

Appendix J: Tariff Rule 14.1 Water Conservation and Rationing Plan, and Local Conservation Ordinances

- Tariff Rule and Schedule 14.1
- Lancaster Water Waste Ordinance
- Lancaster Landscape Ordinance
- Palmdale Efficient Landscape Ordinance

This tariff has been approved by the
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Cal. P.U.C. Sheet No. xxxxx -W

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Cal. P.U.C. Sheet No. 10202 -W

Rule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN (continued)

(Page 1)

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A. APPLICABILITY

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- 1. This schedule applies to all of California Water Service’s regulated ratemaking areas in California, as well as Grand Oaks Water.

B. GENERAL INFORMATION

- 1. All expenses incurred by utility to implement Rule 14.1, and Schedule 14.1, and requirements of the California State Water Resources Control Board (“Water Board”) that have not been considered in a General Rate Case or other proceeding shall be accumulated by Cal Water in a separate memorandum account, authorized in Resolution W-4976, for disposition as directed or authorized from time to time by the Commission.
- 2. To the extent that a Stage of Mandatory Water Use Restrictions in Schedule 14.1 has been activated, and a provision in this Rule is inconsistent with the activated Stage in Schedule 14.1, the provisions of Schedule 14.1 apply.

C. DEFINITIONS

For the purposes of this Rule, the following terms have the meanings set forth in this section.

- 1. “Commercial nursery” means the use of land, buildings or structures for the growing and/or storing of flowers, fruit trees, ornamental trees, vegetable plants, shrubs, trees and similar vegetation for the purpose of transplanting, for use as stock or grafting, and includes the retail sale or wholesale distribution of such items directly from the premises/lot.
- 2. “Drip irrigation system” means a non-spray, low-pressure, and low volume irrigation system utilizing emission devices with a precipitation or flow rate measured in gallons per hour (GPH), designed to slowly apply small volumes of water at or near the root zone of plants or other landscaping.
- 3. “Flow rate” means the rate at which water flows through pipes, valves, and emission devices, measured in gallons per minute (GPM), gallons per hour (GPH), inches per hour (IPH), hundred cubic feet (Ccf), or cubic feet per second (CFS).
- 4. “Flow-restricting device” means valves, orifices, or other devices that reduce the flow of potable water through a service line, which are capable of passing a minimum of 3 Ccf per person, per month, based upon the U.S. Census calculation of the average number of people in a household in the area.
- 5. “High-efficiency sprinkler systems” means an irrigation system with emission devices, such as sprinkler heads or nozzles, with a precipitation or flow rate no greater than one IPH.
- 6. “Irrigation” means the application of potable water by artificial means to landscape.
- 7. “Irrigation system” means the components of a system meant to apply water to an area for the purpose of irrigation, including, but not limited to, piping, fittings, sprinkler heads or nozzles, drip tubing, valves, and control wiring.
- 8. “Landscape” means all of the outdoor planting areas, turf areas, and water features at a particular location.
- 9. “Measureable rainfall” means any amount of precipitation of more than one-tenth of an inch (0.1”).
- 10. “Micro spray irrigation system” means a low-pressure, low-volume irrigation system utilizing emission devices that spray, mist, sprinkle, or drip with a precipitation or flow rate measured in GPH, designed to slowly apply small volumes of water to a specific area.

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Rule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN (continued)

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C. DEFINITIONS (Continued)

- 11. "Ornamental landscape" means shrubs, bushes, flowers, ground cover, turf, lawns, and grass planted for the purpose of improving the aesthetic appearance of property, but does not include crops or other agricultural products or special landscape areas.
- 12. "Ornamental turf" means a ground cover surface of grass that can be mowed and is planted for the purpose of improving the aesthetic appearance of the property, but does not include crops or other agricultural products or special landscape areas.
- 13. "Plumbing fixture" means a receptacle or device that is connected to a water supply system, including, but not limited to, pipes, toilets, urinals, showerheads, faucets, washing machines, water heaters, tubs, and dishwashers.
- 14. "Potable water" means water supplied by Cal Water which conforms to the federal and state standards for human consumption.
- 15. "Properly programmed" means a smart irrigation controller that has been programmed according to the manufacturer's instructions and site-specific conditions.
- 16. "Real-time water measurement device" means a device or system that provides regularly updated electronic information regarding the customer's water use.
- 17. "Runoff" means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape onto other areas.
- 18. "Smart irrigation controller" means an automatic device used to remotely control valves that operate an irrigation system that has been tested by an American National Standards Institute accredited third-party certifying body or laboratory in accordance with the Environmental Protection Agency's WaterSense program (or an analogous successor program), and certified by such body or laboratory as meeting the performance and efficiency requirements of such program, or the more stringent performance and efficiency requirements of another similar program.
- 19. "Special landscape area" means an area of the landscape dedicated solely to edible plants and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.
- 20. "Turf" means a ground cover surface of grass that can be mowed.
- 21. "Water feature" means a design element where open, artificially supplied water performs an aesthetic or recreation feature, including, but not limited to, ponds, lakes, waterfalls, fountains, and streams.
- 22. "Water use evaluation" means an evaluation of the efficiency of indoor water-using devices, including, but not limited to, measurement of flow rates for all existing showerheads, faucets, and toilets, inspection for leaks, and providing written recommendations to improve the efficiency of the indoor water-using fixtures and devices and/or an evaluation of the performance of an irrigation system, including, but not limited to, inspection for leaks, reporting of overspray or runoff, and providing written recommendations to improve the performance of the irrigation system.

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Rule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN (continued)

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D. ENFORCEMENT

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Each Stage of this Rule establishes certain restrictions on the use of potable water. Violating the restrictions set forth in a particular Stage while it is in effect is declared a non-essential, wasteful use of potable water. Subject to the schedule and conditions outlined below, Cal Water is authorized to install a flow-restricting device on the service line of any customer when its personnel verify a customer is using potable water for non-essential, wasteful uses. No person shall have any right or claim in law or in equity, against Cal Water because of, or as a result of, any matter or thing done or threatened to be done pursuant to the restrictions on using potable water for non-essential, wasteful uses.

1. **FIRST VIOLATION:** Cal Water shall provide the customer with a written notice of violation.
2. **SECOND VIOLATION:** If Cal Water verifies that the customer has used potable water for non-essential, wasteful uses after having been notified of the first violation, Cal Water shall provide the customer with a second written notice of violation and is authorized to install a flow-restricting device on the customer's service line. Cal Water shall not be held liable for any injuries, damages, and/or consequences arising from the installation of a flow restricting device.
3. **NOTICES OF VIOLATION:**
 - A. Written notices of violation provided to customers pursuant to this Rule shall document the verified violation and alert the customer to the fact that future violations of the restricted uses of potable water may result in the installation of a flow-restricting device on the customer's service line or the discontinuation of the customer's service.
 - B. If Cal Water elects to install a flow-restricting device on a customer's service line, the written notice of violation shall explain that a flow-restricting device has or will be installed on the customer's service line, document the steps the customer must take in order for the flow-restricting device to be removed, and explain that after the flow-restricting device is removed, it may be reinstalled, without further notice, if the customer is again verified by Cal Water's personnel to be using potable water for non-essential, wasteful uses.
4. **FLOW RESTRICTING DEVICE CONDITIONS:** The installation of a flow-restricting device on a customer's service line is subject to the following conditions:
 - a. The device shall be capable of providing the premise with a minimum of 3 Ccf per person, per month, based upon the U.S. Census calculation of the average number of people in a household in the area.
 - b. The device may only be removed by Cal Water, and only after a minimum three-day period has elapsed.
 - c. Any tampering with the device may result in the discontinuation of the customer's water service and the customer being charged for any damage to Cal Water's equipment or facilities and any required service visits.

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WATER SHORTAGE CONTINGENCY PLAN (continued)

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F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

- 2. PUBLIC NOTICE: Thirty (30) days prior to implementing a mandatory staged reduction in water use in this Rule, Cal Water shall notify its customer of the requirements of the particular stage implemented by Cal Water by bill insert, direct mailing, email, or bill message directing the customer to additional information on Cal Water's website.
- 3. STAGE 1 WATER SHORTAGE: A Stage 1 Water Shortage occurs when Cal Water, the Commission, a wholesale water supplier, or other authorized government agency determines that measures are needed to reduce water consumption by customers served by public water suppliers. In addition to the prohibitions outlined in **Section E**, the following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency:
 - a. Outdoor Irrigation Restrictions (Stage 1)
 - i. Irrigating ornamental landscapes with potable water is limited to no more than **three (3) days** per week, on a schedule established and posted by Cal Water on its website or otherwise provided to customers by bill message, bill insert, direct mail, or email, or as follows:
 - 1. Customers with even-numbered addresses may irrigate on Saturdays, Tuesdays, and Thursdays.
 - 2. Customers with odd-numbered addresses may irrigate on Sundays, Wednesdays, and Fridays.
 - 3. Customers without a street address may irrigate on Saturdays, Tuesdays, and Thursdays.
 - 4. Notwithstanding the foregoing restrictions, irrigation of special landscape areas or commercial nurseries may occur as needed, provided that the customer who wishes to irrigate a special landscape area or commercial nursery presents Cal Water with a plan to achieve water use reductions commensurate with those that would be achieved by complying with foregoing restrictions.
 - 5. Notwithstanding the foregoing restrictions, when a city, county, or other local public agency in one of Cal Water's service areas duly adopts restrictions on the number of days or hours of the day that customers may irrigate which are different than those adopted by Cal Water, Cal Water may enforce the city, county, or other local public agency's restrictions.
 - ii. Irrigating ornamental landscape with potable water is prohibited during the hours between **8:00 a.m. and 6:00 p.m.**
 - iii. The foregoing restrictions do **not** apply to:
 - 1. Landscape irrigation zones that exclusively use drip irrigation systems and/or micro spray irrigation system;

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WATER SHORTAGE CONTINGENCY PLAN (continued)

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F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 1 (cont.)]

- 2. Irrigating ornamental landscapes with the use of a hand-held bucket or similar container, with a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored, or for the express purpose of adjusting or repairing an irrigation system.
- b. **Obligation to Fix Leaks, Breaks or Malfunctions:** All leaks, breaks, or other malfunctions in the customer's plumbing fixture(s) or irrigation system(s) must be repaired within **five (5) business days** of written notification by Cal Water, unless other arrangements are made with Cal Water.
- c. **Prohibited Uses of Water:** Customers are prohibited from using potable water for the following actions:
 - i. The application of potable water to driveways and sidewalks;
 - ii. The use of potable water in a water feature, except where the water is part of a recirculating system;
 - iii. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall.
- d. Other duly adopted restrictions on the use potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.
- 4. **STAGE 2 WATER SHORTAGE:** A Stage 2 Water Shortage occurs when the Stage 1 Water Shortage restrictions are deemed insufficient to achieve identified water use goals established by Cal Water, the Commission, a wholesale water supplier, or other authorized government agency. In addition to the prohibited wasteful water use practices listed in Section D, the following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency. Differences from or additions to the previous Stage are underlined.
 - a. **Outdoor Irrigation Restrictions (Stage 2)**
 - i. Irrigating ornamental landscapes with potable water is limited to no more than **three (3) days** per week, on a schedule established and posted by Cal Water on its website or otherwise provided to customers by bill message, bill insert, direct mail, or email, or as follows:
 - 1. Customers with even-numbered addresses may irrigate on Saturdays, Tuesdays, and Thursdays.
 - 2. Customers with odd-numbered addresses may irrigate on Sundays, Wednesdays, and Fridays.

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WATER SHORTAGE CONTINGENCY PLAN (continued)

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F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 2 (cont.)]

3. Customers without a street address may irrigate on Saturdays, Tuesdays, and Thursdays.
 4. Notwithstanding the foregoing restrictions, irrigation of special landscape areas or commercial nurseries may occur as needed, provided that the customer who wishes to irrigate a special landscape area or commercial nursery presents Cal Water with a plan to achieve water use reductions commensurate with those that would be achieved by complying with foregoing restrictions.
 5. Notwithstanding the foregoing restrictions, when a city, county, or other public agency in one of Cal Water's service areas duly adopts restrictions on the number of days or hours of the day that customers may irrigate which are different than those adopted by Cal Water, Cal Water may enforce the city, county, or other local public agency's restrictions.
- ii. Irrigating ornamental landscape with potable water is prohibited during the hours between **8:00 a.m. and 6:00 p.m.**
- iii. The foregoing restrictions do **not** apply to:
1. Landscape irrigation zones that exclusively use drip irrigation systems and/or micro spray irrigation system;
 2. Irrigating ornamental landscapes with the use of a hand-held bucket or similar container, a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored, or for the express purpose of adjusting or repairing an irrigation system.
- b. **Obligation to Fix Leaks, Breaks or Malfunctions:** All leaks, breaks, or other malfunctions in the customer's plumbing fixture(s) or irrigation system(s) must be repaired within **three (3) business days** of written notification by Cal Water, unless other arrangements are made with Cal Water.
- c. **Prohibited Uses of Water:** Customers are prohibited from using potable water for the following actions:
- i. The application of potable water to driveways and sidewalks;
 - ii. The use of potable water in a water feature, except where the water is part of a recirculating system;
 - iii. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall;
 - iv. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;

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WATER SHORTAGE CONTINGENCY PLAN (continued)

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F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 2 (cont.)]

- v. Irrigation of ornamental landscape on public street medians;
 - vi. Irrigation outside of newly constructed homes and buildings with potable water in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.
 - d. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language.
 - e. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Rule.
 - f. Other duly adopted restrictions on the use of potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.
5. STAGE 3 WATER SHORTAGE: A Stage 3 Water Shortage occurs when the Stage 2 Water Shortage restrictions are deemed insufficient to achieve identified water use goals established by Cal Water, the Commission, a wholesale water supplier, or other authorized government agency. In addition to the prohibited wasteful water use practices listed in Section D, the following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency. Differences from or additions to the previous Stages are underlined.

a. Outdoor Irrigation Restrictions

- i. Irrigating ornamental landscapes with potable water is limited to no more than **two (2) days** per week, on a schedule established and posted by Cal Water on its website or otherwise provided to customers by bill message, bill insert, direct mail, or email, or as follows:
 1. Customers with even-numbered addresses may irrigate on Saturdays and Tuesdays (previous Stages allowed Thursdays as well).
 2. Customers with odd-numbered addresses may irrigate on Sundays and Wednesdays (previous Stages allowed Fridays as well).
 3. Customers without a street address may irrigate on Saturdays and Tuesdays (previous Stages allowed Thursdays as well).

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WATER SHORTAGE CONTINGENCY PLAN (continued)

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F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 3 (cont.)]

- 4. Notwithstanding the foregoing restrictions, irrigation of special landscape areas or commercial nurseries may occur as needed, provided that the customer who wishes to irrigate a special landscape area or commercial nursery presents Cal Water with a plan to achieve water use reductions commensurate with those that would be achieved by complying with foregoing restrictions.
- 5. Notwithstanding the foregoing restrictions, when a city, county, or other local public agency in one of Cal Water's service areas duly adopts restrictions on the number of days or hours of the day that customers may irrigate which are different than those adopted by Cal Water, Cal Water may enforce the city, county, or other local public agency's restrictions.
- ii. Irrigating ornamental landscape with potable water is prohibited during the hours between **8:00 a.m. and 6:00 p.m.**
- iii. The foregoing restrictions do **not** apply to:
 - 1. Landscape irrigation zones that exclusively use drip irrigation systems and/or micro spray irrigation system;
 - 2. Irrigating ornamental landscapes with the use of a hand-held bucket or similar container, a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored, or for the express purpose of adjusting or repairing an irrigation system.
- b. **Obligation to Fix Leaks, Breaks or Malfunctions:** All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within **two (2) business days** of written notification by Cal Water, unless other arrangements are made with Cal Water.
- c. **Prohibited Uses of Water:** Customers are prohibited from using potable water for the following actions:
 - i. The application of potable water to driveways and sidewalks;
 - ii. The use of potable water in a water feature, except where the water is part of a recirculating system;
 - iii. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall;
 - iv. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;
 - v. Irrigation of ornamental turf on public street medians;
 - vi. Irrigation outside of newly constructed homes and buildings with potable water in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.
 - vii. Use of potable water for street cleaning with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible);

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WATER SHORTAGE CONTINGENCY PLAN (continued)

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F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 3 (cont.)]

- viii. Use of potable water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.
 - d. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language.
 - e. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Rule.
 - f. Other duly adopted restrictions on the use of potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.
6. STAGE 4 WATER SHORTAGE: A Stage 4 Water Shortage occurs when the Stage 3 Water Shortage restrictions are deemed insufficient to achieve identified water use goals established by Cal Water, the Commission, a wholesale water supplier, or other authorized government agency. In addition to the prohibited wasteful water use practices listed in Section D, the following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency. Differences from or additions to the previous Stage are underlined.
- a. Irrigating ornamental landscape with potable water is prohibited, except when a hand-held bucket or a similar container, or a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored is used to maintain vegetation, including trees and shrubs.
 - b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the customer's plumbing fixtures or irrigation system must be repaired within **one (1) business day** of written notification by Cal Water, unless other arrangements are made with Cal Water.

Prohibited Uses of Water: Customers are prohibited from using potable water for the following actions:

- i. The application of potable water to driveways and sidewalks;
- ii. The use of potable water in a water feature, except where the water is part of a recirculating system;
- iii. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall;

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WATER SHORTAGE CONTINGENCY PLAN (continued)

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F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 4 (cont.)]

iv. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;

[Note that items previously identified as (v) and (vi) in Stage 3 have been eliminated.]

v. Use of potable water for street cleaning with trucks (the previous Stage allowed certain exceptions);

vi. Use of potable water for construction purposes, such as consolidation of backfill, dust control, or other uses (the previous Stage allowed certain exceptions).

c. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language.

d. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Rule.

f. Other duly adopted restrictions on the use of utility-supplied potable water as prescribed from time to time by the Commission or other authorized government agencies, commissions, or officials are incorporated herein by reference.

G. ADOPTION OF STAGED MANDATORY WATER USE REDUCTIONS (for Schedule 14.1)

1. ADDITION OF SCHEDULE 14.1: If, in the opinion of Cal Water, more stringent water conservation measures are required due to supply conditions or government directive, Cal Water may request the addition of a Schedule No. 14.1 – Staged Mandatory Water Use Reductions, via a Tier 2 advice letter.

A. Cal Water may not activate Schedule No. 14.1 until it has been authorized to do so by the California Public Utilities Commission, as delegated to its Division of Water and Audits.

B. A Schedule No. 14.1 that has been authorized by the California Public Utilities Commission shall remain dormant until triggered by specific conditions detailed in the Schedule 14.1 tariff and Cal Water has requested and received authorization for activating a stage by the California Public Utilities Commission.

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WATER SHORTAGE CONTINGENCY PLAN (continued)

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G. ADOPTION OF STAGED MANDATORY WATER USE REDUCTIONS (for Schedule 14.1) (continued)

- c. Notice of the Tier 2 advice letter and associated public participation hearing, if required, shall be provided to customers through a bill insert or a direct mailing, as set forth in Subsection 5 (Public Notice) below.
- d. Cal Water shall comply with all requirements of Sections 350-358 of the California Water Code.
- e. The Tier 2 advice letter requesting the addition of a Schedule No. 14.1 shall include, but not be limited to:
 - i. A proposed Schedule No. 14.1 tariff, which shall include but not be limited to:
 - 1. Applicability,
 - 2. Territory applicable to,
 - 3. A detailed description of each stage of water budgets (the number of stages requested for a ratemaking area may vary depending on the specifics of the water shortage event),
 - 4. A detailed description of the trigger(s) that activates each stage of water budgets,
 - 5. A detailed description of each water use restriction for each stage of water budgets,
 - 6. Water use violation levels, written warning levels, associated fines, if applicable, and exception procedures,
 - 7. Conditions for installation of a flow restrictor,
 - 8. Charges for removal of flow restrictors, and
 - 9. Special conditions
 - ii. Justification for, and documentation and calculations in support of the water budgets.

2. Conditions for Activating Schedule No. 14.1: Cal Water may file a Tier 1 advice letter to request activation of a particular stage of its Schedule No. 14.1 tariff if:

- a. Cal Water, the California Public Utilities Commission, wholesale water supplier, or other government agency declares an emergency requiring mandatory water budgets, mandatory water rationing, or mandatory water allocations; or
- b. A government agency declares a state of emergency in response to severe drought conditions, earthquake or other catastrophic event that severely reduces Cal Water's water supply; or
- c. Cal Water is unable to achieve water conservation targets set by itself; or
- d. Water conservation targets set by itself or a governing agency are insufficient; or
- e. Cal Water chooses to subsequently activate a different stage of its Schedule No. 14.1 tariff.

(continued)

(To be inserted by utility)

Advice Letter No. 2167-A

Decision No. -

Issued by

PAUL G. TOWNSLEY

NAME

Vice President

TITLE

(To be inserted by Cal. P.U.C.)

Date Filed _____

Effective _____

Resolution No. _____

This tariff has been approved by the
California Public Utilities Commission.

 New
Canceling

Cal. P.U.C. Sheet No. _____
Cal. P.U.C. Sheet No. _____

Rule No. 14.1

(N)

WATER SHORTAGE CONTINGENCY PLAN (continued)

(Page 13)

G. ADOPTION OF STAGED MANDATORY WATER USE REDUCTIONS (for Schedule 14.1) (continued)

- a. Include, but not be limited to, a justification for activating the particular stage of mandatory water use reductions, as well as the period during which the particular stage will be in effect.
 - b. Be accompanied by the customer notification measures detailed in sub-section 5 (Public Notice) below.
4. De-Activating Schedule No. 14.1: When Schedule No. 14.1 is activated and Cal Water determines that water supplies are again sufficient to meet normal demands, and mandatory water use reductions are no longer necessary, Cal Water shall seek the approval of the California Public Utilities Commission, via a Tier 1 advice letter, to deactivate the particular stage of mandatory water use reductions that had been authorized.
5. Public Notice
- a. When Cal Water requests the addition of a Schedule 14.1 – Staged Mandatory Water Use Reductions Tariff, via a Tier 2 advice letter, it shall provide notice of the Tier 2 advice letter and associated public hearing provided to customers through bill inserts or direct mailing, and it shall comply with all requirements of Sections 350-358 of the California Water Code (CWC), including but not limited to the following:
 - i. In order to be in compliance with both the General Order 96-B and CWC, notice shall be provided via both newspaper and bill insert/direct mailing.
 - ii. One notice shall be provided for each advice letter filed, that includes both notice of the filing of the Tier 2 advice letter as well as the details of the public hearing (date, time, place, etc.).
 - iii. The public meeting shall be held after the Tier 2 advice letter is filed, and before the Commission authorizes the addition of Schedule 14.1 to the tariff except in cases of emergency water shortages approved by DWA.
 - iv. Cal Water shall consult with Division of Water and Audits staff prior to filing advice letter, in order to determine details of public meeting.
 - b. In the event that Schedule No. 14.1- Staged Mandatory Water Use Reductions Tariff is triggered, and Cal Water requests activation through the filing of a Tier 1 advice letter, Cal Water shall notify its customers and provide each customer with a summary of Schedule No. 14.1 by means of bill insert or direct mailing. Notification shall take place prior to imposing any penalties associated with this plan. If activation of Schedule No. 14.1 occurs one year or more since the public hearing associated with adding Schedule 14.1 to its tariffs, then Cal Water shall conduct a public hearing pursuant to California Water Code Section 351 prior to activating a stage of its Mandatory Water Use Reduction Tariff.
 - c. During the period that a stage of Schedule No. 14.1 is activated, Cal Water shall provide customers with updates in at least every other bill, regarding its water supply status and the results of customers' conservation efforts.

[end]

(N)

(To be inserted by utility)
Advice Letter No. 2167-A
Decision No. -

Issued by
PAUL G. TOWNSLEY
NAME
Vice President
TITLE

(To be inserted by Cal. P.U.C.)
Date Filed _____
Effective _____
Resolution No. _____



May 27, 2015

Advice Letter No. 2168-A

CALIFORNIA WATER SERVICE COMPANY (U 60 W)

To The Public Utilities Commission of the State of California:

California Water Service Company (“Cal Water”) hereby transmits for filing the following changes in its tariffs:

New/Revised C.P.U.C. Sheet No.	Title of Sheet	Schedule No.	Cancelling C.P.U.C. Sheet No.
xxxxx-W	Schedule No. 14.1 (Pages 1 – 14)	Not Applicable	xxxxx-W
xxxxx-W	Table of Contents (Page 1)	Not Applicable	xxxxx-W
xxxxx-W	Table of Contents (Page2)	Not Applicable	xxxxx-W

Summary

Via this Tier 2 advice letter, Cal Water requests Commission approval to add Schedule 14.1, which contains the Staged Mandatory Reductions and Drought Surcharges associated with its Water Shortage Contingency Plan. This filing is consistent with Resolution W-5034, adopted by the Commission on April 9, 2015, ordering compliance with requirements of the State Water Resources Control Board. Cal Water requests an effective date of **June 1, 2015**.

