

CITY OF BENTON CITY  
SECTION 9

STANDARD SPECIFICATIONS FOR:

LANDSCAPING

**9-1 LANDSCAPING**

**9-1.01 GENERAL**

The work covered in this section shall apply to the furnishing of all materials, labor, equipment, and other incidentals necessary for the installation of the landscaping as shown on the planting plan. The work includes clearing and grubbing, site excavation, embankment compaction, rough-site grading, finished site grading, provide topsoil ground preparation, fine grading, application of fertilizers, insecticides, soil sterilants, soil amendments, mulch, seeded or sodded lawn, protection, maintenance, guarantee of seeded or sodded lawn areas and all related items required by the plans and as indicated by the proposal bid items to complete the work in accordance with the plans and specifications.

The Contractor shall be experienced and have adequate facilities and personnel required for the work involved. The Contractor shall thoroughly acquaint himself with all work related to site improvements which might affect the work. Workmanship shall be equal to the best-accepted trade practices and shall comply with all applicable codes and trade regulations.

**9-2 EARTHWORK**

**9-2.01 GENERAL**

The work covered in this section shall consist of clearing and grubbing, excavation, embankment compaction and borrow excavation required to clear, shape, grade, and otherwise construct the site to the elevations as shown on the plans or as directed by the Engineer.

**9-2.02 MATERIALS**

It is the intent of these specifications to use on-site materials to form a smooth and uniform site, which conforms to the finished elevations as shown on the plans or as directed by the Engineer. Borrow material, which is required to fill project low areas when insufficient on-site excavation materials do not exist or are unacceptable for use, shall be provided by the Contractor. Embankment materials obtained at an off-site source shall be secured by the Contractor at his own expense. The Contractor shall receive written approval from the Engineer for any imported embankment materials prior to placing any such materials on the project site. The Contractor's attention is hereby called to the special provisions for additional information which may pertain to this project regarding borrow material.

**9-2.03 CONSTRUCTION**

A. Clearing and Grubbing

Removal and disposal of all objectionable brush, stumps, roots, logs, vegetation, fences, trash piles, and any other items which may be called out in the special provisions shall be done in accordance with the requirements of SWSS Section 2-01.

B. Excavation

Rough site grading shall be done in accordance with the requirements of SWSS Section 2-06 as herein modified. All unsuitable or excess materials shall be removed from the site and disposed of at a site provided by the Contractor unless otherwise specified in the special provisions or as directed by the Engineer.

C. Embankment Compaction

Onsite native materials determined by the Engineer to be suitable for embankment fill shall be spread and compacted to the line and grade as shown on the plans in accordance with the

requirements of SWSS Section 2-06 and shall be compacted in accordance with the requirements of SWSS Section 2-03.3(14) C Method C.

D. Borrow Excavation

Embankment materials which are required to be brought in from off-site sources shall be secured, hauled, and placed in accordance with the requirements of SWSS Section 2-03.3 (14) C Method C.

**9-2.04 MEASUREMENT AND PAYMENT**

A. The unit contract price for "Clearing and Grubbing," per lump sum, shall be full compensation for all labor, equipment, material, and all of the incidentals required to remove and dispose of all objectionable on-site materials in accordance with the plans and specifications or as directed by the Engineer.

B. The unit contract price for "Earthwork," per lump sum, shall be full compensation for furnishing all labor, equipment, materials, and all other incidentals required to haul, place, grade, and compact existing on-site materials or those materials secured from off-site sources in accordance with the plans and specifications or as directed by the Engineer.

**9-3 CLEAN-UP**

**9-3.01 GENERAL**

The Contractor shall be required to clean up daily during the progress of the work and upon completion, he shall clear and clean the site by removing all cans, surplus materials, and any debris resulting from his work operations. All planting areas shall be neatly dressed and finished. All walks, paved areas, adjacent walls, windows, and all such areas flushed clean by approved methods.

**9-3.02 MEASUREMENT AND PAYMENT**

All costs to clean up the project site as required shall be considered as incidental to the unit contract prices for the various other proposal bid items and no additional compensation will be allowed.

**9-4 SEEDING/LAWN ESTABLISHMENT**

**9-4.01 GENERAL**

The work covered in this section shall apply to the establishment of newly seeded/sodded ground cover, soil preparation, topsoil, fertilizer, and all other incidentals required to establish a vigorous and healthy growing lawn which will hereinafter be referred to as either planting material or ground cover.

