SECTION 642 – LANDSCAPE MAINTENANCE

642.01 Description. This section describes maintenance of planted areas through continued watering, weeding, fertilizing, mowing, reseeding, cultivating, spraying, mulching, trimming, edging, and other services necessary for care and upkeep of Highway plantings. This section also describes replacement of dead or damaged plants, cleaning and clearing of sidewalks, gutters, swales, and ditches within the contract limits; removal and disposal of trash and debris; and restoration of damaged irrigation facilities. This section does not apply to services provided during plant establishment period in accordance with Subsection 619.03(T) - Plant Establishment Period and Subsection 641.03(C) – Plant Establishment.

642.02 Materials.  
Irrigation System 616.02  
Planting 619.02  
Hydro-mulch Seeding 641.02  

The plans of areas to maintain will be located at the District Office.

642.03 Construction.  


(B) Plant Maintenance.  


(2) Turf and Ground Cover. Mow or cut turf and ground cover to height specified in the contract documents. Use string or line trimmers only around trees that are protected by tree guards.
(3) Restaking and Reguying. Restake, retighten or repair guys as necessary. Reset plants to their original position.

(4) Replanting. Notify the Engineer of trees, shrubs or ground cover that are not in good growing condition and need to be replaced. Remove and dispose of unwanted plants. Replace with stock from the State’s nursery; location will be designated in the contract documents. If State-furnished plants are not available, the Engineer will request a proposal and negotiate for plants.

(C) Weed Control. Keep planted areas at least 90 percent free of grasses that are incompatible with surroundings. The Engineer will decide compatibility. Keep hardscaping, including boulder and aggregate beds, free of weeds. Remove weeds by roots. Dispose of trash in appropriate containers. Apply herbicides in accordance with Section 619 – Planting. Obtain the Engineer’s acceptance of herbicidal program before proceeding.

(D) Disease and Insect Control.

(1) Inspection. Inspect plants, including lawn grass, every week for disease and insect infestation. Treat infected plants immediately. Prune trees and shrubs to remove damaged or diseased growth.

(2) Replacement. Remove immediately and replace dead or dying plants. Replace with species and size originally planted, or with plant obtained from the State’s nursery.

(E) Fertilization. Obtain the Engineer’s acceptance of fertilization schedule before proceeding. Fertilize in accordance with manufacturer’s recommendations. Exercise caution while fertilizing to prevent plant burn and excessive runoff.

(F) Irrigation Maintenance. Irrigate plants to sustain healthy growth. Keep ground moist but not saturated. Regulate rate of watering to prevent erosion and formation of gullies.

(1) System Operation.

(a) Water automatically as much as possible. Water manually if there is a problem with automatic system.

(b) Program automatic controllers to water between midnight and 7 a.m. Set earlier start time if it is extremely hot and plants need more water. Program drip systems to run at any time.
(c) Adjust program for seasonal and situational variations in need for water. Provide additional personnel and materials if needed during extremely hot weather, during extended holiday periods, and in event of breakdown of automatic system.

(d) Turn off irrigation system if it is raining and ground is damp enough to sustain plants.

(e) Restore immediately neighboring properties that are damaged by excessive irrigation. The Contractor will be responsible for cost of these repairs.

(f) Adjust irrigation program weekly at controller. Set initially each valve station for peak use, assuming hottest season and longest run time. Change run time every week, using controller's percentage function, to fit situation at site.

(2) System Repair.

(a) Keep controller and valve boxes clear of dirt and debris. Replace, repair, adjust, and perform other work to irrigation system to ensure continued optimal performance.

(b) Replace or repair equipment as needed due to normal wear and tear, including mains, laterals, filters, screens, drip emitters, control valves, control wiring, controllers, back-up batteries, quick coupler valves, sprinkler heads, risers, sleeves, valve boxes, pullboxes, lids, covers, and hose bibbs.

(c) Notify the Engineer immediately of damage to irrigation system during course of the contract due to vandalism, theft, accidents caused by others, and acts of God. The State will be responsible for these repairs and can negotiate additional cost with the Contractor if report is made promptly.

(d) Replace irrigation components using new and original equipment. The State will allow substitute equipment only if original has been discontinued, there is no other source, and the State receives written request.

(e) Perform repairs in accordance with the contract documents for original installation of irrigation system.