This supplement to AL 2168 makes several changes to the language in the originally-proposed Schedule 14.1, some of which correct typographical and formatting errors, and some of which are substantive, as discussed below.

Background

The Division of Water and Audits, with input from interested parties, substantially modified the sample Rule 14.1 originally provided in the July 2007 SP U-40 document. The result – “Example Rule 14.1” – is now contained in the Drought Procedures adopted in Res. W-4976.



CALIFORNIA WATER SERVICE COMPANY

Advice Letter 2168-A – Addition of Schedule 14.1 – Drought Surcharges

Page 2

In Advice Letter 1881, Cal Water sought, and the Commission approved, a proposed Rule 14.1 that was based upon the sample Rule 14.1 in Standard Practice U-40-W (“SP U-40”), dated July 2007. Cal Water’s Rule 14.1 became effective on September 15, 2008.

On February 27, 2014, the Commission adopted Drought Procedures in Resolution No. (“Res.”) W-4976. Appendix B to those Drought Procedures contains an “Example of Rule 14.1” that modifies the sample Rule 14.1 in the July 2007 version of SP U-40. For Class A and B water companies like Cal Water that have an existing Rule 14.1, Ordering Paragraph (“OP”) 2 of Res. W-4976 requires the submission of a letter notifying the Division of Water & Audits (“DWA”) that the companies are activating their Tariff Rule 14.1 to call for a 20% voluntary reduction in water use. Cal Water submitted that notification to DWA on March 28, 2014.

Discussion

In Resolution W-5034, the Commission articulated the steps that its regulated water utilities should take to comply with the mandatory use restrictions and penalties for violations established by the State Water Resources Control Board (“Water Board”). As required by that resolution, Cal Water submits the attached proposed Schedule 14.1.

In addition, Cal Water has been holding the public hearings required by California Water Code Sections 350 *et seq.* as follows:

District/Service Area	In May	Time	Location
Los Altos	11 Mon	6 p.m.	Covington School 201 Covington Road, Los Altos, CA 94024
East Los Angeles	12 Tues	5:30 p.m.	City building TBD
Dominguez (Rancho Dominguez)	12 Tues	6 p.m.	Customer Center 2632 West 237th St., Torrance, CA 90505
Lucerne (Redwood Valley District)	12 Tues	6 p.m.	Lucerne Elementary School 3351 Country Club Drive, Lucerne, CA 95458
Palos Verdes (Rancho Dominguez)	13 Wed	6 p.m.	Customer Center 2632 West 237th St., Torrance, CA 90505
Guerneville (Redwood Valley District)	13 Wed	6 p.m.	Guerneville Elementary School 14630 Armstrong Woods Road, Guerneville, 95446
Visalia	13 Wed	6 p.m.	Visalia Marriott 300 South Court St., Visalia, CA 93291
Oroville	14 Thurs	5:30 p.m.	Customer Center 1905 High Street, Oroville, CA 95965



CALIFORNIA WATER SERVICE COMPANY

Advice Letter 2168-A – Addition of Schedule 14.1 – Drought Surcharges

Page 3

District/Service Area	In May	Time	Location
Dixon	14 Thurs	6:45 p.m.	Dixon Senior/Multi-Use Center 201 South Fifth St., Dixon, CA 95620
Selma	14 Thurs	6 p.m.	Selma City Hall 1710 Tucker St., Selma, CA 93662
Salinas	18 Mon	6 p.m.	Customer Center 254 Commission St., Salinas, CA 93901
Willows	18 Mon	6 p.m.	Willows City Hall
South San Francisco (Bayshore District)	19 Tues	6 p.m.	City of SSF Orange Park – Joseph A. Fernekes Bldg 781 Tennis Drive, South San Francisco, CA 94080
Bear Gulch	19 Tues	6 p.m.	Las Lomas Elementary School - Cano Hall
Mid-Peninsula (Bayshore District)	20 Wed	5:30 p.m.	Customer Center 341 N. Delaware St., San Mateo, CA 94401
Livermore	20 Wed	6 p.m.	Livermore City Council Chambers 3575 Pacific Ave., Livermore, CA 94550
Westlake	20 Wed	6 p.m.	Evanstar Clubhouse 1040 Evanstar, XXXX
Hermosa-Redondo (Rancho Dominguez)	21 Thurs	6 p.m.	Customer Center 2632 West 237th St., Torrance, CA 90505
King City	21 Thurs	6 p.m.	City Hall Council Chambers 212 S. Vanderhurst Ave., King City, 93930
Bakersfield	21 Thurs	6 p.m.	Operations Center 3725 South H St., Bakersfield, CA 93304
Antelope Valley	26 Tues	6 p.m.	Leona Valley Community Building 8367 Elizabeth Lake Road, Leona Valley, CA 93551
Marysville	27 Wed	5:30 p.m.	Customer Center 131 D Street, Marysville, CA 95901
Chico	27 Wed	6 p.m.	City Council Chambers 95927 421 Main St., Chico, CA
Stockton	28 Thurs	5:30 p.m.	Operations Center 1602 E. Lafayette St., Stockton, CA 95205
Kern River Valley	28 Thurs	6 p.m.	Moose Lodge 6732 Lake Isabella Blvd., Lake Isabella, 93240

This supplement corrects several typographical and formatting errors. In addition, in response to concerns expressed by customers, this supplement makes the following substantive changes to the Schedule 14.1 originally proposed in AL 2168, changes that are mirrored in the supplement to AL 2167 also being submitted today:



- Adding a definition for “ornamental lawns” and modifying related water use restrictions.
- Eliminating the water use prohibition on the filling and re-filling of single-family, residential swimming pools.
- Modifying the advice letter to activate stages from Tier 1 to Tier 2.
- Adding specific details relating to the appeals procedures, banking procedures, water budgets, and drought surcharges.

Tier Designation

Pursuant to Resolutions W-4976 and W-5034, Cal Water submits this as a Tier 2 advice letter.

Requested Effective Date

Cal Water requests that this advice letter become effective on **June 1, 2015**.

Notice

Customer Notice – Cal Water is providing customer notice of this Tier 2 filing via a bill message, a bill insert, or separate mailing.

Service Lists – In accordance with General Order 96-B, General Rule 4.3 and 7.2 and Water Industry Rule 4.1, a copy of this **supplement** will be mailed or electronically transmitted on **May 27, 2015**, to competing and adjacent utilities and other utilities or interested parties having requested such notification.

Response or Protest

Anyone may respond to or protest this advice letter. A response supports the filing and may contain information that proves useful to the Commission in evaluating the advice letter. A protest objects to the advice letter in whole or in part and must set forth the specific grounds on which it is based. These grounds are:

- (1) The utility did not properly serve or give notice of the advice letter;
- (2) The relief requested in the advice letter would violate statute or Commission order, or is not authorized by statute or Commission order on which the utility relies;
- (3) The analysis, calculations, or data in the advice letter contain material error or omissions;
- (4) The relief requested in the advice letter is pending before the Commission in a formal proceeding; or



- (5) The relief requested in the advice letter requires consideration in a formal hearing, or is otherwise inappropriate for the advice letter process; or
- (6) The relief requested in the advice letter is unjust, unreasonable, or discriminatory (provided that such a protest may not be made where it would require relitigating a prior order of the Commission.)

A protest shall provide citations or proofs where available to allow staff to properly consider the protest. A response or protest must be made in writing or by electronic mail and must be received by the Division of Water and Audits within 20 days of the date this advice letter is filed. The advice letter process does not provide for any responses, protests or comments, except for the utility's reply, after the 20-day comment period. The address for mailing or delivering a protest is:

Tariff Unit, Division of Water and Audits, 3rd floor
California Public Utilities Commission,
505 Van Ness Avenue, San Francisco, CA 94102
water_division@cpuc.ca.gov

On the same date the response or protest is submitted to the Division of Water and Audits, the respondent or protestant shall send a copy by mail (or e-mail) to us, addressed to:

Darin Duncan
California Water Service Company
1720 North First Street,
San Jose, California 95112
Fax 408/367-8430 or
E-mail dduncan@calwater.com

Cities and counties that need Board of Supervisors or Board of Commissioners approval to protest should inform the Division of Water and Audits, within the 20-day protest period, so that a late filed protest can be entertained. The informing document should include an estimate of the date the proposed protest might be voted on.

Replies

The utility shall reply to each protest and may reply to any response. Each reply must be received by the Division of Water and Audits within 5 business days after the end of the protest period, and shall be served on the same day to the person who filed the protest or response. If you have not received a reply to your protest within 10 business days, contact California Water Service Company at 408/367-8200.



CALIFORNIA WATER SERVICE COMPANY

Advice Letter 2168-A – Addition of Schedule 14.1 – Drought Surcharges

Page 6

_____/s/_____
Natalie D. Wales
Regulatory Counsel

Enclosures

cc: Ting-Pong Yuen, ORA

CALIFORNIA PUBLIC UTILITIES COMMISSION DIVISION OF WATER AND AUDITS Advice Letter Cover Sheet				(Date Filed / Received Stamp by CPUC)	
AL #2168- A	Date Mailed to Service List: May 27, 2015	Requested Effective Date: June 1, 2015		Requested Tier: <input type="checkbox"/> Tier 1 <input checked="" type="checkbox"/> Tier 2 <input type="checkbox"/> Tier 3	
Replacing AL#: #2168	Authorized by: Resolutions W-4976 and W-5034	Compliance Filing? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Rate Impact	\$	None
				%	None
<u>The public has 20 days from Date Mailed (above) to protest this advice letter. If you chose to protest or respond to the advice letter, send Protest and/or Correspondence within 20 days to:</u>				Director Division of Water and Audits 505 Van Ness Ave. San Francisco, CA 94102	
<u>and if you have email capability, also email to:</u>				water_division@cpuc.ca.gov	
<u>Your protest also must be served on the Utility</u>			(see attached advice letter for more information and grounds for protest)		
Company Name: California Water Service Company				CPUC Utility	
Address: 1720 North First Street				Number:	
City, State, Zip: San Jose, CA 95112				WTA U-60-W	
Contact Name:		Phone No.	Fax No.	Email Address:	
r	NATALIE WALES	408-367-8566	408-367-8340	nwales@calwater.com	
nate	DARIN DUNCAN	408-367-8227	408-367-8340	dduncan@calwater.com	
Description: In this space or on the back of this form: 1. Explain justification for requested Tier – Res. W-4976 and W-5034 2. Describe service affected and how it is affected – Drought surcharges and penalties 3. Describe differences from related Advice Letters (Similar service, replacement filing) – replacement for AL 2168					
(FOR CPUC USE ONLY)					
WTS Budget/Activity/Type _____/_____/_____			Process as: <input type="checkbox"/> Tier 1 <input type="checkbox"/> Tier 2 <input type="checkbox"/> Tier 3		
Project Manager:			20th Day		30th Day
Analyst:			Suspended on:		
Due Date:			Extended on:		
Completion Date:			Resolution No.:		
			AL/Tariff Effective Date:		

Appendix 1 - Tariff Sheet Changes in Advice Letter 2168-A

New/Revised C.P.U.C. Sheet No.	Title of Sheet	Schedule No.	Cancelling C.P.U.C. Sheet No.
xxxxx -W	Table of Contents (Page 1)	Not Applicable	10620 -W
xxxxx -W	Table of Contents (Page 2)	Not Applicable	10610 -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 1 of 12)	14.1 (Page 1)	- -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 2 of 12)	14.1 (Page 2)	- -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 3 of 12)	14.1 (Page 3)	- -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 4 of 12)	14.1 (Page 4)	- -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 5 of 12)	14.1 (Page 5)	- -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 6 of 12)	14.1 (Page 6)	- -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 7 of 12)	14.1 (Page 7)	- -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 8 of 12)	14.1 (Page 8)	- -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 9 of 12)	14.1 (Page 9)	- -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 10 of 12)	14.1 (Page 10)	- -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 11 of 12)	14.1 (Page 11)	- -W
xxxxx -W	Schedule 14.1 - Drought Surcharges (Page 12 of 12)	14.1 (Page 12)	- -W

Table of Contents (Page 1 of 8)

The following listed tariff sheets contain all effective rates and rules affecting the rates and service of the Utility together with information relating thereto:

<u>Sheet Subject Matter</u>	<u>Cal. P.U.C. Sheet No.</u>
Title Page	5613-W
Table of Contents .....	.....xxxxx-xxxxx-10626-10608-xxxxx-10197-10452-10212-2926-W (C)
Preliminary Statement A	9240-8212-W
Preliminary Statement B-D .....	.610-W
Preliminary Statement F .....	.8312-W
Preliminary Statement H .....	.6686-W
Preliminary Statement J2	10438-W
Preliminary Statement K .....	.7313-W
Preliminary Statement M	7345-8372-10605-10374-10604-10488-10603-10480-10601-W
Preliminary Statement M	10481-10408-10602-10489-10600-10409-10599-10482-10598-W
Preliminary Statement M	10597-10596-10391-10595-10594-10483-10395-10593-10397-W
Preliminary Statement P .....	.7446-W
Preliminary Statement Q .....	.10043-W
Preliminary Statement S .....	.8013-W
Preliminary Statement T .....	.8017-W
Preliminary Statement U .....	.8446-W
Preliminary Statement V .....	.8154-W
Preliminary Statement W .....	.8156-W
Preliminary Statement X .....	.8314-W
Preliminary Statement Z1 .....	.10439-W
Preliminary Statement Z2 .....	.10440-W
Preliminary Statement AA1 .....	.10441-W
Preliminary Statement AA2 .....	.10442-W
Preliminary Statement AB2 .....	.10443-W
Preliminary Statement AC .....	.8637-W
Preliminary Statement AD .....	.10451-W
Preliminary Statement AE .....	.10444-W, 10445-W
Preliminary Statement AF .....	.9025-W
Preliminary Statement AG .....	.9032-W
Preliminary Statement AI .....	.10221-W
Preliminary Statement AJ .....	.9671-W
Preliminary Statement AK .....	.10101-W
Preliminary Statement AL .....	.10208-W
Preliminary Statement AM .....	.10446-W
Preliminary Statement AN .....	.10447-W
Preliminary Statement AO .....	.10448-W
Preliminary Statement AP .....	.10449-W
Preliminary Statement AQ .....	.10450-W
Preliminary Statement AR .....	.10447-W

(continued)

(To be inserted by utility)
 Advice Letter No. 2168-A
 Decision No. -

Issued by
PAUL G. TOWNSLEY
NAME
Vice President
TITLE

(To be inserted by Cal. P.U.C.)
 Date Filed
 Effective
 Resolution No.

Table of Contents (Page 2 of 8)
 (continued)

<u>Sheet Subject Matter</u>	<u>Service Area</u>	<u>Schedule Number</u>	<u>Cal. P.U.C. Sheet No.</u>
<u>RATE SCHEDULES:</u>			
<u>ALL DISTRICTS</u>			
Service to Company Employees		ED-1	5168-W
Rate Support Fund		RSF	10369-W
Low Income Ratepayer Assistance (Page 1 of 3)		LIRA	10370-W
Low Income Ratepayer Assistance (Page 2 of 3)		LIRA	10371-W
Low Income Ratepayer Assistance (Page 3 of 3)		LIRA	10553-W
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 1 of 13)		14.1	xxxxx-W (N)
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 2 of 13)		14.1	xxxxx-W
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 3 of 13)		14.1	xxxxx-W
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 4 of 13)		14.1	xxxxx-W
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 5 of 13)		14.1	xxxxx-W
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 6 of 13)		14.1	xxxxx-W
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 7 of 13)		14.1	xxxxx-W
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 8 of 13)		14.1	xxxxx-W
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 9 of 13)		14.1	xxxxx-W
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 10 of 13)		14.1	xxxxx-W
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 11 of 13)		14.1	xxxxx-W
Schedule 14.1 - Staged Mand. Reductions and Drought Surcharges (Page 12 of 13)		14.1	xxxxx-W (N)
PBOP Surcharge		PB	7049-W
Additional Surcharges/Surcredits		AS	10199-W
Additional Surcharges/Surcredits Page 2		AS pg 2	10464-W
Additional Surcharges/Surcredits Page 3		AS pg 3	10554-W
Additional Surcharges/Surcredits Page 4		AS pg 4	10555-W
<u>ANTELOPE VALLEY DISTRICT</u>			
Residential Metered Service - Leona Valley Service Area		AV-LEO-1-R	10592-W
Nonresidential Metered Service - Leona Valley Service Area		AV-LEO-1-NR	10591-W
Residential Metered Service-Lancaster Service Area		AV-LAN-1-R	10590-W
Nonresidential Metered Service- Lancaster Service Area		AV-LAN-1-NR	10589-W
General Metered Service-Fremont Valley Lake Hughes Service Area		AV-FM-1	10588-W
Limited Residential Flat Rate Service-Lake Hughes Service Area		AV-LH-2R	6550-W
Private Fire Protection Service-All Antelope Valley Service Areas		AV-4	10266-W
<u>BAKERSFIELD DISTRICT</u>			
Residential Metered Service		BK-1-R	10267-W
Nonresidential Metered Service		BK-1-NR	10268-W
Residential Flat Rate Service		BK-2R	10269-W
Private Fire Protection Service		BK-4	10270-W
Public Fire Hydrant Service		BK-5	10271-W
<u>BAYSHORE DISTRICT</u>			
Residential Metered Service - South San Francisco Service Area		BAY-1-R	10587-W
Nonresidential Metered Service - South San Francisco Service Area		BAY-1-NR	10586-W
Private Fire Protection Service		BAY-4	10278-W
<u>BEAR GULCH DISTRICT</u>			
Residential Metered Service		BG-1-R	10484-W
Nonresidential Metered Service		BG-1-NR	10485-W
Private Fire Protection Service		BG-4	10281-W
Public Fire Hydrant Service		BG-5	9547-W
<u>CHICO - HAMILTON CITY DISTRICT</u>			
Residential Metered Service		CH-1-R	10585-W
Nonresidential Metered Service		CH-1-NR	10584-W
Private Fire Protection Service		CH-4	10285-W
<u>DIXON DISTRICT</u>			
Residential Metered Service		DX-1-R	10472-W
Nonresidential Metered Service		DX-1-NR	10473-W
		DX-4	10288-W

(continued)

Schedule No. 14.1

(N)

WATER SHORTAGE CONTINGENCY PLAN

WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES

Page 1

A. APPLICABILITY

- 1. This schedule applies to all of California Water Service’s regulated ratemaking areas in California, as well as Grand Oaks Water.

B. GENERAL INFORMATION

- 1. All expenses incurred by utility to implement Rule 14.1, and Schedule 14.1, and requirements of the California State Water Resources Control Board (“Water Board”) that have not been considered in a General Rate Case or other proceeding shall be accumulated by Cal Water in a separate memorandum account, authorized in Resolution W-4976, for disposition as directed or authorized from time to time by the Commission.
- 2. All monies collected by Cal Water through waste of water penalties established in this schedule shall be recorded in the appropriate memorandum account and used to offset the expenses described in Section 1 above.
- 3. Except in the case of Grand Oaks, all monies collected by Cal Water through drought surcharges, as established by the Mandatory Water Budgets found in Schedule 14.1, shall be recorded in the appropriate Water Revenue Adjustment Mechanism (“WRAM”) account and used to offset under-collected revenues.
- 4. To the extent that any provision in this Schedule is inconsistent with Rule 14.1, the provisions of this Schedule apply.
- 5. A customer may request installation of a real-time water measurement device on the customer's service line. The cost of the device, including installation and ongoing operating costs, shall be billed to the customer, and nonpayment may result in discontinuance of service.
- 6. On April 1, 2015, the Governor of the State of California issued Executive Order B-29-15 due to severe drought conditions. The Executive Order, among other requirements, directs the State Water Resources Control Board (“Water Board”) to impose restrictions on urban water suppliers like Cal Water to achieve a statewide 25% reduction in potable urban usage, as compared with the amount used in 2013, through February 2016.
 - A. The restrictions must take into consideration the relative per capita water usage of each water supplier’s service area such that those with high per capital use are required to achieve proportionally greater reductions than those with less use.
 - B. Urban water suppliers must develop rate structures and other pricing mechanisms, such as surcharges and penalties, to achieve 25% water conservation.
- 7. On May 5, 2015, the Water Board issued an Emergency Regulation by Resolution No. 2015-0032 due to continuing drought conditions with specific water use reductions, by service area, and prohibitions on how end-use customers can use potable water. On May 7, 2015, the California Public Utilities Commission (“Commission”) issued Resolution W-5041 ordering compliance with the mandates of the Governor and the Water Board.

C. DEFINITIONS

For the purposes of this Schedule, the following terms have the meanings set forth in this section.
(These are the same as in Rule 14.1, unless otherwise specified.)

- 1. “Commercial nursery” means the use of land, buildings or structures for the growing and/or storing of flowers, fruit trees, ornamental trees, vegetable plants, shrubs, trees and similar vegetation for the purpose of transplanting, for use as stock or grafting, and includes the retail sale or wholesale distribution of such items directly from the premises/lot.

(N)

(continued)

(To be inserted by utility)		<i>Issued by</i>	(To be inserted by Cal. P.U.C.)
Advice Letter No. <u> 2168-A </u>		PAUL G. TOWNSLEY <small>NAME</small>	Date Filed _____
Decision No. <u> - </u>		<u>Vice President</u> <small>TITLE</small>	Effective _____
			Resolution No. _____

Schedule No. 14.1

(N)

WATER SHORTAGE CONTINGENCY PLAN

WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES

Page 2

C. DEFINITIONS (Continued)

2. "Drip irrigation system" means a non-spray, low-pressure, and low volume irrigation system utilizing emission devices with a precipitation or flow rate measured in gallons per hour (GPH), designed to slowly apply small volumes of water at or near the root zone of plants or other landscaping.
3. "Flow rate" means the rate at which water flows through pipes, valves, and emission devices, measured in gallons per minute (GPM), gallons per hour (GPH), inches per hour (IPH), hundred cubic feet (Ccf), or cubic feet per second (CFS).
4. "Flow-restricting device" means valves, orifices, or other devices that reduce the flow of potable water through a service line, which are capable of passing a minimum of 3 Ccf per person, per month, based upon the U.S. Census calculation of the average number of people in a household in the area.
5. "High-efficiency sprinkler systems" means an irrigation system with emission devices, such as sprinkler heads or nozzles, with a precipitation or flow rate no greater than one IPH.
6. "Irrigation" means the application of potable water by artificial means to landscape.
7. "Irrigation system" means the components of a system meant to apply water to an area for the purpose of irrigation, including, but not limited to, piping, fittings, sprinkler heads or nozzles, drip tubing, valves, and control wiring.
8. "Landscape" means all of the outdoor planting areas, turf areas, and water features at a particular location.
9. "Measureable rainfall" means any amount of precipitation of more than one-tenth of an inch (0.1").
10. "Micro spray irrigation system" means a low-pressure, low-volume irrigation system utilizing emission devices that spray, mist, sprinkle, or drip with a precipitation or flow rate measured in GPH, designed to slowly apply small volumes of water to a specific area.
11. "Ornamental landscape" means shrubs, bushes, flowers, ground cover, turf, lawns, and grass planted for the purpose of improving the aesthetic appearance of property, but does not include crops or other agricultural products or special landscape areas.
12. "Ornamental turf" means a ground cover surface of grass that can be mowed and is planted for the purpose of improving the aesthetic appearance of the property, but does not include crops or other agricultural products or special landscape areas.
13. "Plumbing fixture" means a receptacle or device that is connected to a water supply system, including, but not limited to, pipes, toilets, urinals, showerheads, faucets, washing machines, water heaters, tubs, and dishwashers.
14. "Potable water" means water supplied by Cal Water which conforms to the federal and state standards for human consumption.
15. "Properly programmed" means a smart irrigation controller that has been programmed according to the manufacturer's instructions and site-specific conditions.
16. "Real-time water measurement device" means a device or system that provides regularly updated electronic information regarding the customer's water use.
17. "Runoff" means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape onto other areas.
18. "Smart irrigation controller" means an automatic device used to remotely control valves that operate an irrigation system that has been tested by an American National Standards Institute accredited third-party certifying body or

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WATER SHORTAGE CONTINGENCY PLAN
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Page 3

C. DEFINITIONS (Continued)

laboratory in accordance with the Environmental Protection Agency’s WaterSense program (or an analogous successor program), and certified by such body or laboratory as meeting the performance and efficiency requirements of such program, or the more stringent performance and efficiency requirements of another similar program.

