphosate (e.g. Roundup) shall be used (or approved equal). In riparian areas and near water resources, use only surfactant-free glyphosate, one labeled safe for aquatic use.

Insect pests that must be managed include fire ants. Monitor the site at each maintenance visit for fire ant activity. Pest management materials shall include the use of bait formulated to eliminate the entire colony (including the queen). Refer to City of Austin IPM standards for examples of acceptable fire ant bait products. When active ant mounds are present, use fire ant bait according to label directions. It is anticipated that a bait treatment will need to occur once in the Spring and once in the Fall.

#### **H. Fertilization**

As the nutrients in fertilizer have the potential to become a water pollutant, this activity shall generally not occur in stormwater facilities. However at times there is a need to provide additional nutrients to enhance vegetative growth. This need shall be based on a soil analysis and professional expertise. If fertilization is being considered, the Contractor must first contact the City representative for consent. Fertilizer may be used during the establishment period only. Fertilizer must be slow-release, with no more than 1lb of nitrogen/1000 s.f. allowed per year, and no more than ½ lb per application. After establishment, stormwater facilities are to be maintained without fertilizers.

#### **J. Aeration**

On direction of the Owner, Contractor shall aerate turf grass in the fall. Aerate to six-inch depth with standard aeration equipment.

#### **K. Reporting of Maintenance Visits**

Records shall be kept of maintenance tasks, including watering and IPM activities. A written list of site visits noting the action taken, time, date, and personnel shall be provided to the Contract Manager on a quarterly basis.

### **Article 608S.7 Acceptability of Plants**

Add the following:

**Progress inspections** are required before planting begins and after completion of specified work. Contractor shall also schedule inspection once a month during the plant establishment period. Please contact Contract Manager to schedule an inspection 72 hours before scheduled event.

### **Article 608.9 Payment**

Add the following:

<b>Pay Item No. SP 608S-1Ai:</b> Planting, 4" container, standard	_____ each
<b>Pay Item No. SP 608S-1Aii:</b> Planting, 4" container, premium	_____ each
<b>Pay Item No. SP 608S-1Bi:</b> Planting, 1 gal. container, standard	_____ each
<b>Pay Item No. SP 608S-1Bii:</b> Planting, 1 gal. container, premium	_____ each

**Pay Item No. SP 608S-1Ci:** Planting, 3 gal. container, standard \_\_\_\_\_each  
**Pay Item No. SP 608S-1Cii:** Planting, 3 gal. container, premium \_\_\_\_\_each  
**Pay Item No. SP 608S-1Di:** Planting, 5 gal. container, standard \_\_\_\_\_each  
**Pay Item No. SP 608S-1Dii:** Planting, 5 gal. container, premium \_\_\_\_\_each  
**Pay Item No. SP 608S-1Ei:** Planting, 10 gal. container, standard \_\_\_\_\_each  
**Pay Item No. SP 608S-1Eii:** Planting, 10 gal. container, premium \_\_\_\_\_each  
**Pay Item No. SP 608S-1Fi:** Planting, 15 gal. container, standard \_\_\_\_\_each  
**Pay Item No. SP 608S-1Fii:** Planting, 15 gal. container, premium \_\_\_\_\_each  
**Pay Item No. SP 608S-1Gi:** Planting, 30 gal. container, standard \_\_\_\_\_each  
**Pay Item No. SP 608S-1Gii:** Planting, 30 gal. container, premium \_\_\_\_\_each  
**Pay Item No. SP 608S-1Hi:** Planting, 1.5" caliper tree, standard \_\_\_\_\_each  
**Pay Item No. SP 608S-1Hii:** Planting, 1.5" caliper tree, premium \_\_\_\_\_each  
**Pay Item No. SP 608S-1Ii:** Planting, 2" caliper tree, standard \_\_\_\_\_each  
**Pay Item No. SP 608S-1Iii:** Planting, 2" caliper tree, premium \_\_\_\_\_each  
**Pay Item No. SP 608S-1Ji:** Planting, 3" caliper tree, standard \_\_\_\_\_each  
**Pay Item No. SP 608S-1Jii:** Planting, 3" caliper tree, premium \_\_\_\_\_each  
**Pay Item No. SP 608S-3A:** Hardwood Mulch CY  
**Pay Item No. SP 608S-3B:** Gravel Soil Stabilization for Stormwater Facilities CY  
**Pay Item No. SP 608S-4A:** Tree Support System, per tree EA  
**Pay Item No. SP 608S-5A:** Turfgrass Maintenance, Mowing and Edging SY  
**Pay Item No. SP 608S-5B:** Turfgrass Maintenance, Aeration SY  
**Pay Item No. SP 608S-6:** Herbaceous and Woody (non-tree) Plant Pruning SY  
**Pay Item No. SP 608S-7A:** Management Practices, Weeding, Physical Removal and Disposal SY  
**Pay Item No. SP 608S-7B:** Management Practices, Weeding, Chemical Treatment SY  
**Pay Item No. SP 608S-7C:** Management Practices, Fire Ant Management SY  
**Pay Item No. SP 608S-7D:** Rhizome Barrier LF  
**Pay Item No. SP 608S-8:** Debris and Litter Removal SY

