

# CITY OF LATHROP

## Department of Public Works

### *Design & Construction Standards*



2022

**TABLE OF CONTENTS**

SECTION 8 LANDSCAPE AND PLANTING STANDARDS .....	8-1
8-1 GENERAL.....	8-1
8-2 CERTIFICATE OF COMPLIANCE.....	8-1
8-3 MEASUREMENT OF QUANTITIES .....	8-1
8-4 MATERIALS.....	8-1
8-5 CONDITIONS .....	8-1
8-6 SUBMITTALS .....	8-4
8-7 INSPECTIONS .....	8-5
8-8 SCHEDULING .....	8-6
8-9 SUBSTITUTIONS.....	8-6
8-10 PREPARING PLANTING AREAS .....	8-6
8-11 PLANTING - GENERAL.....	8-8
8-12 PLANT ESTABLISHMENT.....	8-12
8-13 WEED CONTROL .....	8-12
8-14 WATERING .....	8-13
8-15 START OF MAINTENANCE PERIOD INSPECTION.....	8-13

## SECTION 8 LANDSCAPE AND PLANTING STANDARDS

### 8-1 GENERAL

These general requirements provide conditions for all landscape operations in the public right-of-way and on City property including landscaping at the back of sidewalk and the center medians, roundabouts and in public parks. This section applies to all Landscape installation activities.

Landscape planting shall consist of preparing and planting areas as shown on the approved Plans, and as directed by the City Engineer.

All landscape and planting designs shall be designed in accordance with the State of California Model Water Efficient Landscape Ordinance and LMC 17.92.

### 8-2 CERTIFICATE OF COMPLIANCE

A Certificate of Compliance shall be furnished to the City Engineer with each lot of material delivered to the work and the lot so certified shall be clearly identified in the certificate.

All materials used on the basis of a Certificate of Compliance may be sampled and tested at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the work in conformance with the Plans and Specifications and any such material not conforming to such requirements is subject to rejection, whether in place or not.

### 8-3 MEASUREMENT OF QUANTITIES

Measurement of Quantities shall be determined by the City Engineer based on delivery tags presented at time of delivery. The Contractor shall give twenty-four (24) hours' notice of all deliveries, dates and times. Materials delivered when the Engineer is not present, depending on verifiability, at Engineer's discretion, may not be counted.

### 8-4 MATERIALS

Materials shall conform to these Specifications and the approved plans.

### 8-5 CONDITIONS

#### A. Existing Conditions:

1. Prior to work, the Contractor shall be thoroughly familiar with any

surveys and investigative reports directly related to the work to be performed.

2. Contractor shall examine physical conditions at the site, document all conditions differing from those indicated in the contract documents, and inform the City immediately.

**B. Environmental Requirements:**

1. Contractor shall be aware of, and adhere to, any regulations protecting special plants, wildlife, and natural environmental features present on the project site.
2. Contractor shall be aware of and conform to dirt and dust abatement requirements and water pollution prevention programs.

**C. Site Protection:**

1. The Contractor shall protect and maintain all existing site improvements, structures, facilities, and utilities from damage, both above and below the ground.
2. Trees, shrubs and other materials which are to remain on the site shall be fully protected by constructing a fence around the items to be protected or other method approved by the City Engineer.
3. Grading around protected trees shall be limited to outside the dripline unless specifically approved by the City of Lathrop. Once grading plans have been approved no grades shall be modified without the approval of the City Engineer.
4. Any tree well graded should be drained to some outfall or swale.
5. No trenching shall occur beneath the drip line of any protected trees unless approved by the City of Lathrop. If approved, grading plans shall bear a statement reading "TRENCHING UNDER THIS TREE IS APPROVED"
6. The following conditions shall apply to ensure preservation of existing trees:
  - a. Each tree or group of trees to be saved shall be fenced by a chain-link fence prior to any grading or movement of heavy equipment or issuance of any permits.