- 19. “Special landscape area” means an area of the landscape dedicated solely to edible plants and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.
- 20. “Turf” means a ground cover surface of grass that can be mowed.
- 21. “Water feature” means a design element where open, artificially supplied water performs an aesthetic or recreation feature, including, but not limited to, ponds, lakes, waterfalls, fountains, and streams.
- 22. “Water use evaluation” means an evaluation of the efficiency of indoor water-using devices, including, but not limited to, measurement of flow rates for all existing showerheads, faucets, and toilets, inspection for leaks, and providing written recommendations to improve the efficiency of the indoor water-using fixtures and devices and/or an evaluation of the performance of an irrigation system, including, but not limited to, inspection for leaks, reporting of overspray or runoff, and providing written recommendations to improve the performance of the irrigation system.

D. WASTE OF WATER PENALTIES

Each Stage of this Schedule establishes certain restrictions on the use of potable water. essential, wasteful use of potable water. Cal Water is authorized to take the following actions when its personnel verify a customer is using potable water for non-essential, wasteful uses. No person shall have any right or claim in law or in equity, against Cal Water because of, or as a result of, any matter or thing done or threatened to be done pursuant to the restrictions on using potable water for non-essential, wasteful uses.

Note: When a Stage in this Schedule has been activated, Section D in this Schedule supersedes Section D (Enforcement) in Rule 14.1.

- 1. **FIRST VIOLATION**: Cal Water shall provide the customer with a written notice of violation. In addition, Cal Water is authorized to take the following actions:
 - A. If the customer currently receives service through a metered connection, install a real-time water measurement device on the customer’s service line and provide the customer with access to information from the device. The cost of the device, including installation and ongoing operating costs, shall be billed to the customer, and nonpayment may result in discontinuance of service.
 - B. If the customer does not currently receive service through a metered connection, install a water meter on the customer’s service line, charge the customer for water use pursuant to Cal Water’s metered service tariffs and rules, and install a real-time water measurement device on the customer’s service line and provide the customer with access to information from the device. The cost of the device, including installation and ongoing operating costs, shall be billed to the customer, and nonpayment may result in discontinuance of service.
- 2. **SECOND VIOLATION**: If Cal Water verifies that the customer has used potable water for non-essential, wasteful uses after having been notified of the first violation, Cal Water shall provide the customer with a second written notice of violation. In addition to the actions prescribed under the first violation above, Cal Water is authorized to take the following actions:
 - A. Apply the following waste of water penalties, which are in addition to any other charges authorized by this Schedule or other Cal Water tariffs.
 - i. If Stage 1 is in effect, \$25 (Stage 1 is detailed below in Section E).
 - ii. If Stage 2 is in effect, \$50 (Stage 2 is detailed below in Section F).

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WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

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D. WASTE OF WATER PENALTIES (Continued)

- iii. If Stage 3 is in effect, \$100 (Stage 3 is detailed below in Section G).
- iv. If Stage 4 is in effect, \$200 (Stage 4 is detailed below in Section H).

B. At its sole discretion, waive the waste of water penalty if the customer participates in a water use evaluation provided by Cal Water and/or provides documentation to Cal Water proving that a drip irrigation system, micro spray irrigation system, high-efficiency sprinkler system, or properly programmed smart irrigator controller has been installed, after a notice of violation was delivered, and is in use at the customer's service address.

3. **THIRD VIOLATION:** If Cal Water verifies that the customer has used potable water for non-essential, wasteful uses after having been notified of the second violation, Cal Water shall provide the first and second violations above, Cal Water is authorized to take the following actions:

A. Apply the following waste of water penalties, which are in addition to any other charges authorized by this Schedule or other Cal Water tariffs.

- i. If Stage 1 is in effect, \$50 (Stage 1 is detailed below in Section E).
- ii. If Stage 2 is in effect, \$100 (Stage 2 is detailed below in Section F).
- iii. If Stage 3 is in effect, \$200 (Stage 3 is detailed below in Section G).
- iv. If Stage 4 is in effect, \$400 (Stage 4 is detailed below in Section H).

B. At its sole discretion, waive the waste of water surcharge if the customer participates in a water use evaluation provided by Cal Water and/or provides documentation to Cal Water proving that a drip irrigation system, micro spray irrigation system, high-efficiency sprinkler system, or properly programmed smart irrigation controller has been installed, after notice of violations have been delivered, and is in use at the customer's service address.

4. **FOURTH VIOLATION:** If Cal Water verifies that the customer has used potable water for non-essential, wasteful uses after having been notified of the third violation, Cal Water shall provide the customer with a fourth written notice of violation. In addition to actions set forth in previous violations prescribed above, Cal Water is authorized to install a flow-restricting device on the customer's service line. Cal Water shall not be held liable for any injuries, damages, and/or consequences arising from the installation of a flow restricting device.

5. **EGREGIOUS VIOLATIONS:** Notwithstanding the foregoing framework for penalties, customers who Cal Water has verified are egregiously using potable water for non-essential, wasteful uses are subject to having a flow-restricting device installed on their service line. After providing the customer with one notice of egregious violation, either by direct mail or door hanger, which documents the egregious use of potable water for non-essential, wasteful uses and explains that failure to correct the violation may result in the installation of a flow-restricting device on the customer's service line, Cal Water is authorized to install a flow-restricting device on the customer's service line. Cal Water shall not be held liable for any injuries, damages, and/or consequences arising from the installation of a flow restricting device.

6. **NOTICES OF VIOLATION:**

A. Unless otherwise specified, written notices of violation provided to customers pursuant to this Schedule shall document the verified violation and alert the customer to the fact that future violations of the restricted uses of potable water may result in a real-time water management device being installed on the customer's service line at the customers expense, waste of water surcharges being applied to the customer's bill, the installation of a flow-restricting device on the customer's service line, or the discontinuation of the customer's service.

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D. WASTE OF WATER PENALTIES (Continued)

- B. If Cal Water elects to install a flow-restricting device on a customer's service line, the written notice service line, shall document the steps the customer must take in order for the flow-restricting device to be removed, and shall explain that after the flow-restricting device is removed, it may be reinstalled, without further notice, if the customer is again verified by Cal Water to be using potable water for non-essential, wasteful uses.
- 7. **FLOW RESTRICTING DEVICE CONDITIONS:** The installation of a flow-restricting device on a customer's service line is subject to the following conditions:
 - A. The device shall be capable of providing the premise with a minimum of 3 Ccf per person, per month, based upon the U.S. Census calculation of the average number of people in a household in the area.
 - B. The device may only be removed by Cal Water, and only after a minimum three-day period has elapsed.
 - C. Any tampering with the device may result in the discontinuation of the customer's water service and the customer being charged for any damage to Cal Water's equipment or facilities and any required service visits.
 - D. After the removal of the device, if Cal Water verifies that the customer is using potable water for non-essential, wasteful uses, Cal Water may install another flow-restricting device without prior notice. This device shall remain in place until water supply conditions warrant its removal. If, despite the installation of the device, Cal Water verifies that the customer is using potable water for non-essential and, unauthorized wasteful uses, then Cal Water may discontinue the customer's water service, as provided in its Rule No. 11.
- 8. **FLOW-RESTRICTING DEVICE REMOVAL CHARGES:** The charge to customers for removal of a flow-restricting device installed pursuant to this Schedule is \$100 during normal business hours, and \$150 for the device to be removed outside of normal business hours.

E. STAGE ONE WATER USE RESTRICTIONS

1. WASTEFUL USES OF WATER (STAGE 1)

The following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need, or to comply with a term or condition in a permit issued by a state or federal agency:

- A. Outdoor Irrigation Restrictions (Stage 1)
 - i. Irrigating ornamental landscapes with potable water is limited to no more than **three (3) days per week**, on a schedule established and posted by Cal Water on its website or otherwise provided to customers by bill message, bill insert, direct mail, or email, or as follows:
 - 1. Customers with even-numbered addresses may irrigate on Saturdays, Tuesdays, and Thursdays.
 - 2. Customers with odd-numbered addresses may irrigate on Sundays, Wednesdays, and Fridays.
 - 3. Customers without a street address may irrigate on Saturdays, Tuesdays, and Thursdays.

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E. STAGE ONE WATER USE RESTRICTIONS (Continued)

[Stage 1 (cont.)]

- e. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Schedule.
- f. Other duly adopted restrictions on the use of potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.

F. STAGE TWO WATER USE RESTRICTIONS

1. MANDATORY WATER BUDGETS AND BANKING (STAGE 2)

The Governor's Executive Order mandates a 25% reduction in potable urban usage, as compared with the amount used in 2013, through February 2016. To carry out this mandate, the Water Board must develop water use restrictions that take into consideration the relative per capita water usage of each water supplier's service area such that those with high per capita use are required to achieve proportionally greater reductions than those with less use. In addition, water suppliers must develop rate structures and other pricing mechanisms, such as surcharges and penalties, to achieve 25% water conservation.

A. Mandatory Reduction Percentage: The Water Board has established increasing levels of required water reduction based upon residential per capita per day use (R-GPCD) for the three summer months of July through September 2014.

- i. The Mandatory Reduction Percentage for each of Cal Water's service areas [and Grand Oaks] is in **Appendix B**. This Mandatory Reduction Percentage is the percentage by which customers in that area must reduce their total potable water use, as compared to their use in 2013.

B. Customer Water Budgets: Each customer with metered potable water service (residential and non-residential customers) will receive an individualized "water budget" for each billing period.

- i. The water budget will be the amount of water the customer can use in that billing period without incurring a "drought surcharge." The water budget will be based on the units of water (Cafs) that customer used in the same billing period in 2013, minus the Mandatory Reduction Percentage established by the Water Board (as identified in **Appendix B**). A customer's water budget will vary according to their monthly water usage in 2013.
- ii. If a customer was not in his or her current location in 2013, the average monthly consumption will be used as a starting budget. If customers have a unique situation and the average budget is not appropriate, they can file an appeal to have their water budget increased. Cal Water may also modify the starting budget to reflect suitable use.
- iii. The water budget for the following billing period will appear on each customer's water bill. Customers will also be able to find their water budgets, and their individual water use history dating back to 2013, by going to usage.calwater.com (do not include "www"), and entering their account number, street (or house) number, and ZIP code.
- iv. **Water budgets will become effective with the first billing period that begins in the month of June 2015.** No Drought Surcharges will be applied for billing periods that include any days in the month of May 2015.

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F. STAGE TWO WATER USE RESTRICTIONS (Continued)

[Stage 2 (cont.)]

- C. **Minimum Water Budgets:** A minimum monthly amount of water that protects the health and safety of customers will be established for each service area as a Minimum Water Budget for single-family residential customers.
 - i. No single-family residential customer will have a water budget that is below the threshold of the monthly Minimum Water Budget, even if applying the Mandatory Reduction Percentage to that customer’s 2013 usage would result in a lower amount.
 - ii. The Minimum Water Budget for each service area is identified in **Appendix A**. (For areas with bi-monthly billing and bi-monthly water budgets, the Minimum Water Budget in Appendix A should be doubled for the billing period.)
- D. **Drought Surcharges:** If a customer uses more units of potable water (Ccf) than their Water Budget in a billing period, that customer’s water bill will reflect an additional “Drought Surcharge” for each unit of water over the Water Budget.
 - i. The Drought Surcharge per unit of water for each service area is identified in **Appendix A**.
 - ii. Customers will continue to pay the normal tariffed rates for potable water, in addition to any applicable Drought Surcharges. Cal Water retains the right to increase the surcharges if there are changes to the rates in the future.
- E. **Water Banking:** Customers will be able to “bank” unused units of water from their water budget for use in future billing periods.
 - i. Should a customer exceed his or her monthly budget, any banked units of water will be applied to the overage before drought surcharges are imposed.
 - ii. Banked water units can only offset future usage that exceeds a water budget.
- F. **Water Budget Appeals:** If specified criteria are met, a customer can file an appeal to have his or her water budget increased.
 - i. The reasons appeals may be considered include: water use necessary for health and safety; business or economic needs, including process-water requirements; significant long-term savings achieved since 2011; average monthly water use in 2014 that is at least 50% lower than district average; and large animal care (e.g. horse).
 - ii. All appeals must be submitted online at www.calwater.com/appeal or via a written application form (available at www.calwater.com/appeal or from our local Customer Center).
 - iii. Surcharges incurred during the appeal review period may be waived if the review takes an extended period of time.

G. STAGE THREE WATER USE RESTRICTIONS

1. MANDATORY WATER BUDGETS AND BANKING (STAGE 3)

Water budgets will be based on a customer’s consumption during a historical base period and will include a percentage reduction designed to meet necessary water-use reductions. Cal Water may include provisions such as minimum water budgets to protect the health and safety of customers, and water banking allowing customers additional flexibility with regard to their required reductions.

In addition to the normal rate paid for the unit of water, a drought surcharge will be charged to a customer for each unit of water used over the established water budget for the billing period. Cal Water may implement surcharges up to three (3) times those charged in Stage 2. Cal Water will establish an appeals process for customers that will allow for requests for increased water budgets.

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G. STAGE THREE WATER USE RESTRICTIONS (Continued)

[Stage 3 (cont.)]

2. WASTEFUL USES OF WATER (STAGE 3)

The following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency.

Differences from or additions to previous Stages are underlined. (The following restrictions are the same as those provided in Stage 3 of Rule 14.1.)

a. Outdoor Irrigation Restrictions (Stage 3)

i. Irrigating ornamental landscapes with potable water is limited to no more than **two (2) days per week.** on a schedule established and posted by Cal Water on its website or otherwise provided to customers by bill message, bill insert, direct mail, or email, or as follows:

1. Customers with even-numbered addresses may irrigate on Saturdays and Tuesdays (previous Stages allowed Thursdays as well).
2. Customers with odd-numbered addresses may irrigate on Sundays and Wednesdays (previous Stages allowed Fridays as well).
3. Customers without a street address may irrigate on Saturdays and Tuesdays (previous Stages allowed Thursdays as well).
4. Notwithstanding the foregoing restrictions, irrigation of special landscape areas or irrigate a special landscape area or commercial nursery presents Cal Water with a plan to achieve water use reductions commensurate with those that would be achieved by complying with foregoing restrictions.
5. Notwithstanding the foregoing restrictions, when a city, county, or other local public agency in one of Cal Water's service areas duly adopts restrictions on the number of days or hours of the day that customers may irrigate which are different than those adopted by Cal Water, Cal Water may enforce the city, county, or other local public agency's restrictions.

ii. Irrigating ornamental landscape with potable water is prohibited during the hours between **8:00 a.m. and 6:00 p.m.**

iii. The foregoing restrictions do **not** apply to:

1. Landscape irrigation zones that exclusively use drip irrigation systems and/or micro spray irrigation system;
2. Irrigating ornamental landscapes with the use of a hand-held bucket or similar container, a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored, or for the express purpose of adjusting or repairing an irrigation system.

B. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within **two (2) business days** of written notification by Cal Water, unless other arrangements are made with Cal Water.

C. Prohibited Uses of Water: Customers are prohibited from using potable water for the following actions:

- i. The application of potable water to landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures (note: this provision appears under Section E in Rule 14.1);

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G. STAGE THREE WATER USE RESTRICTIONS (Continued)

[Stage 3 (cont.)]

- ii. The use of a hose that dispenses potable water to wash vehicles, including cars, trucks, buses, boats, aircraft, and trailers, whether motorized or not, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use (note: this provision appears under Section E in Rule 14.1).
 - iii. The application of potable water to driveways and sidewalks;
 - iv. The use of potable water in a water feature, except where the water is part of a recirculating system;
 - v. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall;
 - vi. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;
 - vii. Irrigation of ornamental turf on public street medians with potable water;
 - viii. Irrigation outside of newly constructed homes and buildings with potable water in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.
 - ix. Use of potable water for street cleaning with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible);
 - x. Use of potable water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.
- D. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language.
- E. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Schedule.
- F. Other duly adopted restrictions on the use of potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.

H. STAGE FOUR WATER USE RESTRICTIONS

1. MANDATORY WATER BUDGETS AND BANKING (STAGE 4)

Water budgets will be based on a customer's consumption during a historical base period and will include a percentage reduction designed to meet necessary water-use reductions. Cal Water may include provisions such as minimum water budgets to protect the health and safety of customers, and water banking allowing customers additional flexibility with regard to their required reductions.

In addition to the normal rate paid for the unit of water, a drought surcharge will be charged to a customer for each unit of water used over the established water budget for the billing period. For Stage 4, Cal Water may implement surcharges up to three (3) times those charged in Stage 2. Cal Water may require customer consumption reductions of up to 50%.

Cal Water will establish an appeals process for customers that will allow for requests for increased water budgets.

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H. STAGE FOUR WATER USE RESTRICTIONS (Continued)

[Stage 4 (cont.)]

2. WASTEFUL USES OF WATER (STAGE 4)

The following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency. Differences from or additions to previous Stages are underlined. (The following restrictions are the same as those provided in Stage 4 of Rule 14.1.)

- A. Irrigating ornamental landscape with potable water is prohibited, except when a hand-held bucket nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored is used to maintain vegetation, including trees and shrubs.
- B. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the customer's plumbing fixtures or irrigation system must be repaired within **one (1) business day** of written notification by Cal Water, unless other arrangements are made with Cal Water.
- C. Prohibited Uses of Water: Customers are prohibited from using potable water for the following actions:
 - i. The application of potable water to landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;
 - ii. The use of a hose that dispenses potable water to wash vehicles, including cars, trucks, buses, boats, aircraft, and trailers, whether motorized or not, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.
 - iii. The application of potable water to driveways and sidewalks;
 - iv. The use of potable water in a water feature, except where the water is part of a recirculating system;
 - v. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall;
 - vi. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;

[Note that items previously identified as (ix) and (x) in Stage 3 have been eliminated.]

 - vii. Use of potable water for street cleaning with trucks (previous Stage allowed certain exceptions);
 - viii. Use of potable water for construction purposes, such as consolidation of backfill, dust control, or other uses (previous Stage allowed certain exceptions).
- D. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language.
- E. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Schedule.
- F. Other duly adopted restrictions on the use of potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.

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WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

Page 12

APPENDIX A

Drought surcharges apply to all metered customers of potable water.

District	Tariff Area	Drought Surcharge Non-LIRA Customers (a)	Drought Surcharge LIRA Customers (b)	Minimum Monthly Water Budget (Ccf) (c)	Rate Support Fund (RSF) Areas
Antelope Valley	Fremont Valley & Lake Hughes	\$4.5200	\$2.2600	5	RSF Area
	Lancaster	\$7.1180	\$3.5590	5	
	Leona Valley	\$4.5200	\$2.2600	5	RSF Area
Bakersfield		\$4.1868	\$2.0934	7	
Bayshore	Mid-Peninsula	\$10.0000	\$5.0000	6	
	South San Francisco	\$5.6492	\$2.8246	6	
Bear Gulch		\$10.0000	\$5.0000	6	
Chico		\$3.1314	\$1.5657	6	
Dixon		\$7.9402	\$3.9701	7	
Dominguez		\$6.9934	\$3.4967	7	
East Los Angeles		\$3.7605	\$1.8803	9	
Grand Oaks		\$2.1236	\$1.0618	5	
Hermosa Redondo		\$9.1586	\$4.5793	5	
Kern River Valley		\$4.5200	\$2.2600	4	RSF Area
King City		\$6.7536	\$3.3768	9	
Livermore		\$7.6194	\$3.8097	6	
Los Altos		\$8.1608	\$4.0804	6	
Marysville		\$5.1470	\$2.5735	6	
Oroville		\$6.1840	\$3.0920	6	
Palos Verdes		\$9.5358	\$4.7679	6	
Redwood Valley		\$4.5200	\$2.2600	4	RSF Area
Salinas		\$5.7776	\$2.8888	7	
Selma		\$3.0122	\$1.5061	8	
Stockton		\$5.5506	\$2.7753	7	
Visalia		\$2.9796	\$1.4898	7	
Westlake		\$9.2378	\$4.6189	6	
Willows		\$4.1356	\$2.0678	6	

- (a) The Drought Surcharge is equal to two (2) times the highest residential tier rate with a \$10.00 maximum EXCEPT:
 The Drought Surcharge in Rate Support Fund (RSF) areas is equal to \$4.52.
 The Drought Surcharge for districts with a 10% or less water reduction requirement is equal to the highest residential tier rate.
- (b) The Drought Surcharge for LIRA customers is 50% of the Drought Surcharge for Non-LIRA customers.
- (c) The Minimum Water Budget is set at 55 gpcd (gallons per capita per day) multiplied by the number of people per household for the area according to the U.S. Census.

(N)

[end]

Schedule No. 14.1

(N)

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

Page 13

APPENDIX B

Supplier Name	Total Water Production 2013 (Jun - Feb)	Percent Saved (Jun-14 - Feb-15, compared to 2013)	Jul-Sep 2014 R-GPCD	Tier	Conservation Standard	Estimated Savings (Gallons)
California Water Service Company South San Francisco	2,075,673,590	8%	48.8	2	8%	166,053,887
California Water Service Company East Los Angeles	3,998,522,861	4%	51.4	2	8%	319,881,829
California Water Service Company King City	428,820,478	6%	67.7	3	12%	51,458,457
California Water Service Company Dominguez	8,444,765,582	4%	83.7	4	16%	1,351,162,493
California Water Service Company Salinas District	4,612,101,098	12%	86.0	4	16%	737,936,176
California Water Service Company Mid Peninsula	3,986,792,209	11%	87.4	4	16%	637,886,753
California Water Service Company Redwood Valley	108,182,674	24%	93.3	4	16%	17,309,228
California Water Service Company Hermosa/Redondo	2,984,799,071	0%	96.4	5	20%	596,959,814
California Water Service Company Stockton	6,808,665,567	7%	97.6	5	20%	1,361,733,113
California Water Service Company Livermore	2,781,467,781	31%	120.5	6	24%	667,552,267
California Water Service Company Marysville	575,127,769	14%	125.5	6	24%	138,030,664
California Water Service Company Oroville	830,595,287	18%	131.6	7	28%	232,566,680
California Water Service Company Dixon, City of	382,549,575	9%	144.3	7	28%	107,113,881
California Water Service Company Kern River Valley	222,882,376	10%	148.9	7	28%	62,407,065
California Water Service Company Willows	364,301,895	13%	168.6	7	28%	102,004,531
California Water Service Company Los Altos/Suburban	3,714,706,268	16%	173.8	8	32%	1,188,706,006
California Water Service Company Selma	1,492,399,536	17%	189.2	8	32%	477,567,851
California Water Service Company Visalia	8,033,215,230	11%	191.7	8	32%	2,570,628,874
California Water Service Company Bakersfield	18,863,864,960	11%	197.6	8	32%	6,036,436,787
California Water Service Company Chico District	6,759,462,002	16%	210.4	8	32%	2,163,027,841
California Water Service Company Bear Gulch	3,623,142,017	11%	252.5	9	36%	1,304,331,126
California Water Service Company Palos Verdes	5,184,622,055	4%	255.4	9	36%	1,866,463,940
California Water Service Company Antelope Valley	186,061,165	-16%	296.7	9	36%	66,982,019
California Water Service Company Westlake	2,085,449,133	8%	336.7	9	36%	750,761,688

(N)

(To be inserted by utility)

Issued by

(To be inserted by Cal. P.U.C.)