(f) The State will not consider alteration of irrigation system to be landscape maintenance.
(3) **System Maintenance.** Assign employee to become familiar with irrigation system and to run system manually at least once a week. Employee’s responsibilities shall include:

(a) Observing efficiency of watering, adjusting controllers for optimal performance, making minor adjustments and repairs.

(b) Checking watering for coverage and waste, cleaning and adjusting sprinkler heads as necessary, keeping drip emitters free of sediment, flushing drip systems once a year and whenever there is accumulation of sediment.

(c) Watching for broken sprinkler heads, damaged emitters, clogs, malfunctioning valves, leaks, and other performance-hampering situations.

(d) Being alert especially for plants that show signs of wilting. The Contractor will be responsible for plants that die from lack of water.

(4) **Equipment Repair.**

(a) **Quick Coupler Valves.** Replace flange packing, which will be leather or neoprene, when packing becomes worn through use.

(b) **Remote Control Valves.** Repair remote control valve if there is leak, valve does not open or close, or valve causes constant weeping of sprinkler heads. Replace defective part in accordance with manufacturer’s instructions in repair kit. Before reassembling valve, clean parts that will be needed for bleeding.

(c) **Ball Valves.** Replace ball valve that is faulty.

(d) **Sprinkler Heads.**

1. Use adjustment points to reset arc and radius of sprinkler heads that are overspraying. To clear clogs, remove internal assembly, clean screen filter, thread fine wire through orifice of nozzle, and reassemble head. Run test to confirm that clog has been cleared. Clean screen filters at least once a month. Replace screens that are damaged.
2. If sprinkler head has broken away from lateral, remove head, excavate, and replace damaged fitting, riser, or pipe section. Consult as-built drawings for type and size of nozzle if head needs to be replaced. Turn on remote control valve and thoroughly flush system to remove sediment. Backfill site carefully to avoid throwing dirt onto sprinkler head.

(e) **Drip Emitters.** Check operation of drip system at least once a month. Replace drip emitters that are clogged and emitter bug caps that are missing. Stake drip tubing securely to keep emitters on surface of aggregate mulch. Restake tubing that has been loosened by raking or weeding.

(f) **Controller.** Controller is malfunctioning if any of the following occurs:

1. Remote control valve does not turn on or off.
2. Remote control valve stays on longer than programmed.
3. Remote control valve turns on by itself.
4. Two or more remote control valves turn on when only one was programmed.
5. Data screen displays gibberish.

Obtain services of certified manufacturer’s representative to repair or replace controller.

(G) **Cleanup.**

(1) Keep drainage ditches, swales, and gutters free of dirt, mud, rocks, leaves, paper, bottles, cans, and other debris. Collect and dispose of debris.

(2) The State is responsible for maintaining drainage culverts under roadways, ramps, and embankments. Notify the Engineer if blocked culverts are encountered during landscape maintenance.

(H) **Coordination and Reports.**

(1) Before commencing landscape maintenance, meet in field with the Maintenance Engineer, Engineer, and State Landscape Architect to observe site conditions and review contracted work.
Provide five days advance notification to the Engineer for scheduling of this meeting.

(2) Maintenance requirements are subject to adjustment as plants mature. Coordinate work with the State Landscape Architect to allow for timely changes.

(3) Schedule periodic walk-throughs with the Engineer to ensure that work is being done in accordance with the contract.

(4) Provide written status report, detailing the following:

(a) Watering, fertilizing, herbicidal treatment, and insecticidal treatment scheduled for current month.

(b) Landscape maintenance tasks that were completed during previous month.

Submit status report to the Engineer by tenth day of month, or next working day if tenth day falls on weekend or holiday.

642.04 Measurement. The Engineer will measure plant maintenance and irrigation maintenance per month in accordance with the contract documents.

642.05 Payment. The Engineer will pay for the accepted plant maintenance and irrigation maintenance at the contract unit price per month, as shown in the proposal schedule. Payment will be full compensation for the work prescribed in this section and the contract documents.

The Engineer will pay for each of the following pay items when included in the proposal schedule:

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<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
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<tbody>
<tr>
<td>Plant Maintenance</td>
<td>Month</td>
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<tr>
<td>Irrigation Maintenance</td>
<td>Month</td>
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END OF SECTION 642