**9-4.02 SOIL PREPARATION**

The Contractor shall remove and dispose of all undesirable surface plant growth, noxious weed seeds, rhizomes, roots and all other objectionable surface materials and debris at a waste site provided by the Contractor.

The Engineer shall then determine acceptability of on-site topsoil, which is suitable for reuse.

After the site has been rough-graded and all underground utilities have been completed, the Contractor shall smooth and finish the lawn and planting areas to the required cross section. The lawn and planting areas shall then be thoroughly scarified to a depth of six inches (6"). The Contractor shall remove all undesirable weeds, plant growth, and all clods, rocks, debris, and foreign materials two inches (2") or larger in any dimension from the top four inches (4") of scarified soil.

**9-4.03 MATERIALS**

A. Residual Soil Sterilant

Residual soil sterilants shall be applied in strict conformance to SWSS Section 5-04.3(5) D as herein modified. All ground surface areas on which asphaltic concrete pavement, crushed rock, or concrete is to be placed shall be treated as specified.

All herbicide containers delivered to the project site shall carry the manufacturer's product identification label. All empty herbicide containers shall be, as soon as is practical, removed from the project site and disposed of by the Contractor in accordance with the requirements of the Federal Pesticide Control Act.

Prior to applying any herbicide, the Contractor shall be required to post clearly visible public notices warning of the presence of the herbicides.

B. Topsoil

It is the intent of these specifications to salvage for reuse the on-site topsoil from the general excavation for landscape topsoil and finish around park amenities. If sufficient, suitable materials are not available on-site, the contractor shall import topsoil at the direction of the engineer. When required by the special provisions, or when indicated on the plans, proposal bid items or when directed by the Engineer, the Contractor shall be required to remove, stockpile and replace suitable on-site topsoil with the purpose of later replacing it in the same area. Any topsoil imported to the site shall be fertile and friable, possessing characteristics of representative productive soils in the vicinity. It shall not be excessively acid or alkaline, having a pH factor between six (6) and eight (8), and shall not contain any rock larger than one-inch (1") diameter, noxious weeds or weed seeds, oil or chemicals which may be injurious to plant growth. A sample of the topsoil shall be approved by the Engineer prior to delivery.

C. Fertilizer

Fertilizer shall be applied at a rate of four hundred (400) pounds per acre. Application shall be by an agitator type hydro-seeder or approved blower equipment.

Fertilizer for seeded lawn and lawn sod areas shall have the following formulation of total available ingredients:

Nitrogen - N 16%  
Phosphoric Acid P<sub>2</sub>O<sub>5</sub> 16%  
Potash - K<sub>2</sub>O 16%

The fertilizers shall be delivered to the site in manufacturer's packages with labels attached showing complete chemical composition and analysis.

D. Wood Cellulose Fiber Mulch

Wood cellulose fiber mulch shall be furnished, hauled, and evenly applied at a rate of 1500 pounds per acre within forty-eight (48) hours after seeding or the mulch material may be applied with the seed and fertilizer materials in one operation by approved hydraulic equipment. The equipment shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry of the specified amount of fiber, fertilizer, seed and water. Distribution and discharge lines shall be large enough to prevent stoppage and shall be equipped with a set of hydraulic discharge spray nozzles, which will provide a uniform distribution of the slurry.

The wood cellulose fiber mulch shall conform to the requirements of SWSS 9-14.4(2).

E. Lawn Seeding

Seeding of all lawn planting area shall be by one of the following methods:

1. Approved type hydro seeder, which utilized water as the carrying agent and maintains continuous agitation through paddle blades.
2. Blower or power-drive devices capable of maintaining a contact, measured rate of distribution of seed or fertilizer.
3. Approved power drawn drills or seeders.  
Seed shall be applied at a rate of 200 pounds per acre.

The Contractor shall be responsible for protecting all planting areas against vehicle and pedestrian traffic by use of approved warning signs and barricades. Planting areas which have been damaged through any cause prior to final inspection and areas failing to receive a uniform application at the specified rate, shall be reseeded, refertilized, and mulched at the Contractor's expense.