Vice Letter No. 2168-A

PAUL G. TOWNSLEY

Date Filed _____

Decision No. -

Vice President
TITLE

Effective _____

Resolution No. _____



Antelope Valley District

ADVICE LETTER FILING MAILING LIST
PER SECTION 111 (G) OF GENERAL ORDER NO. 96-A

Interested Parties

Peggy Fuller, Treasurer
Leona Valley Town Council
P.O. Box 795
Leona Valley, CA 93551
pfuller@leonavalleytc.org

Jack L. Chacanaca
Leona Valley Cherry Growers Association
26201 Tuolumne St.
Mojave, CA 93501

Joseph S. Lucido, President
Leona Valley Cherry Growers Association
26201 Tuolumne St
Mojave, CA 93501

Service Area Maps Only

Los Angeles LAFCO
Executive Officer
383 Hall of Administration
Los Angeles, CA 90012

Fire Chief
Los Angeles County
500 W. Temple Street, Room 358
Los Angeles, CA 90012

CDF, Battalion 11
8723 Elizabeth Lake Road
Leona Valley, CA 93550



Bakersfield District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Competing and Adjacent Utilities:

City of Bakersfield
1501 Truxtun Avenue
Bakersfield, CA 93301501
jwstinson@bakersfieldcity.us

City of Bakersfield
Water Resources Dept.
1000 Buena Vista Rd.
Bakersfield, CA 93311
mrandall@bakersfieldcity.us

Casa Loma Water Company
1016 Lomita Drive
Bakersfield, CA 93307

East Niles Community Services District
Manager: Timothy Ruiz
P.O. Box 6038
Bakersfield, CA 93386-6038
Email: truiz@eastnilescsd.org

Victory Mutual Water Company
P.O. Box 40035
Bakersfield, CA 93304

Krista Mutual Water Company
7025 Cuddy Valley Road
Frazir Park, CA 93225

Oildale Mutual Water Company
Attn: Manager Douglas Nunneley
P.O. Box 5638
Bakersfield, CA 93388
Email: dnunneley@yahoo.com

Stockdale Annex Mutual Water Company
P.O. Box 9726
Bakersfield, CA 93386-9726



Bakersfield District

Other Utilities and Interested Parties Requesting Notification:

Kern County Water Agency
Attn: Eric Averett
P.O. Box 58
Bakersfield, CA 93302

Robert Norwood
2803 Loyola St.
Bakersfield, CA 93306

Service Maps

Kern County LAFCO
Executive Officer
5300 Lennox Avenue Ste.303
Bakersfield, CA 93309
Email: KCLAFCO@bak.rr.com

Kern County Fire Department
Attn: Fire Chief
1115 Truxtun Avenue
Bakersfield, CA 93301

City of Bakersfield
Attn: Fire Chief
2101 H St.
Bakersfield, CA 93301
Email: rfraze@bakersfieldfire.us



Bayshore District

ADVICE LETTER FILING MAILING LIST PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of San Carlos
Attn: Linda Navarro
600 Elm Street
San Carlos, CA 94070
Email: rweil@cityofsancarlos.org

City of San Mateo, City Hall
330 West 20th Ave.
San Mateo, CA 94403
Email: vhansen@cityofsanmateo.org

Adjacent Private and Public Utilities

Mid-Peninsula Water District
Attn: Tammy Rudock
P.O. Box 129
Belmont, CA 94002
tammyr@midpeninsulawater.org

Justin Ezell
Public Works Superintendent
1400 Broadway
Redwood City, CA 94063-2505
Email: jezell@redwoodcity.org

Ray Towne, Director of Public Works
Foster City
610 Foster City Blvd.
Foster City, CA 94404
Email: rtowne@fostercity.org

City of Burlingame
501 Primrose Rd.
Burlingame, CA 94010
Email: amorimoto@burlingame.org

Town of Hillsborough
1600 Floribunda Ave.
Hillsborough, CA 94010

City of South San Francisco
400 Grand Avenue
South San Francisco, CA 94080
Attn: Barry Nagal

San Bruno Water Department
567 El Camino Real
San Bruno, CA 94066

Daly City DWWR
Attn: Patrick Sweetland
153 Lake Merced Blvd.
Daly City, CA 94005
Email: psweetland@dalcycity.org

City of Brisbane
Attn: Betsy Cooper
50 Park Place
Brisbane, CA 94005
Email: bcooper@ci.brisbane.ca.us

Westborough Water District
P.O. Box 2747
South San Francisco, CA 94083



Bayshore District

Email: mdebry@hillsborough.net

ADVICE LETTER FILING MAILING LIST PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Other Interested Parties

Mr. John Gardner
Tilden Engineering
P.O. Box 897
Menlo Park, CA 94026

Service Area Maps Only

LAFCO (Local Agency Formation Commission)
Executive Officer, San Mateo LAFCO
County Government Center, Redwood City, CA 94063
Email: mpoyatos@co.sanmateo.ca.us

Fire Department Servicing
Affected Area



Bear Gulch District

ADVICE LETTER FILING MAILING LIST PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Menlo Park
Attn: Carol Augustine
701 Laurel Street
Menlo Park, CA 94025
Email: ctaugustine@menlopark.org

City of Menlo Park
Attn: Lisa Ekers
701 Laurel Street
Menlo Park, CA 94025
Email: leakers@menlopark.org

City of Palo Alto
Attn: Erik Keniston
250 Hamilton Avenue
Palo Alto, CA 94301
Email: eric.keniston@cityofpaloalto.org

Service Area Maps - only

Gail Sredanovic
2161 Ashton Avenue
Menlo Park, CA 94025

Town of Portola Valley
Public Works Director
765 Portola Rd.
Portola Valley, CA 94028
Email: hyoung@portolavalley.net

LAFCO
Executive Officer Ms. Martha Poyatos
455 County Center, 2nd Floor
Redwood City, CA 94063-1663

Town of Atherton
Attn: Duncan Jones
91 Ashfield Rd.
Atherton, CA 94027
Email: djones@ci.atherton.ca.us

Fire Department Servicing Affected Area

Town of Woodside
P.O. Box 620005
Woodside, CA 94062

Adjacent Private and Public Utilities

City of Menlo Park Water Dept.
701 Laurel Street
Menlo Park, CA 94025
Email: jpmcgirr@menlopark.org

Redwood City Water Department
P.O. Box 391
Redwood City, CA 94064

Los Trancos Water District
1263 Los Trancos Road
Portola Valley, CA 94025



Chico District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Chico
Attn: Frank Fields
P.O. Box 3420
Chico, CA 95927-3420
Email: ffields@ci.chico.ca.us

City of Chico
Attn: Dave Burkland
City Manager
P.O. Box 3420
Chico, Ca 95927
dburkland@ci.chico.ca.us

City of Chico
Attn: John Rucker
Assistant City Manager
P.O. Box 3420
Chico, Ca 95927
jrucker@ci.chico.ca.us

Service Area Maps

Butte LAFCO
1453 Downer Street, Suite C
Oroville, CA 95965
Email: jstover@buttecounty.net

(Service in Unincorporated Butte County)
Butte County Fire Rescue
Attn: Fire Chief
176 Nelson Ave
Oroville, CA 95965



Dixon District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Dixon
Attn: Finance Dept.
600 East A Street
Dixon, CA 95620
(Dixon finance department only wants notices of rate increases, not other filings)

Adjacent Private and Public Utilities

Solano Irrigation District
Attn: General Manager
508 Elmira Road
Vacaville, CA 95687
Email: admin@sidwater.org

Maine Prairie Water District
P.O. Box 73
Dixon, CA 95620

Service Area Maps

LAFCO (Local Agency Formation Commission)
Executive Officer
Solano LAFCO
675 Texas Street
Fairfield, CA 94533

Fire Chief
City of Dixon
600 East A Street
Dixon, CA 95620



Dominguez District

ADVICE LETTER FILING MAILING LIST
PER SECTION 111 (G) OF GENERAL ORDER NO. 96-A

Adjacent Privately and Publicly Owned Utilities

City of Torrance Water Department
Attn: Alan Berndt
20500 Madrona Ave
Torrance, CA 90630
Email: aberndt@torranceca.gov

City of Compton Municipal Water
Department
205 S. Willowbrook Avenue
Compton, CA 90220

City of Los Angeles
Department of Water and Power
P.O. Box 51111, Room 956
Los Angeles, CA 90051-0100
Email: Richard.west@ladwp.com

City of Long Beach Water Department
1800 East Wardlow Road
Long Beach, CA 90807

Golden State Water Company
Attn: Regulatory Affairs
630 East Foothill Blvd.
San Dimas, CA 91733

Park Water Company
P.O. Box 7002
Downey, CA 90241-7002
Email: pwcadviceletterservice@parkwater.com

Service Area Maps

Los Angeles LAFCO
Executive Officer
383 Hall of Administration
Los Angeles, Ca 90012

Fire Department Servicing Affected Area



East Los Angeles District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Commerce
Attn: Bob Zarihi
2535 Commerce Way
Commerce, CA 90040

City of Montebello, Engineering Dept
Attn: Roberta King,
1600 W. Beverly Blvd.
Montebello, CA 90640

City of Vernon
4305 Santa Fe Ave.
Vernon, CA 90058

City of Monterey Park
Attn: Victor Meza
Water Department
320 W. Newmark Ave.
Monterey Park, CA 91754

City of Los Angeles
Dept. of Water & Power
Attn: Richard West
P.O. Box 51111, Room 956
Los Angeles, CA 90051-0100
Email: richard.west@ladwp.com

Adjacent Private and Public Utilities

Park Water Company
P.O. Box 7002
Downey, CA 90241-7002
Email: pwcadviceletterservice@parkwater.com

San Gabriel Valley Water Company
Attn: Daniel A. Dell'Osa
11142 Garvey Ave.
El Monte, CA 91733
Email: dadellosa@sgvwater.com

Montebello Land & Water Company
Attn: Kenneth S. Bradbury
344 E. Madison Avenue
Montebello, CA 90640
Email: ken@mtblw.com

South Montebello Irrigation District
Attn: David Herrera
864 W. Washington Blvd.
Montebello, CA 90640

Service Area Maps

Los Angeles LAFCO
Executive Officer
383 Hall of Administration
Los Angeles, CA 90020

Los Angeles County Fire Dept.
Attn: Alfie Blanch
5847 Rickenbacker Rd.
Commerce, CA 90040
ablanch@fire.lacounty.gov

Fire Department Servicing Affected Area



Hermosa-Redondo District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, CA 90254
Email: rmorgan@hermosabch.org

City of Redondo Beach, Public Works Dept.
Attn: Rob Osborne
415 Diamond Street,
Redondo Beach, CA 90277
Email: rob.osborne@redondo.org

City of Torrance, Dept. of Water
Attn: Alan Berndt
20500 Madrona Ave
Torrance, CA 90630
Email: ab Berndt@torranceca.gov

Adjacent Private and Public Utilities

City of Manhattan Beach
Attn: Rob Erikson
3621 Bell Avenue
Manhattan Beach, CA 90266

City of Hawthorne
4455 W. 126th St.
Hawthorne, CA 90250

City of Los Angeles, Dept. of Water & Power
Mr. Richard A. West, Rates Manager
P.O. Box 51111, Room 956
Los Angeles, CA 90051-0100
Email: richard.west@ladwp.com

Golden State Water Company
Attn: Ronald Moore, Regulatory Affairs
630 East Foothill Blvd.
San Dimas, CA 91773

Park Billing Company
Attn: Tina Davis and Vicky Miller
P. O. Box 910
Dixon, CA 95620
Email: vmiller@parkbilling.com
Email: tdavis@parkbilling.com

Service Area Maps

Los Angeles LAFCO
Executive Officer
383 Hall of Administration
Los Angeles, Ca 90012

Los Angeles County Fire Dept.
Attn: Alfie Blanch
5847 Rickenbacker Rd.
Commerce, CA 90040
ablanch@fire.lacounty.gov

Fire Department Servicing Affected Area



Kern River Valley District

ADVICE LETTER FILING MAILING LIST
PER SECTION 111 (G) OF GENERAL ORDER NO. 96-A

Interested Parties

Jim Davis
8824 Cache
Leona Valley, CA 93551

Rob Benson
PO Box 1557
Kernville, Ca 93238
rcbenson@earthlink.net

Darlene Studdard
Committee Member
Residents Against Water Rates
PO Box 3701
Wofford Heights, Ca 93285-3701
For: Residents Against Water Rates (Raw)

Jeremy Callihan
Department of Water Resources
Safe Drinking Water Program
1416 Ninth Street, Rm. 816
Sacramento, CA 95814

Linda Ng
Department of Water Resources
Safe Drinking Water Program
1416 Ninth Street, Rm. 816
Sacramento, CA 95814

Service Area Map only

Kern County LAFCO
Executive Officer
5300 Lennox Avenue
Suite 303
Bakersfield, CA 93309
Email: KCLAFCO@bak.rr.com



King City District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

King City
212 S. Vanderhurst Avenue
King City, CA 93930
Attn: Jim Larson, Finance Director

Adjacent Private and Public Utilities

Little Bear Water Company
51201 Pine Canyon Road, Space #125
King City, CA 93930

Park Billing Company
Attn: Tina Davis and Vicky Miller
P. O. Box 910
Dixon, CA 95620
Email: vmiller@parkbilling.com
Email: tdavis@parkbilling.com

Service Area Maps Only

Kate McKenna, E.O.
LAFCO of Monterey County
Local Agency Formation Commission
P O Box 1369, Salinas, CA 93902

Fire Chief
King City
212 S. Vanderhurst Avenue
King City, CA 93930



Livermore District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Livermore
Utility Billing Division
Attn: Erik Peterson
1052 S. Livermore Ave.
Livermore, CA 94550
Email: etpeterson@ci.livermore.ca.us

Alameda County Flood Control
& Water Conservation District
Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551

Service Area Maps Only

Mona Palacios Executive Officer
Alameda LAFCO
1221 Oak Street Room 555
Oakland, CA 94612
Email: mona.palacios@acgov.org

Fire Chief
City of Livermore
1052 S. Livermore Avenue
Livermore, CA 94550



Los Altos District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Cupertino
Attn: Timm Borden
10300 Torre Avenue
Cupertino, CA 95014-3202

City of Los Altos
Attn: Jim Gustafson
1 North San Antonio Rd.
Los Altos, CA 94022

Town of Los Altos Hills
Attn: Carl Cahill
26379 Fremont Road
Los Altos Hills, CA 94022

Adjacent Private and Public Utilities

San Jose Water Company
Attn: Palle Jensen
374 W. Santa Clara St.
San Jose, CA 95196
Email: palle.jensen@sjwater.com

Purissima Hills County Water District
Attn: Patrick D. Walter
26375 Fremont Rd.
Los Altos, CA 94022
Email: pwalter@purissimawater.org

City of Mountain View, Water Dept.
231 N. Whisman Rd.
Mt. View, CA 94043
Email: will.medina@mountainview.gov

City of Sunnyvale, Water Dept.
Attn: Val Conzet Water Operations Manager
P.O. Box 3707
Sunnyvale, CA 94088-3703
Email: vconzet@ci.sunnyvale.ca.us
jperry@ci.sunnyvale.ca.us

City of Santa Clara, Water Dept.
Attn: Alan Kurotori
Water and Sewer Utilities
1500 Warburton Ave.
Santa Clara, CA 95050

City of Palo Alto, City Hall
Attn: Catherine Cox
250 Hamilton Ave.
Palo Alto, CA 94301
Email: catherine.cox@cityofpaloalto.org

Other Parties Requesting Notification

Great Oaks Water Company
15 Great Oaks Blvd. #100
San Jose, CA 95119
Email: bloehr@greatoakswater.com

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Email: dtaylor@valleywater.org

Service Area Maps Only

LAFCO of Santa Clara County
Neelima Palacherla, Executive Director
70 W. Hedding St. 11th Floor
San Jose, CA 95110
Email: neelima.palacherla@ceo.sccgov.org

Fire Department Serving Affected Area



Marysville District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Marysville
Attn: Dixon Coulter
P.O. Box 150
Marysville, CA 95901
Email: dcoulter@marysville.ca.us

Adjacent Private and Public Utilities

City of Yuba City
Utilities Director
302 Burns Drive
Yuba City, CA 95991

Olivehurst Public Utility District
Attn: Gary Plasterer
P.O. Box 670
Olivehurst, CA 95961

Linda County Water District
Attn: Dave Gothrow, Mgr.
1280 Scales
Marysville, CA 95901

Service Area Maps only

Yuba County LAFCO
915 8th Street, Suite 107
Marysville, CA 95901

CDF – Northern Region Chief
P.O. Box 944246
Sacramento, CA 94244-2460

Fire Department Serving Affected Area



Oroville District

ADVICE LETTER FILING MAILING LIST
PER SECITON III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Oroville
Attn: Diane MacMillian
1735 Montgomery Street
Oroville, CA 95965

Adjacent Private and Public Utilities

Thermalito Irrigation District
Attn: Jayme Boucher
410 Grand Ave.
Oroville, CA 95965
Email: joucher@twsd.info

South Feather Water & Power
Attn: Mike Glaze
2310 Oroville Quincy Hwy.
Oroville, CA 95966
Email: glaze@southfeather.com

Service Area Maps Only

Butte County LAFCO
1453 Downer St. Ste. C
Oroville, CA 95965
Email: jstover@buttecounty.net

Fire Chief
City of Oroville
1735 Montgomery Street
Oroville, CA 95965



Palos Verdes District

ADVICE LETTER FILING MAILING LIST
PER SECITON III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Lomita
Attn: Woody Thurlow
P.O. Box 339
Lomita, CA 90717

City of Palos Verdes Estates
Attn: Judy Smith
340 Palos Verdes Drive West
Palos Verdes Estates, CA 90274
Email: cityclerk@pvestates.org

City of Rancho Palos Verdes
30940 Hawthorne Blvd.
Rancho Palos Verdes, CA 90275
Email: publicworks@rpv.com

City of Rolling Hills
No. 2 Portuguese Bend Road
Rolling Hills, CA 90274
Email: hluce@cityofrh.net

City of Rolling Hills Estates
Attn: Mike Whitehead
4045 Palos Verdes Drive North
Rolling Hills Estates, CA 90274

Adjacent Private and Public Utilities

City of Torrance, Water Dept.
Attn: Alan Berndt
20500 Madrona Ave
Torrance, CA 90630
Email: aberndt@torranceca.gov

Mr. Richard A. West, Rates Manager
City of Los Angeles, Dept. of Water & Power
P.O. Box 51111
Los Angeles, CA 90051-0100
Email: richard.west@ladwp.com

Service Area Maps

Los Angeles LAFCO
Executive Officer
383 Hall of Administration
Los Angeles, CA 90012

Los Angeles County Fire Dept.
Attn: Alfie Blanch
5847 Rickenbacker Rd.
Commerce, CA 90040
ablanch@fire.lacounty.gov

Fire Department Servicing Affected Area



Redwood Valley District

ADVICE LETTER FILING MAILING LIST PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Jeffrey Young
473 Woodley Place
Santa Rosa, CA 95409
Email: jffyng@gmail.com

Marcos Pareas
P. O. Box 152
Dillon Beach, CA 94929
Email: mapreas@gmail.com

County of Marin
Director of Public Works
P. O. Box 4186
San Rafael, CA 94913-4186

County of Lake
Special Districts
230 North Main
Lakeport, CA 95453

Joshua Ziese
California Department of Public Health
P.O. Box 997377, MS 7418
1616 Capital Ave.
Sacramento, CA 95899

Lance Reese
California Department of Public Health
P.O. Box 997377, MS 7418
1616 Capital Ave.
Sacramento, CA 95899

Service Area Maps only

County of Marin LAFCO
3501 Civic Center Drive
San Rafael, CA 94903

Fire Department Serving Affected Area



Salinas District

ADVICE LETTER MAILING LIST PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Salinas
City Engineer
200 Lincoln Avenue
Salinas, CA 93901

City of Salinas
City Attorney
200 Lincoln Avenue
Salinas, CA 93901
Email: vanessav@ci.salinas.ca.us
Email: chrisc@ci.salinas.ca.us

Adjacent Private and Public Utilities

Park Billing Company
Attn: Tina Davis and Vicky Miller
P.O. Box 910
Dixon, CA 95620
Email: vmiller@parkbilling.com
Email: tdavis@parkbilling.com

Gavilan Water Company
644 San Juan Grade Road
Salinas, CA 93906

Alco Water Service
Attn: Tom Adcock
249 Williams Road
Salinas, CA 93905

Monterey County Administration
855 East Laurel Drive, Bldg C
Salinas, CA 93905

Service Area Maps

Executive Officer
LAFCO of Monterey County
P.O. Box 1369
Salinas, CA 93902

Fire Chief
City of Salinas
200 Lincoln Avenue
Salinas, CA 93901



Selma District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Selma, City Hall
1710 Tucker Street
Selma, CA 93662
Email: DBH@CityofSelma.com

Adjacent Private and Public Utilities

City of Fowler
Attn: D. Weisser
128 S. 5th Street
Fowler, CA 93625
Email: DWeisser@ci.fowler.ca.us

Other Parties Request Notification

City of Fresno, Dept. of Public Works
2600 Fresno Street
Fresno, CA 93721-3624

Service Area Maps only

LAFCO (Local Agency Formation Commission)
Attn: Executive Officer
2115 Kern St. Ste.310
Fresno, CA 93721
Email: jewitte@co.fresno.ca.us

Fire Chief
City of Selma
1710 Tucker Street
Selma, CA 93662



Stockton District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Stockton
Attn: Sara Cortes
425 N. El Dorado St.
Stockton, CA 95202

San Joaquin County Board of Supervisors
44 N. San Joaquin St. Ste. 627
Stockton, CA 95202
Email: lsahyoun@sjgov.org

Adjacent Private and Public Utilities

City of Stockton Municipal Utility Dept.
2500 Navy Drive
Stockton, CA 95206

Director of Public Works, County of San Joaquin
1810 East Hazelton Ave.
Stockton, CA 95205
Email: vaguilar@sjgov.org

Stockton-East Water District
6767 East Main Street
Stockton, CA 95215
Email: sewd@sewd.net

Other Parties Requesting Notification

Heinz, USA
Attn: Tom McMurty
P.O. Box 57
Stockton CA 95201

Commanding Officer (Code 136)
Naval Facilities Engineering Com.
Re: Cont. #N68711-74-M-7250-P00999
Cont. #N68711-75-C-5006-P00999
1220 Pacific Highway
San Diego CA 92132

Service Area Maps

San Joaquin LAFCO
509 W. Weber Ave. Ste 420
Stockton, CA 95203

City of Stockton
Fire Chief
425 North El Dorado St.
Stockton, CA 95202

Park Billing Company
Attn: Tina Davis and Vicky Miller
P. O. Box 910
Dixon, CA 95620
Email: vmiller@parkbilling.com
Email: tdavis@parkbilling.com

Pearl West
3731 Portsmouth Circle North
Stockton, CA 95219



Visalia District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Visalia
c/o Dooley, Herr, Carlson & Peltzer
100 Willow Plaza, Suite 300
Visalia, CA 93291
Attn: Kenneth Richardson
559-636-5600 Fax 559-636-9759
559-636-5601 Email: kenr@dhlaw.net

Osa Wolff
wolff@smwlaw.com

Adjacent Private and Public Utilities

Bedel Water Company
Attn: Glen Lublin
2536 E. College Ave
Visalia, CA 93292
559-713-0794

Service Area Maps

Tulare County Resource Management Agency
LAFCO
Executive Officer
5961 S. Mooney Blvd.
Visalia, CA 93277
559-733-6291 Fax 559-730-2653

Fire Chief
City of Visalia
707 West Acequia Street
Visalia, CA 93291



Westlake District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

Municipalities and Governmental Agencies

City of Thousand Oaks
Attn: Jay Spurgin, Deputy Public Works Director
2100 Thousand Oaks Blvd.
Thousand Oaks, CA 91362-2903

Adjacent Private and Public Utilities

City of Los Angeles, Dept. of Water & Power
Mr. Richard A. West, Rates Manager
P.O. Box 51111, Room 956
Los Angeles, CA 90051-0100
Email: Richard.west@ladwp.com

California-American Water Company
4701 Beloit Drive
Sacramento, CA 95838-2434
Email: ca.rates@amwater.com

Ventura Regional Sanitation District
Attn: Jocelyn Blysmá
1001 Partridge Dr., Suite 150
Ventura, CA 93003

Las Virgenes Municipal Water District
Attn: Carol Palma
4232 Las Virgenes Road
Calabasas, CA 91302

Service Area Maps

Fire Department Servicing Affected Area
Ventura LAFCO
Executive Officer
800 S. Victoria Avenue
Ventura, CA 93009-1850
Email: kim.uhlich@ventura.org



Willows District

**ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A**

City of Willows
Civic Center
201 N. Lassen Street
Willows, CA 95988

Service Area Maps Only

Christy Leighton, Executive Officer
County of Glenn Local Agency Formation Commission
125 South Murdock
Willows, California 95988

Fire Chief
City of Willows
201 North Lassen Street
Willows, CA 95988
Email: wpeabody@cityofwillows.org

URGENCY ORDINANCE NO. 905

AN URGENCY ORDINANCE OF THE CITY COUNCIL OF
THE CITY OF LANCASTER, CALIFORNIA ADDING
CHAPTER 8.48 TO THE LANCASTER MUNICIPAL CODE
PROHIBITING THE WASTE OF WATER IN THE CITY OF
LANCASTER

THE CITY COUNCIL OF THE CITY OF LANCASTER, CALIFORNIA, DOES
HEREBY ORDAIN AS FOLLOWS:

Section 1. Chapter 8.48 is hereby added to Title 8 of the Lancaster Municipal Code to read as set forth in Exhibit A attached hereto and incorporated herein by reference.

Section 2. That the City Clerk shall certify to the passage of this Ordinance and will see that it is published and posted in the manner required by law.

Section 3. As a result of State action and a federal court order the pumping of water from the State Water Project and Central Valley Project has been substantially reduced. Governor Schwarzenegger has declared portions of the state to be in drought emergencies. Wasting water will result in an adverse impact on the availability of adequate water to service needs of all citizens within the City. Summer months are a time of maximum water usage. Wasteful water practices prove a threat to the public health, safety and welfare and require immediate action to curb such practices. In order to protect the public health, safety and welfare, the City Council hereby declares the need for this ordinance to take effect immediately upon approval.

Section 4. If any section, subsection, sentence, clause, phrase or portion of this Ordinance, including Exhibit "A", is held for any reason to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance. The City Council of the City of Lancaster hereby declares that it would have adopted this Ordinance and each section, subsection, sentence, clause, phrase or portion thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases or portions be declared invalid or unconstitutional.