End

**SPECIAL PROVISION TO  
Standard Specification Item No. 609S Native Grassland Seeding and  
Planting for Erosion Control (Version 08/18/10)**

These special provisions serve to modify, add to, and/or delete from the City of Austin Standard Technical Specification Item No. 609S: Native Grassland Seeding and Planting for Erosion Control, dated 8/18/2010. Any item, paragraph, article, or work contained therein unless specifically modified, added to or deleted herein shall apply where applicable.

**Article 609S.2 Submittals**

**Add the following:**

*(Changes to the paragraph are underlined or stricken)*

- E. All components of hydroseed slurry, including tacking agent, fertilizers, and proposed mulch
- F. Type of hydraulic seeding equipment and nozzles proposed for use.
- G. Delivery tickets indicating the quantity of each type of seed delivered to the site.
- H. Invoice showing certification of Hydromulch/seed mix as Bonded Fiber Matrix (BFM) or Fiber Reinforced Matrix (FRM).

**Article 609S.3 Materials**

**Add the following:**

*(Changes to the paragraph are underlined or stricken)*

- F. Hydromulch for permanent vegetative stabilization materials may include:
  - (1) Bonded Fiber Matrix (BFM): organic defibrated fibers and cross-linked hydro-colloidal tackifiers. Refer to ECM Table 1.4.7-C
  - (2) Fiber Reinforced Matrix (FRM): organic defibrated fibers produced from grinding clean, whole wood chips, crimped interlocking fibers, cross-linked insoluble hydro-colloidal tackifiers and reinforced natural and/or synthetic fibers.

**Article 609S.4 Construction Methods, Table 1: Weed List**

**Add the following to:**

Table 1, Weed List

<b>Weed Type</b>	<b>Botanical Name</b>	<b>Common Name</b>
Tree	<i>Acacia</i> spp.	Acacia
Tree	<i>Salix nigra</i>	Willow

**Add the following:**

Table 2, Invasive Species List

<b>Common Name</b>	<b>Botanical Name</b>
Giant reed	<i>Arundo donax</i>
Common water hyacinth	<i>Eichhornia crassipes</i>
Hydrilla	<i>Hydrilla verticillata</i>
Glossy privet	<i>Ligustrum lucidum</i>
Chinaberry tree	<i>Melia azedarach</i>
Golden bamboo	<i>Phyllostachys aurea</i>
Kudzu	<i>Pueraria montana</i> var. <i>lobata</i>
Bastard cabbage	<i>Rapistrum rugosum</i>

Johnson grass	<i>Sorghum halepense</i>
Salt cedar	<i>Tamarix ramosissima</i>
Tree of heaven	<i>Ailanthus altissima</i>
Paper mulberry	<i>Broussonetia papyrifera</i>
Malta star-thistle	<i>Centaurea melitensis</i>
Elephant ears	<i>Colocasia esculenta</i>
Bermudagrass	<i>Cynodon dactylon</i>
Chinese parasoltree	<i>Firmiana simplex</i>
Japanese honeysuckle	<i>Lonicera japonica</i>
Catclawvine	<i>Macfadyena unguis-cati</i>
Sacred bamboo	<i>Nandina domestica</i>
Chinese pistache	<i>Pistacia chinensis</i>
Scarlet firethorn	<i>Pyracantha coccinea</i>
Japanese netvein hollyfern	<i>Cyrtomium falcatum</i>
Bluestem, King Ranch	<i>Bothriochloa ischaemum</i>

**Add** the following:

*(Changes to the paragraph are underlined or stricken)*

D. Seeding

Apply seed uniformly with a seed spreader, drill, cultipacker seeder or hydroseeder.