The seed mixture shall meet the requirements of applicable state laws, and shall contain no noxious weed seeds. The grass seed mixture for seeded lawn shall contain no more than 2 percent inert materials and shall meet the following requirements:

Common Name	Weight Proportion	Minimum Germination
Perennial Rye Grass	40%	90%
Fescue	29%	85%
Bluegrass	29%	85%

There shall be no less than three different types of rye grass and bluegrass contained within the percentage shown. Each different variety shall be resistant to diseases and climate conditions common to the Tri-City area. Within each classification, each grass type shall be resistant to harmful diseases or climatic conditions known to occur in, or cause damage to the other grass types provided. All grass seed to be used shall be submitted and approved prior to seeding. Submittal shall describe each grasses composition and resistant tendencies.

F. Water

Water for irrigation of ground cover and plant materials shall not contain dissolved or suspended matter, which will be harmful to plant material on which it is to be used. Upon completion of the irrigation system and after it has been approved for use by the Engineer, the Contractor may use the system to irrigate new planting areas.

G. Lawn Sod

Where shown on the plans or stated in the special provisions or as a Contractor's option to seeding lawn-planting areas, he shall furnish and place established healthy lawn sod material in accordance with the requirements SWSS Section 9-14.6(8) as herein modified.

The sod shall contain grasses in close proportions with that of the grass specified in Section E above, or approved equal. The sod shall have a proven field record of at least three years in this area or be certified to be adaptable and resistant to harmful climatic and disease tendencies for this region.

The sod shall be one (1)-year old minimum, healthy, thick, even strand of grasses, grown under intensive care and cultivation with rigid quality control, cut from fields not more than forty-eight (48) hours before delivery to project site.

The root system shall be sufficient to ensure survival and healthy growth.

**9-4.04 MAINTENANCE**

A. Planting Material Maintenance for Seed/Lawn Establishment

The Contractor shall ensure adequate and proper care of all planting material and work done on this project during construction until acceptance by the Engineer, all in accordance with SWSS Section 8-02.3(15) as herein modified. The Contractor shall keep all plant material in a healthy growing condition by watering, cultivating, spraying, fertilizing, mowing, and other incidental items of work, which may be required to maintain the lawn materials. The work shall

also include keeping the planted area free from insect infestation, weeds and grass, litter and other debris.

After the seeding/sod work on this project is completed and accepted by the Engineer, the Contractor shall be required to provide all maintenance on lawn areas until three (3) mowings have been completed. The contractor shall notify the project inspector prior to each of the three (3) required mowings. Any mowing done without proper notification shall not be considered as one of the three (3) required mowing cycles.

Should the seed/sod be done late in the year when no mowing is required due to little or no growth, the Contractor shall be responsible for the initial three (3) mowings in the spring.

The weeding, spraying (broadleaf) and control of diseases of the lawn area shall remain the responsibility of the Contractor until the three (3) mowings have been completed and one application of fertilizer and broadleaf has been applied by the Contractor. The fertilizer and broadleaf shall not be applied sooner than 30 days nor more than 60 days after the third mowing has been completed. The contractor shall notify the project inspector prior to applying broadleaf and fertilizer. Any application of broadleaf and fertilizer without proper notification shall not be considered as meeting the requirements of this section. At the city's discretion, additional applications of both broadleaf and fertilizer may be required.

The Contractor shall fertilize and spray for weed infestation at rates determined by the Contractor and approved by the Engineer. The fertilizer used between June and August shall consist of a slow release form of nitrogen fertilizer. Fertilizers and broadleaf shall be applied at a rate recommended by the manufacturer.

The Contractor shall furnish mowing machines, fertilizer spreaders, spreaders, tools, all labor, hose, and other water equipment, and other equipment required for the performance of lawn maintenance work until the end of the guarantee period.

At completion of the project maintenance period, the contractor shall be required to provide a recommended watering schedule to the city for any newly seeded or sodded areas. This is required to insure proper watering, lawn establishment and warranty of planted materials.

For projects where modifications have been done to the existing irrigation and landscaping, the contractor shall be required to work with the city to establish written watering schedules that meet the needs for newly planted materials and adjacent established landscaping. The contractor shall be responsible for providing a written watering schedule for newly planted areas and verifying times and rates are set properly throughout the maintenance period of the contract. The contractor shall also be responsible for working directly with city staff to adjust adjacent irrigation systems to prevent over/under watering of new and existing landscaping.