I, Geri K. Bryan, CMC, City Clerk of the City of Lancaster, do hereby certify that the foregoing *urgency* ordinance was regularly introduced and adopted on the 8th day of July, 2008 at a regular meeting of the City Council of the City of Lancaster, California by the vote:

AYES: Council Members: Mann, Marquez, Sileo, Vice Mayor Smith, Mayor Parris

NOES: None


ABSTAIN: None


ABSENT: None

I, Geri K. Bryan, CMC, City Clerk of the City of Lancaster, do hereby certify that the foregoing *urgency* ordinance was placed upon a second reading and adopted on the 22nd day of July, 2008 at a regular meeting of the City Council of the City of Lancaster, California.

ATTEST:

APPROVED:


GERI K. BRYAN, CMC
City Clerk
City of Lancaster


R. REX PARRIS
Mayor
City of Lancaster

STATE OF CALIFORNIA }
COUNTY OF LOS ANGELES } ss
CITY OF LANCASTER }

CERTIFICATION OF ORDINANCE
CITY COUNCIL

I, _____, _____ City of Lancaster, California, do hereby certify that this is a true and correct copy of the original Urgency Ordinance No. 905, for which the original is on file in my office.

WITNESS MY HAND AND THE SEAL OF THE CITY OF LANCASTER, on this _____ day of _____, _____.

(seal)

URGENCY ORDINANCE NO. 905

EXHIBIT A

**ADDITION OF CHAPTER 8.48 TO THE
LANCASTER MUNICIPAL CODE**

Section. 8.48.010. Waste of water or excessive and unauthorized use of water in the City is hereby prohibited and declared unlawful.

Section 8.48.020. Definitions:

A. Customer - any person who is an owner, occupant, or user of real property to which water is supplied by a public water system. Customer shall also mean any person who uses water supplied by a public water system, or to any person who is billed for the supply of water from a public water system, or to any person who is responsible for or otherwise has the right or permission to utilize the supply of water provided by a public water system.

B. Person - any natural person, any group of persons, any firm, partnership, association, corporation, company, public agency or any other organization or entity.

C. Public water utility - the term "public water utility" as herein used shall mean and embrace all corporations, companies, individuals, associations, their lessees, trustees or receivers, that now or may hereafter own, operate, or control any plant or equipment, or any part of a plant or equipment within the City for the production, delivery, or furnishing for or to other persons, firms, associations or corporations, partly or wholly, from an artesian well or wells, or imported water sources water for business, manufacturing, agricultural, domestic or household use.

D. Public water system - any network of pipes, conduits, wells, machinery, reservoirs, holding tanks, and any other components, including any combination thereof, which supplies water to customers who are charged a fee of any kind or nature for such service, or which is designed to supply or is capable of supplying water to customers for a fee at two or more dwellings, buildings, structures, or lots.

E. Recycled water – highly treated effluent from any sewage treatment plant operated by a governmental or private entity.

F. Water - all water, including wastewater and recycled water, supplied to any customer who uses water.

G. Water supply shortage – durations of time when water supplies are not available to meet normal water demand as during periods of drought or natural disaster.

Section 8.48.030. Any one of the following acts shall constitute a waste of water, as the term is used in this Ordinance, and shall be prohibited at all times:

A. Permitting a hydrant, tap, cock, or valve connected with any water system belonging to any public utility, to leak into the ground or into any sink, bowl, toilet, or tub connected with a sewer or cesspool, or permitting water to drain from a person's premises into any street, alley, or road, after the person permitting the same has been notified to remedy such leak or to prevent such draining by any public officer, or an agent of any public utility, as hereinafter defined.

B. Permitting water from any water system belonging to any public utility to flow from any hose, tap, valve, hydrant, pipe, or cock directly into any gutter, storm water drain, sewer or cesspool for two minutes or longer without first putting such water to a beneficial use.

C. Permitting water to leak from any water main in a water system belonging to any public utility for an unreasonable length of time.

D. Allowing runoff into streets, gutters or other paved areas, from irrigating landscaped improvements, whether because of broken or misdirected sprinkler systems, to persist for more than two minutes total duration.

E. Irrigating lawns and / or landscaped improvements between 10:00 AM and 10:00 PM except from October 31 through the following March 1.

F. Washing vehicles with a free running hose where the water is allowed to run into the street, gutter or storm water drain. Hoses that are fitted with operable on/off nozzles or washing vehicles solely using a bucket are permissible.

G. Washing, cleaning or hosing down buildings, driveways, patios, parking lots, sidewalks, alleys, etc., provided this subsection shall not prohibit the washing of windows.

H. Allowing water, at or as a result of its point of use, to pond deeper than one-quarter inch on any paved or unpaved surface. This section shall not apply to swimming pools, fountains or other similar decorative or recreational water features.

Section 8.48.040. Any act that constitutes a waste of water in violation of this Chapter shall constitute a public nuisance and shall be subject to abatement in the manner provided in Chapter 8.28.

Section 8.48.050. In any prosecution charging a waste of water or excessive and unauthorized use of water as set forth in this Ordinance, the waste of water or excessive and unauthorized use of water, together with proof that such waste originated at any residence or place of business, shall constitute in evidence a prima facie presumption that the owner, or occupant for the time being of such residence or place of business, was responsible for such waste.

Section 8.48.060. Upon application of a property owner or occupant, the City Manager may grant a variance to the provisions of this Chapter.

Section 8.48.070. If any part or provision of this chapter is found to be invalid or unenforceable by a court of law, such invalidity shall not affect any other part or provision herein, and all remaining provisions of this chapter will be valid and enforceable to the fullest extent permitted by law.

ORDINANCE NO. 907

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF LANCASTER ADDING CHAPTER 8.50, LANDSCAPING INSTALLATION AND MAINTENANCE, TITLE 8 HEALTH AND SAFETY, MODIFYING CHAPTER 8.30, RESIDENTIAL LANDSCAPING INSTALLATION AND MAINTENANCE, TITLE 8 HEALTH AND SAFETY, DELETING CHAPTER 15.48, SPECIFICATIONS FOR LANDSCAPE DEVELOPMENT, TITLE 15 BUILDING AND CONSTRUCTION, MODIFYING CHAPTER 17.08, RESIDENTIAL ZONES, CHAPTER 17.12, COMMERCIAL ZONES, AND 17.16, INDUSTRIAL ZONES, TITLE 17 ZONING OF THE LANCASTER MUNICIPAL CODE RELATING TO WATER EFFICIENT LANDSCAPING REQUIREMENTS TO INCLUDE RECENT UPDATES TO STATE LAW

WHEREAS, the limited supply of state waters are subject to ever increasing demands; and

WHEREAS, the City's economic prosperity depends on adequate supplies of water; and

WHEREAS, the City's policies promote conservation and efficient use of water; and

WHEREAS, landscapes provide recreation areas, clean the air and water, prevent erosion, offer fire protection and replace ecosystems; and

WHEREAS, landscape design, installation and maintenance can and should be water efficient; and

WHEREAS, this ordinance has been determined to be Categorically Exempt pursuant to Section 15308, Class 8 of the California Environmental Quality Act (CEQA). This section consists of action taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement or protection of the environment where the regulatory process involves procedures for protection of the environment.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LANCASTER DOES ORDAIN AS FOLLOWS:

Section 1. Title 8, Chapter 8.50 is hereby added to read as follows:

Chapter 8.50. LANDSCAPING INSTALLATION AND MAINTENANCE

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8.50.010 Title

This chapter shall be known and may be cited as the Lancaster Water Efficient Landscape Ordinance.

8.50.020 Purpose and Intent

In accordance with the Water Conservation in Landscaping Act (GOVERNMENT CODE SECTIONS 65591 *et. seq.*) the purpose and intent of this ordinance is to:

- A. Promote the values and benefits of landscaping while recognizing the need to utilize water and other resources as efficiently as possible.
- B. Use water efficiently without waste by setting a Maximum Applied Water Allowance as an upper limit for water use and reduce water use to the lowest practical amount.
- C. Establish a structure for planning, designing, installing, maintaining and managing water efficient landscapes in new construction and significantly renovated projects;
- D. Promote water management practices and water waste prevention for existing landscapes;
- E. Implement water conservation policies contained in the City's General Plan.

8.50.030 Definitions

For the purpose of carrying out the intent of this Ordinance, the words, phrases and terms included herein have the meaning ascribed to them in this article.

- 1. **"Application Rate"** means the volume of water applied to a given area, measured in inches per minute, inches per hour, or gallons per hour.
- 2. **"Applied Water"** means the quantity of water supplied by the irrigation system to the landscape.
- 3. **"Anti-Drain Valve"** means a valve located under a sprinkler head to hold water in the system to prevent drainage from sprinkler heads when the system is off.
- 4. **"Certificate of Completion"** means the document required under 8.50.052 and 8.50.059.
- 5. **"Certified Landscape Irrigation Auditor"** means a person certified to perform landscape irrigation audits by a recognized professional trade organization or other educational organization.
- 6. **"Certified Irrigation Designer"** means a person certified to design irrigation systems by a professional trade organization or other educational organization.
- 7. **"Check Valve"** means a "one way" valve that prevents water from flowing backward through it. Spring loaded check valves are sometimes installed inside or at the inlet of sprinkler heads. The check prevents low head drainage.
- 8. **"Common Interest Developments"** means community apartment projects, condominium projects, planned developments and stock cooperatives per Civil Code Section 1353.8.

9. **“Controller”** means an automatic timing device used to remotely control valves or heads to set an irrigation schedule. A weather-based controller is a controller that uses evapotranspiration or weather data. A self-adjusting irrigation controller is a controller that uses sensor data (i.e., soil moisture sensor).
10. **“Development Proposal”** shall mean an application for approval of a specific plan, subdivision, conditional use permit, site plan review, tentative tract map, parcel map or any other discretionary development permit or entitlement application which has been filed with and is pending consideration by the City.
11. **“Drip Irrigation”** means any non-spray low volume irrigation system utilizing emission devices with a flow rate equal to or less than two (2) gallons per hour.
12. **“Ecological Restoration Project”** means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
13. **“Effective Precipitation” or “Usable Rainfall”** means the portion of total precipitation that is used by the plants.
14. **“Emitter”** means a drip irrigation emission device that delivers water slowly from the system to the soil measured as gallons per hour.
15. **“Established Landscape”** means the point at which plants in the landscape have developed significant roots growth into the soil. Typically, most plants are established after one or two years of growth.
16. **“Estimated Applied Water Use”** means the portion of the Estimated Total Water Use that is derived from applied water, as described in the current City of Lancaster Landscape and Irrigation Design Standards.
17. **“Estimated Total Water Use”** means the annual total amount of estimated water needed to keep the plants in the landscaped area healthy. It is based upon such factors as the local evapotranspiration rate, the size of the landscaped area, the types of plants and the efficiency of the irrigation system, as described in the current City of Lancaster Landscape and Irrigation Standard.
18. **“ET Adjustment Factor”** means a factor that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to a target landscape. A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation.
19. **“Evapotranspiration Rate”** means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specific time.

20. **“Flow Rate”** means the rate at which water flows through pipes, valves, or emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.
21. **“Hardscape”** means any durable surface material (pervious and non-pervious). Hardscape shall be considered in the determination of the maximum applied water allowance and storm water runoff flows.
22. **“Hydrozone”** shall mean a portion of the landscaped area having plants with similar water needs that are served by a valve or set of valves with the same schedule. A hydrozone may be irrigated or non-irrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a non-irrigated hydrozone.
23. **“Infiltration Rate”** means the rate of water entry into the soil expressed as a depth of water per unit of time (i.e., inches per hour).
24. **“Irrigation Efficiency”** means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices.
25. **“Landscape Documentation Package”** means the documents required under 8.50.054.
26. **“Landscape Area”** means all of the irrigated planting and turf areas, water features and up to 10% of the square footage of pervious non-irrigated planting areas in a landscape design plan subject to the Maximum Applied Water Allowance (MAWA) calculation. The 10% of non-irrigated planting area shall be added to the low water use Hydrozone area, used in the Landscape Documentation Package. The following is not included in the landscaped area: footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscape and other non-irrigated areas designated for non-development (i.e., open spaces). Excessive uses of impervious areas are discouraged as it will increase storm water runoff. Designated recreation areas and areas permanently and solely dedicated to edible plants such as orchards and vegetable gardens are subject to the MAWA with an ET adjustment factor not to exceed 1.0.
27. **“Landscape Architect”** means a person who holds a license to practice landscape architecture in the State under the authority of Government Code Section 5615 (Landscape Architects Practice Act).
28. **“Landscape Contractor”** means a person licensed (i.e., C-27 license) by the State to construct, maintain, repair, install, or subcontract the development of landscape systems and facilities per Business and Professionals Code, Section 7058 and 7059.

29. **“Landscape Irrigation Audit”** shall mean a process to perform site inspections, evaluate irrigation systems and develop efficient irrigation systems. At a minimum, the audit shall be in accordance with the California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook, the entire document that is hereby incorporated by reference. (See Landscape Irrigation Auditor Handbook, Dept. of Water Resources, Water Conservation Office, 2004)
30. **“Landscape Project”** means a project, for the purposes of this ordinance, meeting the requirements under 8.50.040.
31. **“Low Volume Irrigation”** means any irrigation system with a flow rate equal to or less than 0.75 inches per hour, including drip irrigation, subsurface drip, micro-sprinklers and similar irrigation systems.
32. **“Low Water use plant material”** shall mean trees, shrubs and ground covers that survive with a limited amount of supplemental water, as recommended by the City of Lancaster Plant List, or as identified in the most recent edition of the following publication: Sunset Western Garden Book, Sunset Books, Lane Publishing Co., Menlo Park, California.
33. **“Maximum Applied Water Allowance”** means, for design purposes, the upper limit of annual applied water for the established landscaped area as specified in the current City of Lancaster Landscape and Irrigation Design Standards. It is based upon the area’s reference evapotranspiration, the ET Adjustment Factor and the size of the landscaped area. The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance.
34. **“Mined-land Reclamation Projects”** means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.
35. **“Mulch”** means any organic material such as leaves, bark, straw or inorganic mineral materials, such as rocks, gravel and decomposed granite, left loose and applied to the soil surface for the beneficial purposes of reducing evaporation and suppressing weeds.
36. **“Operating Pressure”** means the pressure at which an irrigation system is designed by the manufacturer to operate.
37. **“Overspray”** means the water that is delivered beyond the target area, wetting pavements, walks, structures, or other non-targeted areas.
38. **“Plant Factor”** means a factor that, in combination with irrigation efficiency, when multiplied by reference evapotranspiration, estimates the amount of water used by plants. For purposes of this ordinance, the plant factor of low water use plants ranges from 0.0 to 0.3, the plant factor of moderate water use plants ranges from 0.4 to 0.6, and the plant factor of high water use plants ranges from 0.7 to 1.0.

39. **“Precipitation Rate”** means the rate of rainfall measured in inches per hour.
40. **“Project Applicant”** means the individual or entity submitting a Landscape Documentation Package required under 8.50.054, to request a permit, plan check, or design review from the City. A project applicant may be the property owner or his/her designee.
41. **“Rain Sensor”** or **“Rain Sensing Shutoff Device”** means a component that automatically suspends the irrigation event when it rains.
42. **“Recreational Area”** means portions of parks, playgrounds, sports fields, golf course, or schoolyards in public and private projects where turf provides a playing surface or serves other high use recreational purposes.
43. **“Recycled Water or Reclaimed Water”** means treated or recycled waste water of a quality suitable for nonpotable uses such as landscape irrigation and water features. This water is not intended for human consumption.
44. **“Reference Evapotranspiration”** or **“ETo”** means a standard measurement of environmental parameters that affect the water use of plants. ETo is given in inches per day, month, or year, and is an estimate of the evapotranspiration of a large field of four-to-seven-inch tall, cool season turf that is well-watered. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowances so that regional differences in climate can be accommodated.
45. **“Rehabilitated Landscapes”** means any modification to existing landscaping that requires a permit, plan check, or design review and meets the requirements of 8.50.040.
46. **“Runoff”** means water that is not absorbed by the soil or landscape to which it is applied and flows from the landscape area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a slope. Grading and landscape shall be designed to minimize runoff.
47. **“Soil Moisture Sensor or Sensing Device”** means a device that measures the amount of water in the soil.
48. **“Soil Texture”** means the classification of soil based on its percentage of sand, silt and clay.
49. **“Sprinkler Head”** means a device that delivers water through a nozzle.
50. **“Static Water Pressure”** means the pipeline or municipal water supply pressure when water is not flowing or at rest.

51. **“Station”** means an area served by one valve or by a set of valves that operate simultaneously.
52. **“Turf”** means a groundcover surface of mowed grass. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue and Tall fescue are common cool-season grasses. Bermuda grass, Kikyu grass, Seashore Paspalum, St. Augustine grass, Zoysia grass and Buffalo grass are common warm-season grasses.
53. **“Valve”** means a device used to control the flow of water in the irrigation system. It may also mean all of the sprinklers or emitters in a line controlled by the valve.
54. **“Water Use Efficiency Statement”** means a narrative summary of the water use efficiency practices to be applied in a landscape project.
55. **“Water Conserving Plant Species”** means a plant species identified as using less water than plants in the same water use category.
56. **“Water Efficient Landscape Worksheet”** means the document described in the current City of Lancaster Landscape and Irrigation Design Standards.

8.50.040 Applicability

- A. Except as provided in subparagraph B herein below, this Chapter shall apply to the following:
 - (1) All new construction and rehabilitated landscaping for public agency and private development projects with a landscape area equal to or greater than 1,000 square feet; therefore requiring a permit, plan check and/or design review;
 - (2) New construction and rehabilitated landscapes which are developer-installed in single-family and multi-family residential projects with a landscape area equal to or greater than 1,000 square feet requiring a permit, plan check and/or design review;
 - (3) New construction and rehabilitated landscapes which are homeowner-provided and/or homeowner-hired landscaping in single-family and multi-family residential projects with a landscape area equal to or greater than 1,000 square feet, therefore requiring a permit, plan check and/or design review;
 - (4) Existing landscapes with a landscape area equal to or greater than 1,000 square feet are limited to Sections 8.50.070 and 8.50.081;
 - (5) Cemeteries. Recognizing the special landscape management needs of cemeteries, new cemeteries are limited to completing the Water Efficient Landscape Worksheet and the Landscape and Irrigation Maintenance Schedules found in the City of Lancaster Landscape and Irrigation Design Standards and to meeting the requirements of Sections 8.50.061 and 8.50.062. Existing cemeteries are limited to the provisions of 8.50.071. Where recycled water is reasonably available, as determined by the Director of Public Works, all cemeteries shall use recycled water for landscape irrigation purposes;
 - (6) All existing improved properties that are purchased by the City under the home foreclosure program for resale as low-moderate income homes.

B. This section shall not apply to:

- (1) Registered historical sites;
- (2) Ecological restoration projects that do not require permanent irrigation systems;
- (3) Mined-land reclamation projects that do not require a permanent irrigation system;
- (4) Any project with a landscaped area less than 1,000 square feet;
- (5) Any project whose landscaping and water features is supplied solely from recycled water systems;
- (6) Homeowner-provided and homeowner-hired landscaping at single-family and multi-family residential projects less than 1,000 square feet.

C. Required Approval for Projects

No development proposal shall be approved unless the person or entity authorized to grant approval therefore finds that the project satisfies the criteria set forth in the provisions of this chapter.

D. Processing Procedures and Submittal Requirements

As a condition of approval for any development proposal, the applicant shall submit landscape plans meeting the requirements listed below to the Planning Department for review.

E. Residential Landscaping

As a condition of approval for any residential development proposal, the applicant shall submit landscape plans for all areas other than footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscape and other approved non-irrigated areas designated for non-development (i.e., open spaces); including front, rear and side yards.

8.50.050 Provisions for New Construction or Rehabilitated Landscapes

Landscape projects subject to 8.50.040 are also subject to all of the provisions set forth in the provisions of this chapter unless explicitly exempted, and shall meet the City of Lancaster Landscape and Irrigation Design Standards which shall be adopted by separate resolution of the City Council.

8.50.051 Compliance with Landscape Documentation Package

Prior to construction, the project applicant shall submit a Landscape Documentation Package to the City Public Works Department that meets all the criteria and specifications of this Ordinance. The specific format of the documentation package shall comply with the City of Lancaster Landscape and Irrigation Design Standards.

8.50.052 Compliance with the Certificate of Completion

A. The project applicant shall:

- (1) Prior to backfilling, have a licensed landscape architect, certified irrigation auditor, or licensed landscape contractor conduct a preliminary field observation of the irrigation system;
- (2) Upon project installation, have a licensed landscape architect or licensed landscape contractor conduct a final field observation for the approval of the certificate;

- (3) Upon project installation, have a certified irrigation auditor conduct a landscape irrigation audit as required under 8.50.062;
- (4) Submit the signed Certificate of Completion to the City for approval;
- (5) Receive the Certificate of Occupancy or equivalent from the City;
- (6) Submit copies of the approved Certificate of Completion to the local retail water purveyor and the property owner or his/her designee.

B. The City will:

- (1) Receive the signed Certificate of Completion from the project applicant;
- (2) Conduct a field inspection of the project;
- (3) Approve the Certificate of Completion;
- (4) Issue a Certificate of Occupancy, or equivalent, to the project applicant.

8.50.053 Waivers and Variances

The Director of Public Works may administratively waive or modify one or more requirements of the ordinance when unusual difficulties make their strict application impossible or impracticable, and upon determination that the waiver or variance is consistent with the purpose and intent of this Chapter.

8.50.054 Landscape Documentation Package

The Landscape Documentation Package shall include those documents contained within the current City of Lancaster Landscape and Irrigation Design Standards.

8.50.055 Soil Management Plan

A soil management plan that addresses the soil attributes of the project site shall include a laboratory soil analysis and an on-site assessment with a statement of recommendations by a qualified soil specialist. A soil management plan meeting the following criteria shall be submitted as part of the Landscape Documentation Package:

- A. A laboratory soil analysis of soil samples from the project site, prior to installation, that evaluates physical and chemical properties shall be required. At a minimum, the soil analysis report shall include:
 - (1) Soil texture (percent clay, silt, sand), indicating the percentage of organic matter;
 - (2) Approximate soil infiltration rate (either measured or derived from the soil texture infiltration rate tables). A range of infiltration rates shall be noted where appropriate;
 - (3) PH;
 - (4) Total soluble salts;
 - (5) Other soil physical or chemical properties relevant to improving water use efficiency and maintaining plant health (e.g., conductivity, nitrogen, phosphorus, potassium, calcium, magnesium, sodium, sulfur, etc.);
- B. A laboratory soil analysis may be excluded if a qualified soil specialist or scientist provides a certified statement addressing reasons for not completing such a soil analysis;
- C. Prior to installation, an on-site soil assessment by a qualified soil specialist that identifies soil attributes or conditions that may minimize water use efficiency or limit plant growth shall be required. The on-site soil assessment shall:

- (1) Identify planting or turf areas that may need amendment;
 - (2) Provide a statement of recommendations to correct or improve soil conditions (i.e., applying organic compost as a soil amendment in planting and turf areas);
 - (3) Conduct a further analysis of soil conditions (i.e., soil profile, hardpan, bulk density, soil toxicity, salinity, etc.), where applicable;
- D. A project applicant shall implement the recommendations from the on-site soil assessment and apply any relevant information from the on-site soil assessment to the design plans.

8.50.056 Landscape Design Plan

For the efficient use of water, a landscape shall be carefully designed and planned for the intended function of the project. A landscape design plan meeting the following design criteria and specifications and the City of Lancaster Landscape and Irrigation Design Standards shall be submitted as part of the Landscape Documentation Package.

A. Criteria

(1) Plant Material

- a. Plant material shall be selected from the City of Lancaster approved plant list or other approved source for the landscape, providing the Estimated Applied Water Use recommended for the project site does not exceed the Maximum Applied Water Allowance.
- b. A landscape design plan for projects in fire-prone areas shall address fire safety and prevention. A defensible space or zone around a building or structure is required per California Public Resources Code 4291 (a) and (b). Fire-prone plant materials and mulches are to be avoided.
- c. Invasive species of plants shall be prohibited near parks, buffers, greenbelts, water bodies and open spaces and are generally discouraged for landscape use.
- d. The architectural guidelines of a common interest development, which includes community apartment projects, condominium projects, planned developments and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.

(2) Turf

- a. Turf is prohibited in commercial and industrial development proposals except where approved as a recreational area.
- b. Turf is not to exceed 30% of the landscape areas in residential development proposals.

(3) Water Features

- a. Re-circulating water shall be used for decorative water features.
- b. Where available, recycled water shall be used as the source for decorative water features.
- c. Surface area of a water feature shall be included in the Maximum Applied Water Allowance (MAWA) calculation. The evaporation rate for all water features shall be equivalent to the evapotranspiration rate of a high water use plant.

- d. Pool and spa covers are required.