- b. Fencing shall be located one foot outside the drip line of the tree or group of trees.
- c. Signs shall be posted on all sides of said fence stating:

WARNING:  
 THIS FENCE SHALL NOT BE REMOVED  
 OR RELOCATED WITHOUT WRITTEN  
 AUTHORIZATION FROM THE  
 CITY OF LATHROP

- 7. Parking of vehicles or storage of equipment and materials shall not occur, at any time, under the drip line of trees.

**D. Underground Utilities:**

- 1. Contractor shall notify UNDERGROUND SERVICE ALERT at (USA North) at “\*811” or (800) 642-2444 at least 48 hours prior to commencing any excavation.
- 2. Contractor shall relocate or remove existing utilities as shown on the plans or as directed by the City Engineer. Where utilities are marked, careful hand excavation shall be done to determine exact alignment and depth prior to starting excavations within marked areas.

**E. Safety:**

- 1. Contractor shall at all times exercise necessary precautions to provide for the protection of the public and employees.
- 2. Adequate barricades, flashers, fences, signs, and lights shall be installed in all hazardous locations including, but not limited to, open excavations and areas of pedestrian and vehicular traffic. All situations requiring traffic control shall conform to the appropriate Caltrans Traffic Control Manuals and the Caltrans Manual on Uniform Traffic Control Devices.

3. All hazardous materials including, but not limited to, gasoline, solvents, and other similar materials shall be stored in a safe and protected manner, in accordance with City and health regulations.
- F. Equipment:
1. Contractor shall provide and maintain all equipment to perform the work.

#### 8-6 SUBMITTALS

- A. Modifications and Revisions: Contractor shall submit proposed modifications and revisions prior to performing work.
- B. As-Built (Record) Drawings: Upon final completion of the work, the Contractor shall furnish accurate, up-to-date RECORD drawings that include as-built conditions and any and all changes from the original plans made during the installation of the improvements.
- C. Operation Manuals, Maintenance Instructions and Warranties: Prior to final acceptance of work, the Contractor shall provide to the City three copies of manufacturers' written operation and maintenance instructions for all equipment installed within the public right-of-way or within areas that the City may be responsible for maintenance and operation.

The Contractor shall provide a signed letter to the City guaranteeing that the irrigation system has been installed free from defects in materials and workmanship and that the work has been completed in accordance with the drawings and specifications. The letter shall state an agreement, by the Contractor, to repair or replace any defects in materials or workmanship that may develop within one year following final acceptance.

- D. Soils Evaluation: The Contractor shall obtain a soil evaluation of all native or import topsoil for use within the area that work is to be performed. Total number of samples shall be based on accepted standards of the industry. A minimum of four (4) one-quart samples shall be evaluated by a City approved soil testing facility. All samples shall be obtained, tested and with test results submitted to the Engineer for review 14 days prior to beginning work. No material shall be delivered to the site, graded on-site, or otherwise modified until the Engineer approves the material.
- E. Submit a list of soil amendments and fertilizers to be used per the soils tests and a schedule identifying:
1. When amendments and fertilizers will be on site.

2. How and where they will be stored.
  3. When they will be integrated into planting.
  4. Where empty containers will be kept on site.
- F.** Two (2) weeks prior to planting, Contractor shall submit a list of project plant material to the City for review and approval. This list shall identify:
1. Botanical and common name.
  2. Container size.
  3. Source and location.
  4. Minimum height and spread specifications for each type of material identified on the plant legend.
- G.** Amendment Samples: The Contractor shall provide a one-quart sample of each proposed amendment to a City approved soil testing facility for their testing for conformance to these specifications. No material shall be delivered to the site until the Engineer approves the samples.
- H.** Substitute Plant Material: The Contractor shall submit notice to the Engineer indicating any unavailable plant material and include proposed plant substitutions. No substitute plants shall be ordered or delivered prior to written acceptance by the Engineer.
- I.** Post-Amendment Soils Report: Prior to the beginning of the maintenance period, the Contractor shall obtain a soil evaluation of amended topsoil from the site. A minimum of four (4) one-quart samples shall be evaluated by a City approved soil testing facility. All samples shall be obtained, tested and with test results submitted to the Engineer for review and verification of compliance with pre-amendment soil testing recommendations.