E. Protection of Seed Bed with Hydromulch or Soil Retention Blanket.

Newly-installed seeding must be protected by hydromulch or soil retention blanket (refer to Standard Specification 605S Soil Retention Blanket) immediately after seeding. Protection of the seed bed shall occur in a manner that will allow seed germination and that encourage effective vegetative growth. Hydromulching shall comply with requirements of City of Austin, Environmental Criteria Manual (ECM) Section 1.4.0.

1. Hydromulch

Permanent vegetative stabilization with Hydromulch shall comply with the requirements of ECM Table 1.4.7-C using either:

(a) Bonded Fiber Matrix (BFM): 80% organic defibrated fibers and 10% tackifier (Refer to ECM Table 1.4.7-D for BFM properties), or

(b) Fiber Reinforced Matrix (FRM): 65% organic defibrated fibers, 25% reinforcing fibers or less, and 10% tackifier (Refer to ECM Table 1.4.7-E for FRM properties).

**Article 609S.5 Native Grassland Seeding and Planting**

**Revise the first paragraph, last sentence:**

*(Changes to the paragraph are underlined or stricken)*

Seed shall be applied by a method that achieves consistent distribution and proper seed to soil contact (i.e., ~~hand broadcasting~~, seed spreader, cultipacker seeder, hydromulch, or drill method). Mulching is not required.

## Article 609S.6 Management Practices

Add the following:

*(Changes to the paragraph are underlined or stricken)*

Common noxious weeds are in Table 1 and City of Austin-defined Invasive Species are in Table 2, although the Contract Manager may ask the Contractor to remove any plant deemed undesirable by the City. Herbicide and pesticide use is prohibited in certain green stormwater infrastructure facilities, including vegetated filter strips. Where permitted, herbicide and pesticide should follow the guidelines in this specification and those stated in City of Austin's ECM 1.6.3.

Noxious woody vegetation shall be removed before they set seed. Various acceptable removal techniques include hand pulling, weed wrench, hoe, weed popper, or other forked instrument. When hand weeding, the entire root system of the weed shall be removed. Woody weeds that cannot be removed completely shall be lopped at the base and removed from the site. To prevent re-sprouting, Contractor shall apply an herbicide on the exposed trunk immediately after cutting. Contractor shall promptly fill any holes resulting from weed removal.

In areas where herbaceous weeds are too numerous to be removed manually, the Contractor may use an herbicide (refer to Special Specification 608S.4, J for list of pre-approved herbicides). Acceptable application methods include broadcast spray, wipe on foliage, and cut-stump treatment. Follow-up applications of herbicide may be necessary to eradicate certain well established plants. Contractor shall consult with and obtain prior written approval from the City when they anticipate use of an herbicide.

When fire ant mounds are present, Contractor shall use fire ant bait according to label directions. Refer to Special Specification 608S.4, J for list of acceptable fire ant bait. It is anticipated that a bait treatment will need to occur once in the Spring and once in the Fall.

## Article 609S.8 Payment

Add the following:

**Pay Item No. SP 609S-C1:** Native Grassland Seeding, seed spreader, per Square Yard

**Pay Item No. SP 609S-C2:** Native Grassland Seeding, Drill or Cultipacker Seeder, per Square Yard

**Pay Item No. SP 609S-C3:** Native Grassland Seeding, Bonded Fiber Matrix or Fiber Reinforced Matrix Hydromulch, per Square Yard

**End**

## **Special Specification 612**

### **Topsoil Mix**

#### **612.1 Description**

This item shall govern the furnishing and placing of topsoil mix to depths and areas shown on the Drawings or as directed by the Engineer or designated representative.

#### **612.2 Submittals**

The submittal requirements of this specification item shall include the test results and soil classification necessary for approval of material as suitable growing medium.

##### **A. Submittals Required Before Construction**

1. Current (no more than 90 calendar days before date of submittal) lab analysis report from a State of Texas qualified soil analytical laboratory that clearly demonstrates the proposed material is suitable topsoil mix for plant growth as described below. The tests shall include a particle-size analysis (soil texture), percentage of organic matter, pH, nutrient and micronutrient content, as well as indication of deleterious material, and recommendations on amendments.
2. A notarized statement from the producer of the soil attesting that the mix conforms to this specification.
3. A sample (2-gallon) of proposed planting mix shall be submitted to the Owner or their representative 30 calendar days before installation and be approved before installation. Sample should be labeled including type of material, specification number; name, address, and telephone number of manufacturer or supplier; and address of the location of the source or material stockpile.
4. A description of the location, equipment, and method proposed to mix the material.
5. The samples and analysis reports shall be submitted at the same time.