8.50.057 Irrigation Design Plan

For the efficient use of water, the irrigation system shall be carefully designed and planned for the intended function of the project. The irrigation system and its related components shall be planned and designed to allow for proper installation, management and maintenance. The irrigation system design plan meeting the following design criteria and specifications and the City of Lancaster Landscape and Irrigation Design Standards shall be submitted as part of the Landscape Documentation Package.

A. Criteria

(1) System

- a. Dedicated (separate) landscape water meters shall be installed for all projects where the total landscape area exceeds 5,000 square feet.
- b. Weather-based irrigation controllers, soil moisture based controllers, or other self-adjusting irrigation controllers, shall be required for all irrigation systems. The controller must be able to accommodate all aspects of the landscape and irrigation design plans.
- c. All irrigation systems shall be designed to avoid excessive pressure. Water pressure regulators are required on all landscape projects. Static water pressure, dynamic or operating pressure and flow reading of the water supply shall be measured at the time of day the system will operate. These pressure and flow measurements shall be conducted at the design phase, if available, or prior to installation, if not available at the design phase.
- d. If the static pressure is above or below the required dynamic pressure of the irrigation system, pressure regulators, or booster pumps, other devices shall be installed to meet the required dynamic pressure of the irrigation system.
- e. Sensors (e.g., rain, freeze, wind, etc.), either integral or auxiliary, that suspend irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions.
- f. High-flow check valves, or other technology to interrupt operation in high flow conditions created by irrigation system damage or malfunction, shall be required.
- g. The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.
- h. Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
- i. The design of the irrigation system shall conform to the hydrozones of the landscape design plan.

8.50.058 Grading Design Plan

For the efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff and water waste. A grading design plan meeting the following design criteria and specifications and the City of Lancaster Landscape and Irrigation Design Standards shall be submitted as part of the Landscape Documentation Package.

A. Criteria

- (1) All projects where the total landscape area exceeds 5,000 square feet shall be designed to capture on-property run-off for a 10-year rain event through the use of earth berms, drainage swales, subsurface storage, or other approved methodology. Exceptions maybe granted for design features such as driveways, sidewalks and other features from which it is impractical to capture storm water flow.
- (2) Grading of a project site shall avoid disturbing natural drainage patterns and avoid soil compaction in landscape areas.

8.50.059 Certificate of Completion

- A. The project applicant shall comply with the Certificate of Completion as specified under 8.50.052. See the City of Lancaster Landscape and Irrigation Design Standards for a sample of a Certificate of Completion.
- B. The Certificate shall specifically indicate that:
 - (1) Plants were installed as specified;
 - (2) The irrigation system was installed as designed;
 - (3) An irrigation audit has been performed;
 - (4) Other criteria of this Chapter have been met along with a list of any observed deficiencies.
- C. The following shall be submitted with the Certificate of Completion:
 - (1) Irrigation Schedule, see 8.50.060;
 - (2) Landscape and Irrigation Maintenance Schedule, see Section 8.50.061.3;
 - (3) Landscape Irrigation Audit Schedule, see 8.50.062;
 - (4) Irrigation Audit Report.

8.50.060 Irrigation Scheduling

For the efficient use of water, all irrigation schedules shall be developed, managed and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules meeting the City of Lancaster Landscape and Irrigation Design Standards and the following requirements shall be submitted with the Certificate of Completion:

- A. Irrigation scheduling shall incorporate the use of evapotranspiration data such as those from the California Irrigation Management Information System (CIMIS) weather stations or other validated weather data or soil moisture monitoring systems to apply the appropriate levels of water for different climates. See CIMIS data for Lancaster area in the City of Lancaster Landscape and Irrigation Design Standards; and
- B. Where automated irrigation systems are installed, irrigation shall be scheduled between 10:00 p.m. and 10:00 a.m. between May 1st and October 31st. If allowable hours of irrigation differ from the local retail purveyor, the stricter of the two shall apply. Hand watering of landscape areas is permissible where an automated system is not installed.

8.50.061 Landscape and Irrigation Maintenance Schedule

- A. Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion. Maintenance schedules developed for new landscapes shall clearly indicate irrigation controller timing adjustment and inspection after the landscape establishment period.
- B. A regular maintenance schedule shall include, but not be limited to, routine inspection, adjustment and repair of the irrigation system and its components; conducting water audits; prescribing the amount of water applied per landscaped acre; aerating and dethatching turf areas; replenishing mulch; fertilizing; and pruning and weeding in all landscape areas.
- C. Repair of all irrigation equipment shall be done with the originally specified components or their equivalents.
- D. A project applicant is encouraged to implement sustainable or environmentally friendly practices for overall landscape maintenance.

8.50.062 Irrigation Audits and Audit Schedules

- A. At a minimum, all landscape irrigation audits shall be in accordance with the "Irrigation Association Certified Landscape Irrigation Auditor Training Manual (2004)," the entire document, which is hereby incorporated by reference.
- B. All landscape irrigation audits and audit reports shall be conducted by a certified landscape irrigation auditor.
- C. For new construction and rehabilitated landscape projects installed on or after January 1, 2010, the project applicant shall fulfill the following requirements for landscape irrigation audits:
 - (1) Submit a landscape irrigation audit report with the Certificate of Completion to the City;
 - (2) For landscapes equal to or greater than one acre, submit a schedule of landscape irrigation audits with the Certificate of Completion to the City;
 - (3) Implement the recommendations from the landscape irrigation audit report; and
 - (4) For landscapes equal to or greater than one acre, submit a landscape irrigation audit report every 5 years to the City.
- D. For new construction and rehabilitated landscape projects installed after January 1, 2010, except for home owner-installed, homeowner-provided landscape less than 1,000 square feet, the City or the water purveyor will fulfill the following requirements for landscape irrigation audits:
 - (1) Annually compare customers' maximum applied water allowances, which are found in the Water Efficient Landscape Worksheet submitted as part of the Landscape Documentation Package, to customer's water use and identify customers whose landscapes exceed the maximum applied water allowance for at least one year, to the extent that customer water use information is available to the City: and
 - (2) Annually conduct landscape irrigation audits on a minimum of 20% of the total customer landscapes identified in the paragraph above (customers whose landscapes exceed the maximum applied water allowance).
 - a. The City will obtain permission from the project applicant to access the property for the purposes of conducting a landscape irrigation audit.

- b. The City's cost of conducting the landscape irrigation audit shall be paid by the project applicant.
- c. The City of Lancaster shall make a good faith effort to obtain necessary water use information from the local retail water purveyor.

8.50.063 Irrigation Efficiency

For the purpose of determining the maximum applied water allowance, an irrigation efficiency is assumed. Irrigation systems shall be designed, maintained and managed to meet or exceed the design irrigation efficiency.

8.50.064 Recycled Water

- A. The installation of recycled water irrigation systems (i.e., dual distribution systems) shall be required to allow for the current and future use of recycled water, unless a written exemption has been granted as described in this Section.
- B. Irrigation systems shall make use of recycled water unless a written exemption has been granted by the City, stating that recycled water meeting all public health codes and standards is not available and will not be available in the foreseeable future.
- C. All recycled water irrigation systems shall be designed and operated in accordance with all City and State codes.
- D. If the irrigation water (recycled water or blended water) has electrical conductivity equal to or greater than 3 deci-Seimens per meter (dS/m) or 3 milli-mhos per centimeter (mmh/cm) or 2000 mg per liter total dissolved solids (TDS), a leaching fraction of up to 10% may be included in the MAWA calculation. The leaching fraction shall not exceed 10% of MAWA.
- E. For more information on recycled water, see the University of California Agriculture & Natural Resources "Landscape Plant Salt Tolerance Selection guide for Recycled Water Irrigation (2005)," the entire document, which is hereby incorporated by reference.
- F. Recycled water used in landscaping and water features shall be exempted from water budget calculation requirements.

8.50.065 Public Education

- A. Publications
The City of Lancaster will provide information to owners of new, single-family residential homes regarding the design, installation, management and maintenance of water efficient landscapes.
- B. Model Homes
 - (1) All model homes shall be landscaped to demonstrate, via signs and information, the principles of water efficient landscapes described in this ordinance.
 - (2) Signs shall be used to identify the model as an example of a water efficient landscape and featuring elements such as hydrozones, water efficient irrigation equipment and other elements, which contribute to the overall water efficient theme.
 - (3) Information shall be provided to prospective homeowners about designing, installing and maintaining water efficient landscapes. The information provided should also include potential cost savings associated with water conservation techniques.

8.50.070 Provisions for Existing Landscapes - Landscape Irrigation Audits

For existing landscapes installed before January 1, 2010, the following shall apply:

- A. At a minimum, all landscape irrigation audits shall be in accordance with the "Irrigation Association Certified Landscape Irrigation Auditor Training Manual (2004)".
- B. All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.
- C. For existing landscapes equal to or greater than one acre (43,560 square feet), the property owner or his/her designee of the landscape project shall fulfill the following requirements for landscape irrigation audits:
 - (1) Submit a landscape irrigation audit report every 5 years to the City; and
 - (2) Implement the water management and maintenance recommendations from the landscape irrigation audit report.
- D. For existing landscapes equal to or greater than 1,000 square feet, the City will fulfill the following irrigation audit requirements:
 - (1) Annually survey and compare customer's landscape water use to local reference evapotranspiration and identify customers whose landscapes exceed 80% of local reference evapotranspiration for at least one year, to the extent that customer water use information is available to the City; and
 - (2) Annually conduct landscape irrigation audits on a minimum of 20% of the total customer landscapes identified in the paragraph above.
 - a. The City will obtain permission from the property owner or his/her designee to access the property for the purposes of conducting a landscape irrigation audit.
 - b. The property owner or his/her designee shall pay the City cost of conducting the landscape irrigation audit.
 - c. The City shall make a good faith effort to obtain necessary water use information from the local retail water purveyor.

8.50.080 Effective Precipitation

The City does not have enough reliable annual precipitation to include in water budget formulae; consequently this portion of the formula has been eliminated.

8.50.081 Water Waste Prevention

Water waste resulting from inefficient landscape irrigation, such as runoff, low head drainage, overspray, etc., is prohibited. Similar conditions where water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures are also prohibited. Penalties for violation of these prohibitions shall be subject to City policy and procedure.

8.50.082 Penalties for Project Applicants

The City may administer penalties to the project applicant for non-compliance with the ordinance, including, but not limited to:

- A. Deny Certificate of Occupancy or equivalent until the Certificate of Completion has been submitted, reviewed and approved by the City;
- B. Issue warning letters or citations;
- C. Impose and collect monetary penalties or fines;

- D. Administer an appeals process or equivalent;
- E. Terminate water service.

Section 2. **Title 8, Chapter 8.30, RESIDENTIAL LANDSCAPING INSTALLATION AND MAINTENANCE** is hereby amended to read as follows:

Section 8.30.040 Landscape requirements for new residential development, paragraphs A and B, are replaced with the following:

A. Multiple Family Residential Development. All multiple family residential developments shall be landscaped in accordance with the requirements of Chapter 8.50, Landscaping Installation and Maintenance, Title 8, HEALTH AND SAFETY of the Lancaster Municipal Code. Such landscaping shall include installation of an irrigation system and an appropriate combination of plant materials and hardscape.

B. Single Family Residential Development. Landscaping and irrigation systems shall be installed on all portions of single family residential lots not used for buildings, vehicle access, or parking.

The first paragraph of **Section 8.30.050** Landscape requirements for existing residential development is revised as follows:

All residential development for which a building permit was issued prior to the effective date of this chapter shall comply with the requirements of Chapter 8.50, Landscaping Installation and Maintenance, Title 8, HEALTH AND SAFETY of the Lancaster Municipal Code and the following requirements within six months of the effective date of this chapter:

Section 3. **Title 15, Chapter 15.48, SPECIFICATIONS FOR LANDSCAPE DEVELOPMENT**, is hereby deleted in its entirety.

Section 4. **Title 17, Chapter 17.08, RESIDENTIAL ZONES** is hereby amended as follows:

Section 17.08.100 Property development regulations, Paragraph B. Residential Zones, Subparagraph 3 Yard Requirements, b. HDR and MDR Zones, table footnote a. is revised as follows:

- a. The front, side and rear yards of all uses shall be landscaped and maintained as required in Title 8, Chapter 8.50, Landscaping Installation and Maintenance, Title 8, Chapter 8.30, Residential Landscaping Installation and Maintenance and Title 15, Chapter 15.48, Specifications for Landscape Development of the Lancaster Municipal Code.

Section 17.08.100 Property development regulations, Paragraph B. Residential Zones, Subparagraph 4, Open Space, d. Landscaped Areas is revised as follows:

d. Landscaped Areas. Of the required open space, a minimum of 50%, shall be landscaped. Consideration shall be given when designing the landscaped areas to the function of the area. Trees and drought-tolerant plants perform many essential functions for the community such as beauty, shading, wind protection, screening, noise buffering and air filtering. All landscaped areas shall conform to Title 8, Chapter 8.50, Landscaping Installation and Maintenance, Title 8, Chapter 8.30, Residential Landscaping Installation and Maintenance and Title 15, Chapter 15.48, Specifications for Landscape Development of the Lancaster Municipal Code.

Section 17.08.150 Property development regulations, Paragraph I. Landscaping for Multiple-Family or Other Projects., Paragraphs 3 and 4 are revised as follows:

3. Plant material shall be selected for interest in its structure, texture, color, ultimate growth and water efficiency. Plants that are native or climate adaptive to the high desert area of Lancaster and/or others that will be hardy, harmonious with project design and of good appearance shall be used. Drought-resistant varieties of plants shall be used in accordance with Title 8, Chapter 8.50, Landscaping Installation and Maintenance, Title 8, Chapter 8.30, Residential Landscaping Installation and Maintenance, and Title 15, Chapter 15.48, Specifications for Landscape Development of the Lancaster Municipal Code.

4. Landscaped areas shall be irrigated by an automatic system with separate stations for each hydrozone. The irrigation system shall be designed and equipped to incorporate water conservation techniques, such as drip systems, moisture sensors and anti-drain valves. Sprinkler systems shall be designed to prevent water from falling onto impervious surfaces. The system shall comply with Title 8, Chapter 8.50, Landscaping Installation and Maintenance; Title 8, Chapter 8.30, Residential Landscaping Installation and Maintenance of the Lancaster Municipal Code.

Section 17.08.290 Landscaping and screening is revised as follows:

All yards and setbacks required for mobile home parks shall be landscaped and shall appear similar to conventional residential developments. A decorative masonry wall 6 feet in height shall screen the mobile home park and shall be located 20 feet from the back of the sidewalk on a street frontage and on the property line elsewhere. The landscaping shall be permanently maintained and shall consist predominantly of drought-resistant trees and vegetation in accordance with Title 8, Chapter 8.50, Landscaping Installation and Maintenance; and Title 8, Chapter 8.30, Residential Landscaping Installation and Maintenance of the Lancaster Municipal Code.

Section 5. **Title 17, Chapter 17.12, COMMERCIAL ZONES** is hereby amended to read as follows:

Section 17.12.130 Property development regulations. Paragraph B. C Zone, Subparagraph 2. Yard Requirements, b) 4) is revised as follows:

4) Front and street side yards of properties developed after the adoption of this section shall be landscaped and maintained in accordance with Title 8, Chapter 8.50, Landscaping Installation and Maintenance of the Lancaster Municipal Code for a minimum depth of 10 feet measured from the back of the sidewalk. This requirement may be increased by the director where he finds it to be necessary to make the proposed development compatible with existing development in the vicinity of the site. Landscaping and irrigation plans shall be submitted to the director for his approval. Such plans must be approved prior to the issuance of any building permit for the site. Such landscaping and irrigation systems shall have been installed in accordance with the approved plans and verified prior to final inspection approval. The director's determinations on these items may be appealed in accordance with Section 17.36.030. Yards required by this zone are also subject to the general provisions and exceptions contained in Section 17.28.030 which shall apply as specified.

Section 17.12.230 Paragraph A. General requirements applicable to all development, subparagraph 10. Landscaping, d and e. are revised as follows:

d. Plant material shall be selected for interest in its structure, texture, color, ultimate growth and water efficiency. Plants that are native or climate adaptive to the high desert area of Lancaster and/or others that will be hardy, harmonious with project design, and of good appearance shall be used. Drought-resistant varieties of plants shall be used wherever feasible. Turf shall not be permitted except for recreational areas. Drought-resistant varieties of plants shall be used in accordance with Title 8, Chapter 8.50 Landscaping Installation and Maintenance of the Lancaster Municipal Code.

e. Landscaped areas shall be irrigated by an automatic system with separate stations for each hydrozone. The irrigation system shall be designed and equipped to incorporate water conservation techniques such as drip systems, moisture sensors and anti-drain valves. Sprinkler systems shall be designed to prevent water from falling onto impervious surfaces. The system shall comply with Title 8, Chapter 8.50, Landscaping Installation and Maintenance of the Lancaster Municipal Code.

Section 17.12.460 Design requirements, Paragraph A. General requirements applicable to all development, subparagraph 4. Landscaping, c. is revised as follows:

c. Plant material shall be selected for interest in its structure, texture, color, ultimate growth and water efficiency. Plants that are indigenous to the area and others that will be hardy, harmonious with project design, and of good appearance, shall be used. Drought-resistant varieties of plants shall be used in accordance with Title 8, Chapter 8.50, Landscaping Installation and Maintenance of the Lancaster Municipal Code.

Section 17.12.800 Property development regulations. Paragraph B. OP Zone, subparagraph 5, is revised as follows:

5. Landscaping. Plant materials used in landscaping shall include drought-tolerant species and the landscaping shall be designed to minimize water usage and prevent runoff. No landscaping shall be placed in a manner which shades or would ultimately shade any existing solar energy system from the sun on a contiguous lot. All landscaped areas shall conform to Title 8, Chapter 8.50, Landscaping Installation and Maintenance of the Lancaster Municipal Code. All landscaping shall be completed prior to occupancy by any use and shall be maintained as defined in this title.

Section 17.12.890 Design and performance standards. Paragraph A. General requirements applicable to all development, subparagraph 8. Landscaping, c & d. are revised as follows:

c. Plant material shall be selected for interest in its structure, texture, color, ultimate growth and water efficiency. Plants that are native or climate adaptive to the high desert area of Lancaster and/or others that will be hardy, harmonious with project design, and of good appearance, shall be used. Turf shall not be permitted except for recreational areas. Drought-resistant varieties of plants shall be used in accordance with Title 8, Chapter 8.50, Landscaping Installation and Maintenance of the Lancaster Municipal Code.

d. Landscaped areas shall be irrigated by an automatic system with separate stations for each hydrozone. The irrigation system shall be designed and equipped to incorporate water conservation techniques such as drip systems, moisture sensors and anti-drain valves. Sprinkler systems shall be designed to prevent water from falling onto impervious surfaces. The system shall comply with Title 8, Chapter 8.50, Landscaping Installation and Maintenance of the Lancaster Municipal Code.

Section 17.12.1030 Design and performance standards. Paragraph L. Landscape Standards and Guidelines, subparagraph 2. General Standards, d, is revised as follows:

d. Soil preparation, staking requirements, sprinkler and irrigation systems and water usage requirements shall meet the standards set forth in Title 8, Chapter 8.50, Landscaping Installation and Maintenance of the Lancaster Municipal Code.

Section 17.12.1030 Design and performance standards. Paragraph L. Landscape Standards and Guidelines, subparagraph 3. Amount and Size Standards, a, is revised as follows:

a. Turf areas are not permitted in commercial zones except for recreational areas.

Section 6. **Title 17, Chapter 17.16, INDUSTRIAL ZONES** is hereby amended to read as follows:

Section 17.16.220 Design and performance standards, paragraph A, General requirements applicable to all development, subparagraph 8, Landscaping, c and d, are revised as follows:

c. Plant material shall be selected for interest in its structure, texture, color, ultimate growth and water efficiency. Plants that are native or climate adaptive to the high desert area of Lancaster and/or others that will be hardy, harmonious with project design, and of good appearance, shall be used. Drought-resistant varieties of plants shall be used wherever feasible. Turf shall not be permitted. Drought-resistant varieties of plants shall be used in accordance with Title 8, Chapter 8.50, Landscaping Installation and Maintenance of the Lancaster Municipal Code.

d. Landscaped areas shall be irrigated by an automatic system with separate stations for each hydrozone. The irrigation system shall be designed and equipped to incorporate water conservation techniques such as drip systems, moisture sensors and anti-drain valves. Sprinkler systems shall be designed to prevent water from falling onto impervious surfaces. The system shall comply with Title 8, Chapter 8.50, Landscaping Installation and Maintenance of the Lancaster Municipal Code.

Section 7. The City Clerk shall certify to the passage of this Ordinance and shall cause this Ordinance to be published or posted as required by law.

I, Geri K. Bryan, CMC, City Clerk of the City of Lancaster, do hereby certify that the foregoing ordinance was regularly introduced and placed upon its first reading on the 14th day of October, 2008 and placed upon its second reading and adoption at a regular meeting of the City Council on the 28th day of October, 2008 by the following vote:


AYES: Council Members: Mann, Marquez, Sileo, Vice Mayor Smith

NOES: None

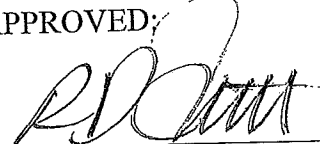
ABSTAIN: None

ABSENT: Mayor Parris

ATTEST:


GERI K. BRYAN, CMC
City Clerk
City of Lancaster

APPROVED:



RONALD D. SMITH
Vice Mayor
City of Lancaster

STATE OF CALIFORNIA }
COUNTY OF LOS ANGELES } ss
CITY OF LANCASTER }

CERTIFICATION OF ORDINANCE
CITY COUNCIL

I, _____, _____ City of Lancaster,
California, do hereby certify that this is a true and correct copy of the original Ordinance No.
907, for which the original is on file in my office.

WITNESS MY HAND AND THE SEAL OF THE CITY OF LANCASTER, on this _____
day of _____, _____.

(seal)

RESOLUTION NO. 08-85

A RESOLUTION OF THE CITY COUNCIL OF THE CITY
OF LANCASTER, CALIFORNIA, ESTABLISHING
LANDSCAPE AND IRRIGATION DESIGN STANDARDS

WHEREAS, the California State Legislature has enacted requirements for the Department of Water Resources to update the Water Conservation in Landscaping Act (AB 1881), requiring cities and counties to enact an ordinance pertaining to water conservation; and

WHEREAS, pursuant to Lancaster's Water Efficient Landscape Ordinance, Ordinance No. 907, the City must adopt Landscape and Irrigation Design Standards (Exhibit "A" on file with City Clerk); and

WHEREAS, this City Council has examined and considered the diagrams, assessments, and the proceedings prior thereto; and

WHEREAS, the City of Lancaster has participated in a coalition of Antelope Valley water purveyors, landscape architects, city officials, builders, and representatives from the Building Industry Association in the drafting of the proposed Landscape and Irrigation Design Standards; and

WHEREAS, the City Council finds that adopting such standards will enable City staff to review proposed projects with special attention to design and installation of water conserving plant material and irrigation systems.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED by the City Council of the City of Lancaster, State of California, that:

Section 1. The Landscape and Irrigation Design Standards are established and will become effective on the date of adoption of Ordinance No. 907.

PASSED, APPROVED, and ADOPTED this 14th day of October 2008, by the following vote:

AYES: Council Members: Mann, Marquez, Sileo, Vice Mayor Smith, Mayor Parris

NOES: None

ABSTAIN: None

ABSENT: None

ATTEST:

APPROVED:

Geri K. Bryan
GERI K. BRYAN, CMC
City Clerk
City of Lancaster

R. Rex Parris
R. REX PARRIS
Mayor
City of Lancaster

STATE OF CALIFORNIA }
COUNTY OF LOS ANGELES }ss
CITY OF LANCASTER }

CERTIFICATION OF RESOLUTION
CITY COUNCIL

I, _____, _____ City of Lancaster, CA,
do hereby certify that this is a true and correct copy of the original Resolution No. 08-85, for
which the original is on file in my office.

WITNESS MY HAND AND THE SEAL OF THE CITY OF LANCASTER, on this
_____ day of _____, _____.

(seal)

EXHIBIT "A"

*Reso No. 08-85
10/14/08*

CITY OF LANCASTER

**LANDSCAPE AND IRRIGATION
DESIGN STANDARDS**

Public Works Department

October 2008

LANDSCAPE AND IRRIGATION DESIGN STANDARDS AMENDMENTS

The following amendments have been incorporated into this October 2008 posting of the design standards.

Amendment	Date Approved by Planning Commission	Resolution Number	Date Adopted by City Council	Resolution Number
Landscape And Irrigation Design Standards adopted				

**CITY OF LANCASTER
LANDSCAPE AND IRRIGATION DESIGN STANDARDS**

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INTRODUCTION AND DESIGN PHILOSOPHY

The City of Lancaster (City) desires to have landscape development in an attractive, water efficient, and high quality manner. These landscape and irrigation design standards will enable designers and developers to clearly understand the City's intent with respect to landscape design and management.