## 8-7 INSPECTIONS

The Contractor shall specifically request, at least two days in advance, the following reviews prior to progressing with the work:

1. Completion of rough grading
2. Verification of amendment incorporation depths
3. Finish grade

4. Plant material approval
5. Plant layout
6. Substantial completion

#### 8-8 SCHEDULING

Scheduling of start and completion shall be agreed upon in writing between the Contractor and the City.

#### 8-9 SUBSTITUTIONS

Substitutions of any item shall not be permitted without prior written approval of the City Engineer.

#### 8-10 PREPARING PLANTING AREAS

Existing flow lines shall be maintained while preparing planting areas.

Material displaced by the Contractor's operations which interferes with drainage shall be removed and disposed of as directed by the City Engineer.

In planting areas where native topsoil is to be left in place, cross rip to a depth of ten inches (10"). Then incorporate amendments to a homogeneous blended soil depth of six inches (6").

Soil shall be cultivated until the condition of the soil is loose and fine-textured to a depth of six inches (6"). Alternately the top six (6") of soil may consist of quality imported top soil homogeneously blended with required amendments.

The top two inches (2") shall be clear of stones, debris and incompatible foreign matter.

Rock and other debris, larger than one inch (1") in diameter, which is brought to the surface during soil preparation, shall be properly disposed of off the project site by the Contractor.

Finish grade of all planting areas shall be reviewed and approved by the Engineer before proceeding with planting.

After 14 days, the area shall be allowed to dry to a condition that any spray equipment will not damage the existing grades.



Weeds shall be sprayed with an approved, post-emergent herbicide, which controls both broadleaf plants and grasses, but which will not contaminate the soil. Substances shall be approved by the City Engineer prior to use.

The use of rubber-tired equipment will be permitted for cultivating operations provided that any unacceptable compaction caused by the equipment used is completely corrected, to the satisfaction of the City Engineer.

Soil in lawn areas adjacent to curbs or paved areas shall be graded so that after settlement, the soil shall be no more than one-half inch (1/2") below adjacent paving.

Plant pits shall be excavated and prepared in accordance with the standard details. Backfill material for the sides of the plant pits shall be a mixture of soil amendment and soil. The proportion of material per plant pit and the quantity of soil amendment shall be as determined by soils analysis, and sufficiently consolidated or surcharged so that after settlement, the backfill material in the plant pit will be even with finish grade. The materials shall be thoroughly mixed to the bottom of the plant pit so that they are evenly distributed and without clods or lumps.

#### 8-10.1 Soil Amendment

Soil amendments shall be the following types, unless otherwise indicated and approved on the Plans.

- A. Organic Amendment shall be composted bark composed of ninety-five (95%) of the material passing through a one-fourth inch (1/4") screen, fifty percent (50%) through a one-eighth inch (1/8") screen. Material shall be stabilized with Nitrogen (1/2 lb. actual nitrogen per cubic yard) and shall not contain more than 5,000 ppm soluble salt. The material shall weigh a minimum of 450 pounds per cubic yard by dry weight. Identifiable wood pieces are acceptable but a balance of material should be soil-like in appearance without recognizable grass or leaves.
- B. No planting shall be allowed until all soil amendment delivery tags are received and quantities used are approved by the City Engineer.

#### 8-10.2 Commercial Fertilizer

Fertilizer composition and quantity shall be determined from soils analysis results.

Commercial fertilizer shall be uniformly sized, in a homogenous pellet form and shall be guaranteed to comply with the chemical analysis specified in the Commercial fertilizer, and shall be noted and approved on the plans.

Before applying any fertilizer, the Contractor shall provide the following submittals to the City Engineer for approval.

1. Written description of the material to be used.
2. Rate of application.
3. Method of application.
4. Name of applicator.
5. Diagram of area to which material is to be applied.

#### 8-11 PLANTING - GENERAL

Plantings shall be in accordance with the following provisions and approved by the City Engineer:

- A. Landscaping shall comply with the State Model Water Efficient Landscape Ordinance (MWELo).
- B. Plants shall be the variety and sizes shown on the Plans and shall conform to the requirements of these specifications.