**B. Irrigation System**

The use of a new or existing underground irrigation system will be permitted to be used by the Contractor with the approval of the Engineer. The Contractor shall be responsible for any damage to the irrigation system, which may result from its use in irrigating the planted materials.

**9-4.05 MEASUREMENT AND PAYMENT**

Measurement and payment will be made for one or both of the following bid items as may be listed in the proposal:

- "Imported Topsoil" per cubic yard
- "Furnish and Install Seeded Lawn," per acre
- "Furnish and Install Sodded Lawn," per square yard

The unit contract price, per cubic yard, for "Imported Top Soil," shall be full compensation for all materials, equipment, labor and incidentals to provide and place imported Top Soil.

The unit contract price, per acre, for "Furnish and Install Seeded Lawn," and per square yard for "Furnish and Install Sodded Lawn," shall be full compensation for furnishing all labor, tools, equipment, materials, and all other incidentals required to prepare the seed bed, plant the lawn, apply fertilizer, mulch, water, weed control, lawn maintenance, installing and removing lawn area protective barriers required to establish the lawn area as specified, and shall be paid in the following sequence for healthy vigorous lawn.

1. Completion of lawn planting ...60% of individual areas
2. Completion of three mowings ...100% of individual areas

## 9-5 TREE AND SHRUB PLANTING

### 9-5.01 GENERAL

The work covered in this section shall apply to the furnishing, installation, care and maintenance of trees, shrubs, seeding and ground other than seeded/sodded lawn areas. Trees, shrubs, seedling, and ground cover shall hereinafter be collectively referred to as plants and shall be installed in accordance with the requirements of SWSS Section 8-02 as herein modified. All new trees shall be staked in accordance with City of Benton City Standard Drawings 9-1 and 9-2.

### 9-5.02 MATERIALS

- A. All plants shall be tagged as per SWSS Section 9-14.6(4) as herein modified.

Plants designated as "B&B" on the plant list are required to be supplied with their root system to be balled and burlapped.

- B. Planting mix shall be in accordance with the following requirements:

1. Provide a planting mix for backfilling of trees and shrubs, consisting of two parts approved topsoil and one part organic matter.
2. Organic matter shall be derived from sphagnum peat and/or pulverized, well-rotted, unleached cattle manure free from viable weed seeds, oil, or chemicals injurious to plant growth.

- C. Fertilizer for planting soil shall have the following formulation of total available ingredients:

Nitrogen -N- 20%  
Phosphoric Acid P2O5- 10%  
Potash K2O- 5%

The fertilizer shall be in 21-gram tablets and shall be "Agriform Planting Tablets," or approved equal.

Fertilizer shall be delivered to the site in the manufacturer's packages with labels attached showing complete chemical composition and analysis.

### 9-5.03 CONSTRUCTION

Planting shall meet the requirements of SWSS Section 8-02.3 as herein modified.

1. Tree locations shall be adjusted so that the tree is not directly in front of rotating or fixed spray, sprinkler heads. Trees requiring a bubbler sprinkler head for irrigation shall be planted not more than three (3) feet from the bubbler head.
2. All burlap shall be removed from root balls and/or all containers shall be completely removed at the time of planting.
3. The root ball shall be loosened and gently crumbled. The top of the root ball shall be gently loosened and remove to expose the "true" tree collar or root crown when planting (root balls

are generally mounded when dug and wrapped). The collar shall be set so that after any settlement that it is level with the adjoining finished grades. Girdling or encircling roots shall be gently loosened from the root ball and straightened. Any that cannot be straightened shall be cut with a sharp, neat cut, prior to planting. Planting mix, root ball material and native soil shall be mixed and used to backfill the prepared hole. After planting, the tree shall be watered so that the complete hole is filled and saturated with water and all air pockets have been removed.

4. When planting trees and or shrubs that are not contained within a curbed bed, the contractor shall place a minimum 4-foot diameter border ring filled with 3-inch depth shredded wood mulch around individual plantings. Group plantings shall be as depicted on the construction drawings or as staked by the engineer. The border shall be heavy-duty plastic 6-inch height landscape border. Individual rings shall be one piece and the joint shall be doweled with manufactured dowels made for joining and shall be staked in accordance with the manufacturer's recommendation. The border shall be placed such that the finished top of the border is a maximum 1.5-inches above the adjacent topsoil grade on the exterior of the border.