It is the intent of these landscape and irrigation design standards not only to establish an acceptable level of quality for approval, but to achieve harmony with, and bring continuity to, the existing developed areas in the City.

To permit and encourage a pleasing aesthetic interaction with the environment, a landscape design should provide a variety of shapes, textures, and colors as well as provide practical applications such as trees to produce shade and block high winds.

A well-founded design should:

- Integrate with, complement, and improve the existing permanent landscape.
- Relate to and complement the architecture of structures on the site.
- Mitigate erosion.
- Provide for screening of unsightly areas and noise, as well as provide for wind and sun control.
- Minimize the use of water by stressing water conservation.
- Provide for a variety of design elements.
- Reflect the needs and expectations of those persons affected by the landscape.
- Utilize plant material native to, or conducive to, the local environment.

The City is very concerned about proper water use management. The City requires design efforts to be conscious of water saving irrigation systems, as well as low water use plant materials.

These design standards shall apply to all single family, multi-family, commercial, institutional, and industrial projects containing landscaping.

For each applicable project a Landscape Documentation Package will be submitted to the City for approval.

These Landscape and Irrigation Design Standards will be presented in the form of a Resolution to the City Council of the City and may be updated as needed by the City departments.

DEFINITION OF TERMS

For the purpose of carrying out the intent of these design standards, the words, phrases, and terms included herein have the meaning ascribed hereinbelow.

“Anti-drain Valve” means a valve located under a sprinkler head to hold water in the system to prevent drainage from sprinkler heads when the system is off.

“Application Rate” means the depth of water applied to a given area, measured in inches per minute, inches per hour, or gallons per hour.

“Applied Water” means the quantity of water supplied by the irrigation system to the landscape.

“Backflow Prevention Device” means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

“Backfill” means soil which is replaced in a hole after excavation and placement of irrigation lines or plant materials.

“Conversion Factor” (.62) means the number that converts the maximum applied water allowance from acre-inches per acre per year to gallons per square foot per year.

“Certificate of Completion” means the document required under by these design standards.

“Certified landscape irrigation Auditor” means a person certified to perform landscape irrigation audits by a professional trade organization or other educational organization.

“Certified Irrigation Designer” means a person certified to design irrigation systems by a professional trade organization or other educational organization.

“Check valve” means a “one-way” valve that prevents water from flowing backward though it. Spring loaded check valves are sometimes installed inside or at the inlet of sprinkler heads. The check prevents low head drainage.

“Common Interest Developments” means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1353.8.

“Controller” means an automatic timing device used to remotely control valves or heads to set an irrigation schedule. A weather-based controller is a controller that uses evapotranspiration or weather data. A self-adjusting irrigation controller is a controller that uses sensor data (i.e., soil moisture sensor).

“Development Proposal” means an application for approval of a specific plan, subdivision, conditional use permit, site plan review, tentative tract map, parcel map or any other discretionary development permit or entitlement application which has been filed with and is pending consideration by the City.

“Drip irrigation” means any non-spray low volume irrigation system utilizing emission devices with a flow rate equal to or less than two (2) gallons per hour.

“Drought Tolerant Plants” means plants from California and other dry areas that can survive on very little water, such as those which naturally grow in the high desert regions of southern California in normal rainfall years.

“Ecological Restoration Project” means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

“Effective Precipitation” or “Usable Rainfall” means the portion of total precipitation that is used by the plants.

“Emitter” means a drip irrigation emission device that delivers water slowly from the system to the soil measured as gallons per hour.

“Erosion” means the transportation of soil particles, or mass movement of soil (mass wasting) by water, wind, or mechanical means.

“Engineer of Work” refers to the responsible designing professional of the respective project.

“Established Landscape” means the point at which plants in the landscape have developed significant roots growth into the site. Typically, most plants are established after one or two years of growth.

“Establishment period of the plants” means the first year after installing the plant in the landscape, or the first two years if irrigation will be terminated after establishment.

“Estimated Applied Water Use” means the portion of the estimated total water use that is derived from applied water, as described in Appendix C, Section C4 .

“Estimated Total Water Use” means the annual total amount of estimated water needed to keep the plants in the landscaped area healthy. It is based upon such factors as the local evapotranspiration rate, the size of the landscaped area, the types of plants, and the efficiency of the irrigation system, as described in Appendix C, Section C3.

“ET Adjustment Factor” means a factor of 0.7, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. For purposes of the ET adjustment factor, the average irrigation efficiency is 0.71. Therefore, the ET adjustment factor is determined by the following formula $(0.7) = (0.5/0.71)$.

“Evapotranspiration Rate” means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specific time.

“Flow Rate” means the rate at which water flows through pipes, valves, or emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.

“Hardscape” means any durable surface material (pervious and non-pervious). Hardscape shall be considered in the determination of the MAWA and storm water runoff flows.

“Hydrozone” means a portion of the landscaped area having plants with similar water needs that are served by a valve or set of valves with the same schedule. A hydrozone may be irrigated or non-irrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a non-irrigated hydrozone.

“Infiltration Rate” means the rate of water entry into the soil expressed as a depth of water per unit of time (i.e., inches per hour).

“Irrigation Efficiency” means the measurement of the amount of water beneficially used, divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum irrigation efficiency for purposes of this ordinance is 0.71.

“Landscape Documentation Package” means the documents required under Title 8, Chapter 50 of the Lancaster Municipal Code (Lancaster Water Efficient Landscape Ordinance) and these design standards.

“Landscape Area” means all of the irrigated planting and turf areas, water features, and up to 10% of the square footage of pervious non-irrigated planting areas in a landscape design plan subject to the maximum applied water allowance (MAWA) calculation. The 10% of non-irrigated planting area shall be added to the low water use Hydrozone area, used in the Landscape Documentation Package. The following is not included in the landscaped area: footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscape, and other non-irrigated areas designated for non-development (i.e., open spaces). Excessive use of impervious areas are discouraged as it will increase storm water runoff. Designated recreation areas and areas permanently and solely dedicated to edible plants, such as orchards and vegetable gardens, are subject to the MAWA with an ET adjustment factor not to exceed 1.0.

“Landscape Architect” means a person who holds a license to practice landscape architecture in the State under the authority of Government Code Section 5615 (Landscape Architects Practice Act).

“Landscape Contractor” means a person licensed (i.e., C-27 license) by the State to construct, maintain, repair, install, or subcontract the development of landscape systems and facilities per Business and Professions Code, Section 7058 and 7059.

“Landscape Irrigation Audit” means a process to perform site inspections, evaluate irrigation systems, and develop efficient irrigation systems. At a minimum, the audit shall be in accordance with the California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook, the entire document that is hereby incorporated by reference. (See Landscape Irrigation Auditor Handbook, Dept. of Water Resources, Water Conservation Office, 2004)

“Landscape Project” means a project, for the purposes of this ordinance, meeting the requirements under 8.50.040 of the Lancaster Municipal Code.

“Landscaping” means a combination of trees, shrubs, perennial ground covers, and artifacts, arranged in such a manner as to effect a design that follows the intent of this document.

“Lateral Line” means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

“Local Agency” when utilized within this document means the City of Lancaster.

“Low Volume Irrigation” means any irrigation system with a flow rate equal to or less than 0.75 inches per hour, including drip irrigation, subsurface drip, micro-sprinklers and similar irrigation types.

“Low Water Use Plant Material” means trees, shrubs, and ground covers that survive with a limited amount of supplemental water, as recommended by the City’s Landscape and Irrigation Design Standards, or as identified in the most recent edition of the following publication: Sunset Western Garden Book, Sunset Books, Lane Publishing Co., Menlo Park, California.

“Main Line” means the pressurized pipeline that delivers water from the water source to the valve or outlet.

“Maximum Applied Water Allowance” means, for design purposes, the upper limit of annual applied water for the established landscaped area as specified by these design standards. It is based upon the area’s reference evapotranspiration, the ET adjustment factor, and the size of the landscaped area. The estimated applied water use shall not exceed the MAWA.

“Microclimate” means the climate of a small, specific area that may contrast with the climate of the overall landscape area due to wind, sun exposure, plant density, and proximity to reflective surfaces.

“Mined Land Reclamation Projects” means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.

“Mulch” means any organic material such as leaves, bark, and straw or inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation and suppressing weeds.

“Operating Pressure” means the pressure at which an irrigation system is designed by the manufacturer to operate.

“Overhead Sprinkler Irrigation Systems” means systems that deliver water through the air (i.e., spray heads, rotors, etc.).

“Overspray” means the water that is delivered beyond the target area, wetting pavements, walks, structures, or other non-targeted areas.

“Parkway” means that area of a public street that is between the curb and sidewalk or between the sidewalk and the property line of the adjacent property owner which is used for landscape purposes.

“Plant Factor” means a factor that, in combination with irrigation efficiency, when multiplied by reference evapotranspiration, estimates the amount of water used by plants. For purposes of this document, the plant factor of low water use plants ranges from 0.1 to 0.3; the plant factor of moderate water use plants ranges from 0.4 to 0.6; and the plant factor of high water use plants ranges from 0.7 to 1.0.

“Precipitation Rate” means the rate of application of water measured in inches per hour.

“Project Applicant” means the individual or entity submitting a Landscape Documentation Package required under Title 8, Chapter 50 of the Lancaster Municipal Code (Ordinance 892 - Prohibition of Wasting Water and Ordinance 893 – Water Efficient Landscape) to request a permit, plan check, or design review from the City. A project applicant may be the property owner or his/her designee.

“Rain Sensor” or “Rain Sensing Shutoff Device” means a component that automatically suspends the irrigation event when it rains.

“Record Drawing” or “As-Builts” refers to a set of reproducible drawings which show significant changes in the work made during construction. Drawings are usually based on drawings that are marked up in the field and furnished by the contractor.

“Recreational Area” refers to portions of parks, playgrounds, sports fields, golf course, or schoolyards in public and private projects where turf provides a playing surface or serves other high use recreational purposes.

“Recycled Water, Reclaimed Water, or Treated Sewage Effluent Water” means treated or recycled waste water of a quality suitable for nonpotable uses such as landscape irrigation and water features. This water is not intended for human consumption.

“Reference Evapotranspiration” or “ETo” means a standard measurement of environmental parameters that affect the water use of plants. ETo is given in inches per day, month, or year as represented in Appendix A. . Reference evapotranspiration is used as the basis of determining the MAWA so that regional differences in climate can be accommodated.

“Rehabilitated Landscapes” means any re-landscaping project that requires a permit, plan check, or design review and meets the requirements of this document and Title 8, Chapter 50 of the Lancaster Municipal Code (Lancaster Water Efficient Landscape Ordinance).

“Runoff” means water that is not absorbed by the soil or landscape to which it is applied and flows from the landscape area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a slope. Grading and landscape shall be designed to minimize runoff.

“Soil Moisture Sensor or Sensing Device” means a device that measures the amount of water in the soil.

“Soil Texture” means the classification of soil based on its percentage of sand, silt, and clay.

“Sprinkler Head” means a device that delivers water through a nozzle.

“Static Water Pressure” means the pipeline or municipal water supply pressure when water is not flowing.

“Station” means an area served by one valve or by a set of valves that operate simultaneously.

“Swing Joint” means an irrigation component that provides a flexible, leak-free connection between the sprinkler and lateral pipeline to allow movement in any direction and to prevent prevent equipment damage.

“Street Trees” means trees planted in the public right-of-way along city streets for beautification and benefit of the general public.

“Topsoil” means soil within the A-2 horizon of a soil profile that contains organic matter, nutrients, and the micro-organisms necessary for normal plant growth.

“Turf” means a groundcover surface of mowed grass. Annual Bluegrass, Kentucky Blue grass, Perennial Ryegrass, Red Fescue, and Tall Fescue are common cool-season grasses. Bermuda grass, Kikyu grass, Seashore Paspalum, St. Augustine grass, Zoysia grass, and Buffalo grass are common warm-season grasses.

“Valve” means a device used to control the flow of water in the irrigation system. It may also mean all of the sprinklers or emitters in a line controlled by the valve.

“Water Conservation” means the conservation of water resources through proper water use management procedures, design, and maintenance procedures. There are many methods; one popular method is to use low volume irrigation and drought tolerant plant materials.

“Water Conserving Plant Species” means a plant species identified as using less water than other plants in the same water use category.

“Water Efficient Landscape Worksheet” means the document required under Title 8, Chapter 50 of the Lancaster Municipal Code (Lancaster Water Efficient Landscape Ordinance) and found in this document. Section I, Part A, Paragraph C has instructions for filling out the worksheet in Appendix B.

“Water Use Efficiency Statement” means a narrative summary of the water use efficiency practices to be applied in the landscape project.

“Wildlife” means indigenous or naturalized bird, reptile, mammal, fish, or invertebrate life found in the out of doom.

SECTION I – GENERAL REQUIREMENTS FOR ALL LANDSCAPE AND IRRIGATION
PART A – Landscape Documentation Package

A. GENERAL

Owner/Consultant shall submit to the City the required Landscape Documentation Package for all projects where landscaping is required as a part of the project development.

All packages submitted shall be prepared under the direct supervision of a Registered Landscape Architect (State of California), with all drawings bearing his/her signature or, upon approval of the City, a licensed and qualified Landscape Contractor (State of California).

In situations where plans and standards are in conflict, these design standards shall prevail.

Landscaping or the installation of an irrigation system in the City shall not be undertaken until the City has reviewed and approved plan submittals and specifications covering the proposed use of plant materials and irrigation systems in order to determine:

- That proposed plant material will be suitable aesthetically and ecologically for the particular planting situation.
- That proposed planting will meet minimum requirements as set forth by these design standards.
- That proposed irrigation system will be adequate to properly irrigate proposed planting.
- The improvements are permanent and of a nature and quality to assure low maintenance, operations costs, and survivability of the landscape.
- That all landscaping conditions are met.

1. Plan Check Submittals

Submit initial and all subsequent Landscape Documentation Packages to the Public Works Department.

The package shall consist of the following:

- Three (3) sets Landscape Design Plans;
- Three (3) sets Irrigation Design Plans;
- Three (3) sets Grading Design Plans;
- Three (3) sets Water Efficient Landscape Worksheet;
- Three (3) sets Soil Management Plan; and
- Payment of Plan Check fee.

All contract documents are subject to review (plans, general conditions of contract, specifications, etc.).

All plans are to be checked by the Engineer of Work for consistency, accuracy, clarity and conformity with City standard details, drawings, and design criteria before submission for

approval. If during initial review by the City, the Landscape Documentation Package is found to be incomplete, it will be returned unchecked to the Engineer of Work for completion.

2. Subsequent Review Submittal

Submit subsequent corrected Landscape Documentation Package's to the appropriate department.

Upon approval of the Landscape Documentation Package by the City, plans stamped "approved" will be returned to the owner or Engineer of Work.

3. Approved Drawings

All landscape plans must receive City approval prior to approval of the subdivision map by City Council. During the progress of the construction, the Developer's Contractor shall keep a print set copy of signed plans and permit on the job at all times for "As-Built" construction purposes.

Prior to approval for occupancy of any housing unit in a subdivision, the landscape area required for the Landscape Maintenance District shall be installed and accepted by the City.

B. LANDSCAPE AND IRRIGATION PLANS

1. Landscape Documentation Package

The Landscape Documentation Package shall include all of the following elements:

- a) Water Efficient Landscape Worksheet
 - 1) Section A - Project Information and Checklist
 - 2) Section B - Water Use Efficiency Statement
 - 3) Section C - Water Budget Calculation
 - (a) Section C1 - Maximum Applied Water Allowance (MAWA)
 - (b) Section C3 - Estimated Water Use (EWU) for Hydrozones and Estimated Total Water Use (ETWU)
 - 4) Section D - Hydrozone Information
 - (a) Section D1 - Hydrozone Map
 - (b) Section D2 - Hydrozone Table
 - (c) Section D3 - Hydrozone Calculation Summary
- b) Soil Management Plan
 - 1) Soil Analysis Report
 - 2) On-Site Soil Assessment with Recommendations
 - (a) Landscape Design Plan
 - (b) Irrigation Design Plan
 - (c) Grading Design Plan

Forms can be found in Appendix B.

The landscape plans and documents being submitted in response to a City requirement must be for the complete area of the project. For example, if a tentative map requirement calls for a landscape plan submitted for review and approval prior to recordation of the final map, then the plan which is submitted will be for the total area covered within the final map. The landscape plan specifically cannot be submitted piecemeal as in construction or other type phasing. The landscaping can be installed in phases and/or shown in phases on the overall map, but the entire plan must be submitted.

- Standard size sheets shall be used for all plans submitted. All plans shall be of the same size.
- Incomplete designs, details, etc., will not be accepted. Checking will be done only on plans which are complete in all phases of design.
- Number sheets consecutively, "Sheet ___ of ___."
- Scale: 1" = 20' only, unless prior approval by City. Scale shall appear on each sheet.
- "North" arrow shall appear on each sheet. North shall be to top of sheet or to left of sheet.
- Show all match lines clearly and label to provide easy plan reference.
- Vicinity map shall appear on title sheet and identify streets within the project and those directly adjacent to the project.

The following items related to landscape and irrigation development shall appear on all plan sheets:

- Property lines/project limits, street names;
- Building areas, existing and proposed paved areas (including street sidewalks), ponds, and water features;
- All walls and fences (including gates) to be constructed by developers;
- Other appropriate information (utilities, casements, street lights, fire hydrants, etc.) as they relate to landscape development; and
- Designated recreational areas.

Should revisions be made to plans after approval by the City, such revisions shall be approved by the City and noted on the Title Sheet prior to implementation in the field.

2. Cover/Title Sheet

The first sheet shall be a Title Sheet and shall include:

- a) Project location on location map;
- b) Vicinity map showing the following:
 - 1) Street configuration within or adjacent to the tract or project;
 - 2) Nearest arterial highway intersection; and
 - 3) Street names.

- c) North arrow Graphic indication of the following:
 - 1) Match lines, if applicable;
 - 2) Project limits;
 - 3) Sheet index; and
 - 4) Plan indicating portion of project each sheet covers.
- d) Title Block to contain the following:
 - 1) Project title;
 - 2) Subdivision number (tentative tract) and parcel map if drawings reflect only a portion of the complete development. These specific reference numbers shall conform to the approved subdivision map; and
 - 3) Project address and cross streets.
- e) Block for City Approval, including space for signature of approval and date;
- f) Engineer of Work's firm name, address, telephone number, date plans prepared, signature, and seal of Registered Landscape Architect; and
- g) Owner/Developer's name, address, and telephone number.

3. Plan Sheets

- a) Grading
 - 1) Indicate existing and proposed grades with contours and spot elevations.
 - 2) No slope in turf or planter areas shall exceed 5:1 or 20%.
 - 3) Note all grades, flow lines, etc., within public right-of-way.
 - 4) Bike Grades: 10% maximum slope.
 - 5) Handicap Grades: 12 - 1/2% maximum slope.
 - 6) Minimum grade within landscaped areas: 2%.
 - 7) Parkway and common areas where drainage is to be allowed to drain directly onto private property must be accomplished to the satisfaction of the Building and Safety Official. Subsurface drains shall connect into storm drain system or through curb-face.
 - 8) All grading and drainage within public right-ofway shall be subject to approval by the City Building and Safety Official.
- b) Crossings

All pedestrian, equestrian, and bicycle trails which cross arterial or collector streets shall receive appropriate signs, stripes, and pavement markings per State of California Standards and City Traffic Division Standards. Use of stamped concrete, various enriched paving, etc., shall require approval of City Building and Safety Official.
- c) Trails/Walks
 - 1) Equestrian Trails - Owner shall develop all trails including approved fencing or walls in accordance with City requirements applicable to the project.
 - 2) Non-expansive soil - Scarify trail area to a depth of 6", removing rocks, clods, and all undesirable material. Apply approved soil sterilant, fine grade, and compact native soils to the satisfaction of the Building and Safety Official.
 - 3) Bike Trails - In expansive soils, soil tests may be required in areas where bike trails are planned.

- 4) Pedestrian Trails/Walks - Concrete walks shall be constructed per City Building and Safety Official's requirements, with a 4 foot minimum width if parkway is between curb and sidewalk, and a 5 foot maximum width when adjacent to curb. Where tree wells occur within the sidewalk area, a 4 foot width must be maintained between tree well and back of sidewalk.
- d) Fencing/Walls
 - 1) Equestrian - Shall be constructed per City standard details and shall occur on both sides of trails unless approved otherwise by the City Building and Safety Official.
 - 2) Walls - All free standing block masonry perimeter walls shall be a maximum of six feet in height per City standard detail and submitted to Development Engineering Division for approval. Any walls retaining soil shall be subject to permit review by the City.
 - e) Lighting

Wherever possible, lighting designed to accent landscaping, buildings, signs, etc., shall be located on private property. Any lighting systems to be located within the public right-of-way shall be designed by a Registered Electrical Engineer or, upon approval of the City, by a Licensed Electrical Contractor (State of California). Electrical plans shall be submitted with standard landscape plans and shall be subject to approval by the City.
 - f) Street Trees

All trees planted within the dedicated right-of-way shall be of an approved species. Street trees shall conform to the City's Plant List, Appendix G. Plans (two sets) shall be submitted to the City for approval of tree species and quantity to be planted.
 - g) General Design Guidelines
 - 1) Turf grass limitations
 - (a) Single Family Residential - 30% of landscape area maximum, arranged in recreational areas no less than 8 feet wide and areas less than 200 square feet.
 - (b) Commercial & Institutional - NO turf grass allowed, except in approved recreational areas.
 - 2) 80% shrub/ground cover canopy coverage in the planters. If no lawn is used, the plant canopy coverage may be reduced to 50%.
 - 3) A separate water meter for the landscape is required.
 - 4) An approved ETo timer as set forth by these design standards.
 - 5) Street tree(s), as set forth in these design standards.
4. Irrigation
- A. General

The following guideline is to aid in the preparation of landscape irrigation drawings for practices and materials most commonly encountered in the field. However, any special conditions, which the Engineer of Work or the owner finds during the process of design drawings or field investigation not covered by these design standards, shall be submitted

to the City at the earliest possible date. Plan review by City staff may allow for variances where appropriate and justified.

B. Specific

Provide a complete automatic landscape sprinkler irrigation design for all landscaped areas as required as a part of the project development. The irrigation system shall be designed in compliance with the Uniform Plumbing Code most recently adopted by the City, and these design standards.

- 1) The landscape irrigation system shall be designed and operated to prevent runoff and discharge of irrigation water onto roadways, sidewalks, driveways, adjacent properties, and all areas not under City jurisdiction.
- 2) Included on the irrigation drawings shall be a complete and comprehensive irrigation legend, indicating sprinkler head manufacturer and model number. All other equipment and materials utilized in the design shall also be included as a part of the irrigation legend and shall indicate the following: manufacturer, model number, size, and brief description.
- 3) Indicate locations of irrigation water meters, irrigation points of connection, and electrical points of connection for automatic sprinkler controllers, electrical meter, and backflow prevention device on the irrigation drawings.
- 4) The following information shall be provided at each irrigation water meter or irrigation point of connection:
 - (a) Static and residual water pressures;
 - (b) Meter size;
 - (c) Peak irrigation demand in gallons per minute; and
 - (d) Finished grade at backflow unit and highest head served.
- 5) Submit pressure calculations for worst hydraulic condition at each point of connection. Water movement in system shall not-exceed 5' per second.
- 6) All irrigation systems shall be designed to minimize vandalism with special attention at schools, parks, along trails, roads, walks, etc.
- 7) Irrigation water system shall be designated to meet the peak moisture demand of all plant materials used within the design area.
- 8) Provide construction details indicating installation procedures and materials required for the installation of all major components used in the irrigation design in accordance with City standard details, Appendix G.
- 9) Provide check valves and/or anti-drain valves to prevent drainage of irrigation water from sprinkler system due to changes in elevation.
- 10) Provide anti-drain sprinkler heads along all sidewalks and driveways.
- 11) Valves are to provide uniform coverage and G.P.M. from control valves in each system.
 - (a) A shut off valve will be installed to isolate the irrigation system from the household water.
- 12) Slope Condition - Provide separate control valves for sprinkler lines operating systems of slopes. Sprinkler lines shall run parallel (or as close as possible) to contour lines.

- 13) System Pressure - Design systems to the lowest static pressure available, less 20% cushion for further system fluctuations.
 - (a) The maximum potential pressure should be considered in the design and regulators provided if required. If water pressure exceeds 80 psi, install pressure reducing valve(s) to maintain water pressure at no more than 20% higher than system design pressure.
- 14) A reduced pressure backflow preventer will be required.
- 15) Turf sprinklers shall be pop-up. Sprinklers shall be 6" or 12" to minimize safety hazards and vandalism.
- 16) Provide separate valving in landscape areas for:
 - (a) Turf along wall;
 - (b) Turf along walk;
 - (c) Shrub beds along walk (spray);
 - (b) Shrub beds along wall (spray);
 - (d) Tree bubblers;
 - (e) Shade areas that freeze and do not thaw in winter;
 - (f) Slopes;
 - (g) Trees in tree wells;
 - (h) Ground cover in tree wells;
 - (i) Special planters;
 - (j) Drip systems; and
 - (k) Differing hydrozones.