Minimum quality of all plant material shall conform to prevailing published specifications of the California Association of Nurserymen and the American Association of Nurserymen's "American Standard for Nursery Stock", and the California Department of Forestry and Fire Protection "Specification Guidelines for Container-Grown Landscape Trees" unless otherwise indicated or approved by the Engineer.

- C. No planting shall be done in any areas until the area concerned has been prepared in accordance with these Specifications and the Special Provisions and presents a neat and uniform appearance satisfactory to the City Engineer.
- D. Planting shall not be allowed in any area which in the opinion of the City Engineer is too wet or dry or in any other way unacceptable for planting.
- E. No more plants shall be placed than can be completed and watered on that day.
- F. Plants shall be set in the backfill material in flat bottomed holes to such depth that after the soil has settled the top of the plant ball shall be one inch (1") above the bottom of the basin or even with the surrounding soil where there is no basin. Plants shall be planted in such a manner that the roots will not

be restricted or distorted. Soil shall not be compacted around the roots or ball of the plant during or after planting operations.

- G.** Any plants which have settled deeper or stand higher than specified in the above paragraph shall be adjusted to required level or replaced at Contractor's option.
- H.** Plants shall be spaced as indicated in the Contract Documents. Plants in adjacent rows shall be staggered. Groundcover plants shall not be planted closer than three feet (3') to trees or shrubs nor closer than eighteen inches (18") to curbs, paved areas and fences, unless otherwise shown on the Plans.
- I.** Planting areas that have been compacted for any reason, either before or after planting, shall be re-cultivated by the Contractor, at Contractor's expense.
- J.** Trees, shrubs and vines in ground-cover areas shall be planted before groundcover plants or cuttings are planted.
- K.** At the time the plants are planted, stakes shall be placed at certain plants and the plants shall be tied thereto. The plants to be staked and the size of stake and number of ties to be installed shall be as shown on the Plans or specified in the Special Provisions. Stakes shall be placed against, but not through, the plant ball and shall be placed 90 degrees from the prevailing wind.
- L.** Soil shall be watered so that the soil is moist, not soggy, or dried out.
- M.** From the time plants are planted until the beginning of the plant establishment period, plants shall be watered, trash and debris shall be removed daily, weeds shall be controlled and replacements shall be made.
- N.** At the time of planting, commercial fertilizer shall be applied to all trees, shrubs, vines, groundwater areas and lawn areas as specified in the Contract Documents

Upon review, the City reserves the right to conduct a site investigation of the proposed plant materials. Contractor shall demonstrate to the City Representative that all plant material has been located and reserved for the project.

All plants shall comply with Federal and State laws requiring inspection for plant diseases and infestations. Any inspection certificates required by law shall accompany each shipment of plants and certificates shall be delivered to the Engineer.

The Contractor shall obtain clearance from the County Agriculture Commissioner as required by law before planting plants delivered from outside the County.

Evidence that such clearance has been obtained shall be filed with the City Engineer.

All plants furnished by the Contractor shall be true to type or name as shown on the Plans and shall be tagged in accordance with the standard practice recommended by the American Association of Nurserymen.

Contractor furnished plants shall be healthy, shapely and well rooted. Roots shall show no evidence of having been restricted or deformed. Plants shall be well grown, free from insects, disease or mechanical injury. No plants shall be transplanted to any planting area that is not thoroughly wet throughout the ball of earth surrounding the roots.

Plants may be inspected by the Engineer prior to planting. Any plants rejected shall be removed from the site and replaced by the Contractor, at Contractor's expense.