#### **9-5.04 MAINTENANCE OF TREE AND SHRUB PLANTS**

The Contractor shall provide all necessary maintenance of plant materials. The maintenance period shall run a minimum of ninety (90) days after the planting of the last plant. Maintenance shall be in accordance with the requirements SWSS Section 8-02.3(12) as herein modified. Maintenance shall include proper watering, plant saucer berming, pruning, mulching, resetting plants that become settled or out of plumb to the proper grades or upright position, staking, weeding, pesticide and fungicide spraying, fertilizing, plant replacement, and other necessary functions to bring all plant material to a vigorous, healthy growing condition throughout the maintenance period. The Contractor shall also guarantee plants in accordance with Section 9.06 of these specifications.

At conclusion of the ninety (90) day maintenance period, the contractor shall provide the city with a written watering schedule for newly planted materials. The contractor shall be responsible for monitoring the watering of the plant materials through the guarantee period established in Section 9-6 of these specifications. If, upon inspection, the contractor determines that the watering schedule needs to be changed, the contractor shall contact the project inspector and provide a written change to the watering schedule(s). The city shall work directly with the contractor to make all requested changes to the irrigation time clock in accordance with the contractor's instructions.

#### **9-5.05 INSPECTION FOR ACCEPTANCE**

At the conclusion of the maintenance period and upon written notice by the Contractor to the Engineer, an inspection of the planting shall be made to determine completion of contract work. After inspection, the Contractor will be notified in writing by the Engineer of acceptance of all work of this section, exclusive of the possible replacement of plants subject to guarantee, any deficiencies, or unfulfilled requirements for completion of the work. Work remaining to be done shall be subject to reinspection before acceptance.

At the end of the guarantee period, an inspection by the City will be made. Any plant which was installed under this contract and is dead, or not in satisfactory growth, or missing, shall be removed from the site and replaced with the same kind and size as specified in the plant list.

#### **9-5.06 MEASUREMENT AND PAYMENT**

The unit contract price for each type of tree or shrub, per each, as listed in the proposal bid items, shall be full compensation for furnishing all labor, materials, equipment, and all other incidentals necessary to furnish and install topsoil, planting mixture, planting materials, wood mulch in tree rings, plastic landscape border, fertilize, stake, locate, prune, replace defective plants, apply insecticides, and all maintenance work and guarantee periods required together with all other incidentals necessary to establish the plantings in accordance with the plans and specifications or as

directed by the Engineer. Wood mulch provided for group plantings or beds larger than 4-foot diameter shall be measured and paid as specified under Section 9.7, Shredded Wood Mulch.

**9-6 GUARANTEE**

At the conclusion of the maintenance periods as specified in Sections 9-04 and 9-05 of these specifications or upon final inspection and acceptance by the Benton City City Council, the Contractor shall begin a plant guarantee period, which shall be in effect for one full growing season from April 1 to October 1.

**9-7 SHREDDED WOOD MULCH**

**9-7.01 GENERAL**

All references to mulch, with the exception of the wood cellulose fiber mulch used for hydroseeding (Section 9-4.03 D) shall be as follows:

- 75 % (by volume) 2-inch to 5-inch shredded wood
- 25% (by volume) ¾-inch minus fine bark & wood dust

The mulch shall not contain resin, tannin, or other compounds in quantities that would be detrimental to plant life. The wood mulch shall be seed free. A sample of the shredded wood mulch shall be provided to the engineer and approved prior to delivery. The mulch shall be placed to a minimum depth of 3-inches or as specified in contract drawings or Special Provisions. The ground shall be prepared as specified in Section 9-4.02 and shall be even, vegetation free and lightly compacted prior to placement of the wood mulch. After placement, the shredded wood mulch shall be leveled, thoroughly wetted and lightly compacted.

**9-7.02 MEASUREMENT AND PAYMENT**

Shredded wood mulch for individual tree rings is incidental to the unit contract price for the tree planting as specified in Section 9-5.07. The unit contract price for "Shredded Wood Mulch", per square yard, shall be full compensation for furnishing all labor, materials, equipment and all incidentals required to provide, place, spread, wet and compact the wood mulch in planter beds and landscape areas in accordance with these specifications.