##### **B. Submittals Required During Construction**

1. Delivery tickets indicating type/product name, source and quantities of imported topsoil mix.
2. Written documentation regarding the soil mixing process, including techniques.

#### **612.3 Materials**

- A. Topsoil shall consist of material that is clean and friable soil capable of supporting plant life, and is free of stones, weeds, roots, and any other deleterious materials.
- B. Topsoil mix shall be a dark brown to black composted mix with moderate moisture content (40-50% of total weight) of approximately equal proportions of mineral soil and composted yard waste, and inoculated with leaf mold. The topsoil mix shall have been composted together in a static pile for at least 12 months, reaching a temperature of at least 150 degrees for at least 15 days. After composting, the topsoil mix shall be passed through a 3/8-inch screen to remove larger particles.
- C. The mineral soil component of the topsoil shall be an acceptable agricultural, homogeneous material meeting the USDA texture of a loam to sandy loam, with no particles greater than 1/8 inch. High clay content subsoils or soils with redoximorphic features (mottled) are not acceptable.

- D. The compost component shall be well decomposed, stable to very stable, weed-free organic matter source derived from yard trimmings or City approved alternate source. The Carbon/Nitrogen (C/N) ratio shall be less than 25:1 and trace metals test results should "pass". It shall not contain substances toxic to plants and shall not have objectionable odors. It shall not resemble the raw material from which it was derived, and shall be reasonably free of man-made foreign matter.

E. Mix Parameters:

Parameters	Optimal Range	Reported Units
pH	6.1 – 7.9	pH units
% O.M. Humus	4.5 – 7.0	%, dry weight basis
EC Salts	< 6.00*	mmhos/cm
Nitrate (NO <sub>3</sub> )	35 - 90	lbs/AC
Phosphate (P <sub>2</sub> O <sub>5</sub> )	50 - 100	lbs/AC
Potassium (K) H <sub>2</sub> O	75-100 (H <sub>2</sub> O); 80-125 (CO <sub>2</sub> )	ppm
Sodium (Na)	< 100 (H <sub>2</sub> O); < 175 (CO <sub>2</sub> )	ppm
Calcium (Ca) H <sub>2</sub> O	60-120 (H <sub>2</sub> O); 300-800 (CO <sub>2</sub> )	ppm
Magnesium (Mg) H <sub>2</sub> O	13-20 (H <sub>2</sub> O); 60-100 (CO <sub>2</sub> )	ppm
Zinc (Zn)	3-6	ppm
Iron (Fe)	11-21	ppm
Manganese (Mn)	10-20	ppm
Copper (Cu)	1.2 – 2.4	ppm

\* Compost-rich soil mixes should have EC Salts <3.00 mmhos/cm when used as topsoil substitute.

#### 612.4 Construction Methods

- A. The topsoil mix shall be protected from all sources of contamination, including weed seeds, from the supplier's yard to the project site.
- B. Areas to receive topsoil mix shall be free of construction debris, refuse, and rocks and earth clods over three inches.
- C. The material shall be placed in loose lifts, not to exceed eight inches each lift, and shall be compacted with a water-filled landscape roller. During installation the material shall be protected from other forms of compaction, including equipment and pedestrian traffic, to the extent possible. Storage of construction materials on top of the topsoil mix is prohibited.
- D. Where the proposed planting area is compacted the existing soil shall be tilled to a minimum depth of six inches before installation of the topsoil mix. For compacted areas in the critical root zone of trees, scarify to one inch maximum.
- E. The topsoil mix should not be placed if the ground is muddy, saturated, or frozen.
- F. For work in critical root zones of trees, all work must be done with hand tools (e.g., shovels, rakes).
- G. After placing and grading the soil mix, planting should commence as soon as possible to minimize possibility of erosion or further compaction. Erosion and sedimentation control devices following City of Austin guidelines are required until permanent stabilization is achieved.

**612.5 Measurement**

“Topsoil Mix ” will be measured by the cubic yard (cubic meter: 1 cubic meter equals 1.196 cubic yards), complete in place, as indicated in the Contract Documents.

**612.6 Payment**

This item will be paid for at the contract unit bid price for “Topsoil Mix.” The unit bid price shall include full compensation for all work specified herein, including the furnishing, hauling, placing of all materials; and for all equipment, tools, labor and incidentals necessary to complete the Work.

**Pay Item No. 612-A:** Topsoil Mix \_\_\_\_\_ Per Cubic Yard

**End**