#### 8-11.1 **Planting – Shrubs, Vines and Groundcover**

Shrub, vine and groundcover planting shall be in accordance with the following provisions and approved by the City Engineer:

- A. Where vines are to be planted against walls or fences, the plants shall be as close as practicable to the wall or fence as shown in the plans.
- B. Where shrubs are shown on the Plans to be planted in groups, the outer rows shall be parallel to the nearest pavement or fence.
- C. Any adjustment in the number of plants shall be made between the outer rows.
- D. Ground cover plants in areas equipped with an irrigation system shall be planted in blocks which conform to the design of the irrigation system. The area covered by one unit of the irrigation system shall be as completely planted as possible, and then watered. Not more than one (1) hour shall elapse from the time any groundcover is planted until it has been watered, unless otherwise specified in the Contract Documents or authorized by the City Engineer.
- E. Groundcover plants shall be planted in moist soil and in neat, straight rows parallel to the nearest pavement, curb or fence, unless otherwise previously approved by the City Engineer in a planting plan.

#### 8-11.2 **Planting - Trees**

Tree plantings shall be in accordance with the following provisions and approved by the City Engineer:

- A.** Trees shall have soil removed down to the buttress roots. Roots shall be teased out to get correct spread and direction for correct growth of tree with minimal damage to the existing root system. Plants shall be removed from the containers in such a manner that the ball of earth surrounding the roots remains intact, and they shall be planted and watered as hereinafter specified immediately after removal from the containers.
- B.** After planting, trunk flares (root crown) of trees shall be evident and free of any container soil and/ or planting backfill. The root flare shall be slightly above the surface of the surrounding soil at all times.
- C.** When planting on a sloped site, the top-most root in the root ball shall be even with the grade on the uphill side of the tree.
- D.** Tree stock shall be protected from excessive vibration, should not be thrown or bounced off mobile equipment. Trees shall not be dragged, lifted or pulled by the trunk or foliage in a manner that will loosen the root ball.
- E.** Trees shall exhibit no circling root conditions or evidence of untreated root bound container stock.
- F.** Trees shall be planted in an upright position.
- G.** Tree planting pits shall be backfilled to avoid large air pockets or voids within the backfill soil profile.
- H.** All synthetic materials (i.e. string, rope, plastic, etc.) shall be removed from the tree trunk and root ball prior to planting and shall not be evident within the backfill soil mix.
- I.** Any support trunk staking supplied with the container tree shall be removed prior to planting.
- J.** Trees located in parkway strips shall be provided with a 5-foot bark mulch area around their trunk.
- K.** Tree Stakes for all trees shall be Reddy Stakes (9-foot size) as available from Horizon.
- L.** Trees planted in grass shall be provided with ArborGard Tree Trunk Protectors or other as approved by the City Engineer.
- M.** Root Barriers shall be polyethylene or materials with similar characteristics specifically manufactured for the purpose of redirecting root growth away from sidewalk or paved areas. Barriers shall be assembled and interlocked

together to form one continuous barrier at the locations and depths as shown on the plans.

#### 8-12 **PLANT ESTABLISHMENT**

Plant establishment work shall consist of caring for the project landscape planting.

Plant establishment period shall continue through final acceptance of the project, and plants shall thrive showing proper growth characteristics through the warranty period.

The Contractor shall fill trench settlement, adjust sprinkler heads, water plants, replace unacceptable plants and lawn areas, and perform weed, rodent and other pest control work to the satisfaction of the City Engineer.

Lawns first cut shall be mowed when grass is no less than three inches (3") high and shall be cut to a height of no less than one and one-half inches (1-1/2").

Thereafter, lawn shall be mowed as often as necessary to maintain a maximum height of one and one-half inches (1-1/2").

Weed control, shall be performed as often as required to prohibit interference with plantings and to maintain the project in a neat and uniform condition to the satisfaction of the City Engineer.

At the time of final acceptance of the work, all planted areas shall be weed free and neatly mowed, as applicable, and shall receive a second application of fertilizer as determined by the City Engineer.

Surplus earth, papers, trash and debris, in any planted areas shall be removed and disposed of. The planted areas shall present a neat and clean condition at all times.

#### 8-13 **WEED CONTROL**

Bermuda grass and other weeds in the areas to be planted with trees, shrubbery and groundcover shall be completely killed and removed. After planting, above areas shall be treated with pre-emergent such as "Surfland", or approved equal.

Before applying any chemicals, the Contractor shall provide the following information and obtain written approval of the materials to be used from the City Engineer:

1. Material Safety Data Sheets

2. Rate of application
3. Method of application
4. Name of applicator
5. Diagram of area to which material is to be applied

If special permits are required for the materials to be used, they shall be obtained from the County Agriculture Commissioner or appropriate authority, and submitted with the request for the use of the materials.

#### 8-14 **WATERING**

Water from facilities within the limits of the project may be obtained as noted in the development agreement.

Water conservation principles are strongly recommended. Watering shall be done between the hours of 10:00 p.m. and 6:00 a.m. whenever possible.

All plants shall be watered immediately after planting. Water shall be applied in a moderated rate until the backfill soil around and below the roots or ball of earth around the roots of each plant is thoroughly saturated.

Following planting, provide a minimum of weekly watering during the dry season for all trees.

Precautions shall be taken to prevent water from wetting vehicles, pedestrians and pavement. Any erosion or slippage of the soil caused by watering shall be repaired by the Contractor, at Contractor's expense.

Compliance with the provisions in this section shall not relieve the Contractor of the responsibility for the replacement of plants. Any additional watering measure required to maintain the plants in growing condition shall be furnished by the Contractor, at Contractor's expense.

#### 8-15 **START OF MAINTENANCE PERIOD INSPECTION**

After all planting work is completed the Contractor shall schedule the pre-final inspection with the City Engineer.

##### 8-15.1 **Pre-final Inspection**

In preparation for entering the maintenance period, the Engineer, Landscape Architect and Contractor will conduct a pre-final inspection. The City Parks Superintendent and the maintenance personnel who will be responsible for the

project will be present to acquaint them with the operational requirements of the project and any submitted O&M manuals or operating instructions. At this time, all systems shall be tested and proper operation verified.

### 8-15.2 Replacement

All plants or lawn areas that show signs of failure to thrive anytime or which are injured or damaged as to render them unsuitable for the purpose intended as determined by the City Engineer shall be removed and replaced. The City Engineer may inspect the work weekly or at any interval of time at City discretion and will mark or otherwise indicate all plants or lawn areas to be replaced. The Contractor shall complete replacement of unsuitable plants or lawn areas within one week of notification.

Replacement plants shall be furnished and planted by the Contractor, at Contractor's expense. The City Engineer may agree to the substitution of alternative species of plants to be used as replacements.

Any damage to the finish grading prior to final acceptance caused by re-planting operations and/or vandalism shall be repaired and re-planted by the Contractor, at Contractor's expense. Damage caused by premature or heavy use of facilities before final acceptance will be determined by the City Engineer.

Lawn damages shall be repaired before final inspection but will not automatically be considered cause for extending the maintenance period.

Lawn or plant failure caused by improper maintenance practices and/or weather shall be removed and re-planted.

### 8-15.3 Maintenance and Warranty Period

The Maintenance period shall begin immediately after the (60) day plant walk of public improvements.

All landscaping shall be maintained for a minimum period of ninety (90) days after pre-final inspection/substantial completion, unless otherwise indicated by the City Engineer.

The warranty period for the landscaping portions of the work (trees, shrubs, plants, grass, irrigation system, etc.) will begin after the installation of all landscape items are complete in accordance with the Plans and Specifications. Unacceptable landscape items must be replaced and final inspection performed by the City Engineer before final acceptance is granted.

Contractor shall be responsible for defective materials and faulty workmanship at all stages of the work in progress. Upon relinquishing care, custody, and control of



the improvements, the Contractor shall be responsible for defective materials and faulty workmanship for one year for all plant materials (including trees) and all other work.

Any damages to site improvements and facilities under the Contractor's control shall be corrected prior to acceptance of said improvements.

#### **8-15.4 Final Inspection**

At the end of the maintenance period a final inspection will be held. If all items listed on the punch list are corrected and no other problems have developed, the landscape portion of the project will be accepted and the Contractor will be relieved of responsibility for the work, except for maintenance, warranties or guarantees. The Contractor shall schedule the final inspection with the City Engineer.

**END OF SECTION**