C. Plant Selection and Spacing

1) General

- (a) 80% plant canopy coverage in the planters. The plant list contains appropriate plants and canopy coverage area. If no lawn is used, the plant canopy coverage may be reduced to 50%.
- (b) The square footage value given for each plant is its mature size and will be used to determine the canopy coverage regardless of the size of the plant at the time of planting.
- (c) The City does not endorse or require the use of any or all plants found on the list.
- (d) All ornamental planting of trees/shrubs shall be in accordance with the appropriate City ordinances and conditions.
- (e) In no event shall trees or ornamental landscaping be placed so as to obstruct the vision of drivers and/or pedestrians within public right-of-way. Refer to line-of-sight requirements and details.
- (f) All plant material shall be of an appropriate species to survive in this particular zone and climate. The City will consider alternative plant material on a case by case basis. Final approval of plant material will be at the discretion of the City.
- (g) Plants shall be selected appropriately based upon their adaptability to the climate, geologic, topographical, and hydrological, and soil conditions of the site.

- (h) Plants having similar water use requirements shall be irrigated together on distinct hydrozones specific valves.
 - (i) Planting symbols shall be clearly drawn at and plants labeled by botanical name, common name, container size, spacing, and quantity of each group of plants indicated.
- 2) Street Trees
 - (a) Minimum acceptable size of trees shall be 15 gallon container size.
 - (b) Minimum 30' on center, each side of street as a solitary planting
 - (c) 20' from street light standards.
 - (d) 10' from fire hydrants.
 - (e) 10' from walks or driveways.
 - (f) 5' from water meters.
 - 3) Trees to be planted within dedicated City right-of-way.
 - (a) Trees planted within City right-of-way will be pre-approved by the City from the List of Acceptable Trees for Street Tree Planting.
 - 4) Shrubs
 - (a) Shrubs used for all except ground cover purposes shall be a minimum of five (5) gallon size.
 - 5) Ground Cover
 - (a) Container stock used for ground cover shall be either:
 - (1) One (1) gallon size at two (2) to three (3) feet on center; or
 - (2) Flatted ground cover material shall be planted six (6) inches on center.
 - 6) Turf
 - (a) Sod is required for lawn planting.
 - 7) Graphics/Signage
 - (a) All graphics and signing systems within public right-of-way for housing usage shall be subject to approval by the Planning Director and shall be in accordance with appropriate City zoning ordinances.
 - 8) Zoning Ordinance
 - (a) City Zoning Ordinance - All ornamental landscaping, both on private property and within public right-of-way, shall comply with City Zoning Ordinance in all respects (open space requirements, fencing, front and side yard landscaping, etc.).

C. WATER EFFICIENT LANDSCAPE WORKSHEET

A project applicant shall complete the Water Efficient Landscape Worksheet that contains four (4) sections to meet the criteria and specifications of the ordinance. See sample worksheet in Appendix B.

- 1) Section A shall contain general project information and a checklist of the required elements.
- 2) Section B shall contain the Water Use Efficiency Statement, which is a narrative summary of the water use efficiency practices applied in the landscape project.

- 3) Section C shall contain a water budget calculation for the project. For the calculation of the MAWA, a project applicant shall use the ETo values from Reference ETo Table in Appendix A.

The example calculations below are hypothetical to demonstrate proper uses of the equations and do not represent an existing and/or planned landscape project. The ETo values used in these calculations are historical data for planning purposes only. For actual irrigation scheduling, a project applicant shall use current reference evapotranspiration (ETo data, such as from the California Irrigation Management Information System (CIMIS) or other self-adjusting device (i.e., soil moisture sensor).

Also, monthly time steps are used for demonstration purposes only. A project applicant may use a time step of their choice (daily, weekly, biweekly, etc.) to complete these calculations.

1. Section C1 Maximum Applied Water Allowance (MAWA). The landscape project's Maximum Applied Water Allowance shall be calculated using this equation:

$$\text{MAWA} = (\text{ETo}) (0.7) (\text{LA}) (0.62)$$

Where:

- MAWA = Maximum Applied Water Allowance (gallons per year)
- ETo = Reference Evapotranspiration Appendix A (inches per year)
- 0.7 = ET Adjustment Factor
- LA = Landscaped Area (square feet)
- 0.62 = Conversion factor (to gallons per square foot)

- a. Example MAWA calculation: A hypothetical landscape project in Lancaster, California with an irrigated landscape area of 3,000 square feet. To calculate MAWA, the annual ETo value for Lancaster is 71.0 inches as listed in the Reference Evapotranspiration Table in Appendix A

$$\begin{aligned} \text{MAWA} &= (\text{ETo}) (0.7) (\text{LA}) (0.62) \\ \text{MAWA} &= (71.0 \text{ inches}) (0.7) (3,000 \text{ square feet}) (0.62) \\ &= 92,442 \text{ gallons per year} \end{aligned}$$

$$\begin{aligned} &\text{To convert from gallons per year to hundred-cubic-feet per year} \\ &= 92,442 / 748 = 124 \text{ hundred-cubic-feet per year} \\ &\quad (100 \text{ cubic feet} = 748 \text{ gallons}) \end{aligned}$$

2. Section C2 Estimated amount of water expected from Effective Precipitation (Eppt.). The City's annual precipitation is not significant enough to count for this portion of the equation.

3. Section C3 Estimated Water Use (EWU) for a hydrozone and Estimated Total Water use (ETWU). The landscape project's EWU for each hydrozone is calculated using the following equation:

$$\frac{(ET_o)(PF)(HA)(0.62)}{EWU = (IE)}$$

Where:

- EWU = Estimated total water use for a hydrozone (gallons)
- ET_o = Reference evapotranspiration Appendix A (inches per month)
- PF = Plant Factor
- HA = Hydrozone area (square feet)
- 0.62 = Conversion Factor
- IE = Irrigation efficiency

- a. Example EWU calculations for three (3) hydrozones; the hypothetical Landscape project in Lancaster, California from the previous section. The following assumptions are made for the landscape: there are three hydrozones – one each for high, moderate, and low water using plants; each hydrozone has the same irrigation type; and soil characteristics and slopes are uniform over the total landscape area.

Hydrozone 1 – High water use plant. The following additional assumptions are made for the high water using plant; landscape coefficient/plant factor is 0.7, landscape area is 1,000 sq. ft., and IE is 0.65.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ET _o	2.1	3.0	4.6	5.9	8.5	9.7	11.0	9.8	7.3	4.6	2.8	1.7	71.0
PWR	1.47	2.1	3.22	4.13	5.95	6.79	7.7	6.86	5.11	3.22	1.96	1.19	49.7
IWR	2.26	3.23	4.95	6.35	9.15	10.45	11.85	10.55	7.86	4.95	3.02	1.83	76.46
Total for Hydrozone 1 (=76.46 X 1,000 sq. ft), inches													76,462

Where:

- ET_o = Reference evapotranspiration Appendix A (inches/monthly)
- PWR = Plant water requirement
= (ET_o) (PF)
- IWR = Irrigation water requirement
= (PWR)/(IE)

Hydrozone 2 – Moderate water use plant. The following assumptions are made: landscape coefficient/plant factor is 0.4; landscape area is 1,000 sq. ft.; and IE is 0.8

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo	2.1	3.0	4.6	5.9	8.5	9.7	11.0	9.8	7.3	4.6	2.8	1.7	71.0
PWR	0.84	1.2	1.84	2.36	3.4	3.88	4.4	3.92	2.92	1.84	1.12	0.68	28.4
IWR	1.05	1.50	2.30	2.95	4.25	4.85	5.50	4.90	3.65	2.30	1.40	0.85	35.50
Total for Hydrozone 2 (=35.50 X 1,000 sq. ft.), inches													35,500

ETo = Reference evapotranspiration Appendix A (inches/monthly)
PWR = Plant water requirement
= (ETo) (PF)
IWR = Irrigation water requirement
= (PWR)/(IE)

Hydrozone 3 – Low water use plant. The following assumptions are made: landscape coefficient/plant factor is 0.2; landscape area is 1,000 sq. ft.; and irrigation efficiency (IE) is 0.8. If the landscape area includes non-irrigated planting area, 10% of the non-irrigated planting area may be added to the low water use plant hydrozone.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo	2.1	3.0	4.6	5.9	8.5	9.7	11.0	9.8	7.3	4.6	2.8	1.7	71.0
PWR	0.42	0.6	0.92	1.18	1.7	1.94	2.2	1.96	1.46	0.92	0.56	0.34	14.2
IWR	0.53	0.75	1.15	1.48	2.13	2.43	2.75	2.45	1.83	1.15	0.70	0.43	17.75
Total for Hydrozone 3 (= 17.75 X 1,000 sq. ft.), inches													17,750

Where:

ETo = Reference evapotranspiration Appendix A (inches/monthly)
PWR = Plant water requirement
= (ETo) (PF)
IWR = Irrigation water requirement
= (PWR)/(IE)

- b. Example calculation ETWU. The ETWU for the landscape is the sum total of estimated water uses for each hydrozone:

$$ETWU = \sum_{i=1}^n (EWU_i)$$

Where:

i = hydrozone number
n = total number of hydrozones

$$\begin{aligned} \text{ETWU} &= 76,462 \text{ inches} + 35,500 \text{ inches} + 17,750 \text{ inches} \\ &= 129,712 \text{ inches per year} \end{aligned}$$

$$\begin{aligned} \text{To convert from inches per year to gallons per year:} \\ &= 129,712 \times 0.62 = 80,421 \text{ gallons per year} \end{aligned}$$

Verify $\text{ETWU} + \text{Eppt}$ is less than MAWA
 $80,421 + 0 < 92,442$
 $\text{ETWU} + \text{Eppt} < \text{MAWA}$, therefore water budget is acceptable.

- c. Recreational areas (see definitions) and areas permanently and solely dedicated to edible plants, such as orchards and vegetable gardens, may require water in addition to the MAWA. A statement shall be included in the landscape design plan and the irrigation schedule designating those portions of the landscape to be used for such purposes and specifying any additional water needed above the MAWA. The total amount of irrigation water allowed for these areas shall not exceed 1.0 of the ETo.
4. Section D shall contain hydrozone information for the landscape project including a hydrozone map, hydrozone table, and hydrozone calculation summary. See sample worksheet in Appendix B.

D. COMPLIANCE WITH LANDSCAPE DOCUMENTATION PACKAGE

Prior to construction, the project applicant shall submit a Landscape Documentation Package to the City that meets all the criteria and specifications of this ordinance.

Upon approval of the Landscape Documentation Package by the City, applicant shall:

1. Receive a permit or approval of the plan check or design review and record the date of the permit, etc. in the Certificate of Completion,
2. Submit a copy of the approved Landscape Documentation Package along with the record drawings, and any other information to the property owner or his/her designee; and
3. Submit a copy of the Water Efficient Landscape Worksheet to the local retail water purveyor.

PART B• IRRIGATION AND LANDSCAPING MATERIALS AND INSTALLATION

A. IRRIGATION - GENERAL

5. Irrigation Schedules

For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules meeting the following requirements shall be submitted with the Certificate of Completion.

- a) Irrigation scheduling shall incorporate the use of evapotranspiration data such as those from the California Irrigation Management Information System (CIMIS) weather stations or other validated weather data or soil moisture monitoring systems to apply the appropriate levels of water for different climates. See CIMIS data for Lancaster area in the City of Lancaster Landscape and Irrigation Design Standards.
- b) Overhead irrigation shall be scheduled between 10:00 p.m. and 10:00 a.m. unless weather conditions are unfavorable. If allowable hours of irrigation differ from the local retail purveyor, the stricter of the two shall apply.
- c) For implementation of the irrigation schedule, particular attention must be paid to the irrigation run times emission device, flow rate, and current ETo, so that applied water meets the EAWU. Total annual applied water shall be less than or equal to MAWA.
- d) Using an appropriate controller, an annual irrigation program with monthly irrigation schedules shall be developed and submitted for each of the following:
 - (1) The plant establishment period;
 - (2) The established landscape; and
 - (3) Temporarily irrigated areas.
- e) Each Irrigation Schedule shall include for each station all that apply:
 - (1) Irrigation interval (days between irrigation);
 - (2) Irrigation run times (hours or minutes per irrigation event to avoid runoff);
 - (3) Number of cycle starts required for each irrigation event to avoid runoff;
 - (4) Amount of applied water scheduled to be applied on a monthly basis;
 - (5) Application rate setting;
 - (6) Root depth setting;
 - (7) Plant type setting;
 - (8) Soil type;
 - (9) Slope factor setting;
 - (10) Shade factor setting; and/or
 - (11) Irrigation uniformity or efficiency setting.

6. Permits and Fees

The Contractor shall obtain and pay for any and all necessary permits and fees as required.

7. Manufacturer's Directions

Manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of articles used furnished directions covering points not shown in the drawings and specifications.

8. Ordinance and Regulations

All local, municipal, state laws, and rules and regulations governing or relating to any portion of irrigation work are hereby incorporated into and made a part of these design standards; and their provisions shall be carried out by the Contractor. Anything contained in these design standards shall not be construed to conflict with any of the above rules and regulations or requirements of the same. However, when these design standards call for or describe materials, workmanship, or construction of a better quality, higher standard, or larger size than is required by the above rules and regulations, the provisions of these design standards and drawings shall take precedence.

9. Explanation of Drawings

Due to the scale of drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of its work and plan its work accordingly, furnishing such fittings, etc., as may be required to meet such conditions. Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting, and architectural features.

10. Contractor Responsibilities

- a) It is the responsibility of the Contractor to familiarize himself with all grade differences, location of walls, and utilities. The Contractor shall repair or replace all items damaged by its work. Contractor shall coordinate its work with other contractors for the location and installation of pipe sleeves and laterals under roadways and paving, etc.
- b) Contractor shall be responsible for locating and staking all sewer, utility, and water main lines prior to beginning work. Contractor shall be responsible for any damage or replacement of said utilities. Any digging in areas where public type utility substructures may exist requires an Underground Service Alert (USA). The alert must be obtained at least forty-eight (48) hours prior to digging. USA's telephone number is (800) 422-4133. This will allow such utilities to mark their facilities to minimize interference and disruption of service.
- c) Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that unknown obstructions, grade differences, or differences in the area dimensions exist that might not have been considered in the engineering. Such obstructions or differences should be brought to the attention of the owner. In the event

this notification is not performed, the Contractor shall assume full responsibility for any revisions necessary.

- d) The intent of the design is to provide adequate water coverage to plant material to insure survival. As part of the scope of work, Contractor shall provide any additional heads, special nozzles, or patterns to achieve proper coverage with a minimum of overspray, at no additional cost to the owner.
- e) After all new sprinkler pipelines and risers are in place and connected, all necessary diversion has been completed, and prior to installation of sprinkler heads, the control valves shall be opened and a full head of water used to flush out the system.

B. IRRIGATION – SUBMITTALS

1. Materials List

The Contractor shall furnish the articles, equipment, materials, or processes specified by name in the drawings and specifications. No substitution will be allowed without prior written approval by the City.

Equipment or materials installed or furnished without prior approval of the City may be rejected and the Contractor required to remove such materials from the site at its own expense.

Manufacturer's warranties shall not relieve the Contractor of its liability under the guarantee. Such warranties shall only supplement the guarantee.

2. Records and As-Built Drawings

The Contractor shall provide and keep up-to-date complete “As-Built” drawings indicating locations, sizes, and kinds of equipment installed. Prints for this purpose may be obtained from the Architect at cost. This set of drawings shall be kept on the site and shall be used only as a record set.

These drawings shall also serve as work progress sheets and the Contractor shall make neat and legible annotations on a daily basis as the work proceeds, showing the work as actually installed. These drawings shall be available at all times for inspection and shall be kept in a location designated by the City.

Before the date of the final inspection, the Contractor shall turn over all information recorded on the “As-Built” prints to the Engineer of Work.

The Contractor shall dimension from two (2) permanent points of reference (building corners, sidewalk, or road intersections, etc.) the location of the following items:

- a) Connection to existing water lines;

- b) Connection to existing electrical power;
- c) Gate valves;
- d) Routing of sprinkler pressure lines (dimension maximum 100' along routing);
- e) Significant changes in routing of lateral lines from those indicated on plans;
- f) Sprinkler control valves;
- g) Routing of control valves;
- h) Quick coupling valves; and
- i) Other related equipment as directed by the City.

C. IRRIGATION – MATERIALS

Use only new materials on drawings, specified herein, or approved equals.

1. PVC Pressure Mainline Pipe and Fittings

The Contractor is cautioned to exercise care in handling, loading, unloading, and storing of PVC pipe fittings. All PVC pipe is to lie flat so as not to subject it to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged will be discarded and, if installed, shall be replaced with new piping. Pipe and fittings shall not be stored in direct sunlight.

- a) Rubber gasket type pressure main line piping for sizes 3" and larger shall be Ring-Tite PVC Class 200.
- b) Pipe shall be made from NSF approved Type I, Grade I, PVC Compound conforming to ASTM Resin Specifications D1784. All pipe must meet requirements as set forth in Federal Specifications PS-22-70, with an appropriate standard dimension (S.D.R.) (Ring-Tite Pipe).
- c) Ring-Tite PVC fittings shall be fabricated from Schedule 40, 1-2, II-I NSF solvent weld PVC fittings conforming to ASTM Testing Procedure D-2466 and PVC Ring-Tite bell adapted using solvent and solvent welding procedures recommended by the manufacturer.
- d) Fabrication shall be performed at the manufacturer's plant location or at an authorized distributor shop location. Field fabrication of Ring-Tite fittings will not be allowed.
- e) Solvent welded type pressure main line piping for sizes 2" and larger shall be PVC Class 315.
- f) Pipe shall be made from NSF approved Type I, Grade I PVC Compound conforming to ASTM Resin Specifications D1788. All pipe must meet requirements as set forth in Federal Specification PS-22-70, with an appropriate standard dimension (S.D.R.) (Solvent-weld Pipe).
- g) Pressure main line piping for sizes 1½" and smaller shall be PVC Schedule 40 with solvent welded joints.
- h) Pipe shall be made from NSF approved Type I, Grade I PVC Compound conforming to ASTM Resin Specification 1785. All pipe must meet requirements as set forth in Federal Specification PS-21-70 (solvent weld pipe).
- i) PVC solvent weld fittings shall be Schedule 40, NSF approved, conforming to ASTM Test Procedure D2466.
- j) Solvent cement and primer for PVC solvent weld pipe and fittings shall be of type and installation methods prescribed by the manufacturer.
- k) All PVC must bear the following markings:

- (1) Manufacturer's name;
- (2) Nominal pipe size;
- (3) Schedule or class;
- (4) Pressure rating psi;
- (5) NSF (National Sanitation Foundation) approval.;
- (6) Date of extrusion;
- (7) U P.C. Shield Logo (IAPMO approval); and
- (8) All fittings shall bear the manufacturer's name or trademark, material designation, size, applicable I.P.S. schedule, and NSF seal of approval.

2. PVC Non-Pressure Lateral Piping

- a) Non-pressure buried lateral line piping shall be PVC Class 200 with solvent weld joints.
- b) Pipe shall be made from NSF approved, Type I, Grade II PVC Compound conforming to ASTM Resin Specification D1784. All pipes must meet requirements set forth in Federal Specification PS-22-70 with an appropriate standard dimension ratio.
- c) Except as noted in Paragraph 1 of PVC Pressure Main Line Pipe and Fittings, all requirements for non-pressure lateral line pipe and fittings shall be the same as for solvent weld pressure main line pipe and fittings as set forth in said section.

3. Brass Pipe and Fittings

- a) Where indicated on the drawings, use red brass screwed pipe conforming to Federal Specification WW-P-351.
- b) Fittings shall be red brass conforming to Federal Specification WW-P 460.

4. Galvanized Pipe and Fittings

- a) Galvanized pipe and fittings shall not be allowed under any circumstances without prior written approval from the City.

5. Copper Pipe and Fittings

- a) Copper pipe shall be Type "K", hard tempered ASTM B88 and fittings shall be wrought solder joint type in accordance with ASNI-B 16-22.
- b) Joints shall be soldered with silver solder, 45% silver, 15% copper, 16% zinc, 24% cadmium and solidus at 1,125 F and liquidus at 1,145 F, conforming to ASTM B206 and Federal Specification QQB 00655.

6. Thrust Blocks

- a) Concrete thrust blocks for all specified piping shall be the size and type required by the manufacturer's installation guide.
- b) Form thrust blocks in such a manner to prevent any concrete from coming in contact with the pipe. Solid pipe shall be between thrust block and the fitting to prevent direct contact of thrust block and fitting.
- c) Thrust blocks shall be installed on all pressure lines over 1½" in diameter whenever pressure line changes direction. Thrust blocks are required at backflow prevention device.

7. Quick Coupling Valves

- a) Quick coupling valves shall have a two-piece brass body designed for working pressure of 150 psi operable with quick coupler.
- b) Quick coupling valves shall be 1" in size and shall be equipped with a locking vinyl cover.

8. Backflow Prevention Units

- a) Backflow preventers shall be a reduced pressure type and shall be of a size as indicated on the drawings. All sprinkler irrigation systems shall require backflow prevention. All backflow prevention units shall be as set forth by local codes, the Los Angeles County Health Department, and Water District. The device shall be installed at least twelve inches (12") above grade measuring from the bottom of the device. (Current Los Angeles County Codes and Inspections required).
- b) Wye strainers at backflow prevention units shall have a bronzed screwed body for sizes 2" and smaller and 125 lb. cast iron flange body for sizes 2 " and larger. All wye strainers shall have a minimum 30 mesh screen and shall be similar to Bailey #100B or approved equal. Wye strainer shall not have a hose bib and shall be installed as per standard details. Smaller mesh screens may be required as necessary.
- c) Backflow prevention devices shall have a minimum size equal to the size of the water meter.
- d) The backflow device shall be wrapped/winterized.
- e) The backflow prevention device must be tested and certified by the Los Angeles County Department of Health Services - Cross Connections and Water Pollution Control Program and a copy of the test report submitted to the City.

9. Gate Valves/Ball Valves

- a) Gate valves 2½" and larger shall be iron body, bronze stem, flanged, full port, resilient seat, or wedge shut-off which can be serviced from the top while the valve is in line.
- b) Gate valves 4" and larger shall have 2" square operating nut, with arrow cast in metal indicating direction of opening.
- c) Gate valves 4" and larger shall have ends compatible with pipe in which they are being installed.
- d) Ball valves 2" and smaller shall be 200 psi SWP bronze ball valve with a stainless steel ball and handle.
- e) Ball valves 2" and smaller shall have threaded ends.
- f) All gate and ball valves shall be installed per standard details.

10. Control Wiring

- a) The electrical system shall be installed in accordance with the National Electrical Code most recently adopted by the City. Connections between the automatic controllers and the electric control valves shall be made with direct burial copper wire AWG-U.F. 600 volt. Pilot wires shall be a different color wire for each automatic controller. Pilot wires for single controller installations shall be black, 14 gauge minimum.

Common wires shall be white with a different color stripe for each automatic controller. Common wires shall be installed in accordance with valve manufacturer's specifications and wire chart. In no case shall wire size be less than #14.

- b) Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines wherever possible.
- c) Where more than one (1) wire is placed in a trench, the wiring shall be taped together at intervals of ten (10) feet.
- d) An expansion curl should be provided within three (3) feet of each wire connection and at each change in direction. Expansion curls shall be formed by wrapping at least five (5) turns of wire around a one-inch diameter pipe, then withdrawing the pipe.
- e) All splices shall be made with waterproof connectors.
- f) Field splices between the automatic controller and electrical control valves will not be allowed without prior approval of the City.
- g) Where additional stations remain on controller, up to two (2) additional wires may be required by the City. These wires shall be pulled to the farthest point in the project and coiled in a pull box for future use.

11. Smart Controller Specification

- a) All irrigation controllers shall meet the Irrigation Association's protocol for Smart Controllers (SWAT protocol report, www.irrigation.org).
- b) The performance standard for the Smart Water Irrigation Technologies (SWAT) protocol product report shall be 100% Adequacy and 0% Excess scores in order for the City to maximize water use efficiency and runoff reduction.
- c) The SWAT reported technology shall include an automated "scheduling engine" that changes irrigation schedules as weather changes without the need for people interactions.
- d) The SWAT reported technology shall have sufficient independent "field" tests and studies that validate the SWAT bench test protocol report.
- e) The SWAT reported technology shall be specifically tested for runoff reduction by an independent agency study that validates success in controlling non point-source water pollutants.
- f) The SWAT reported technology shall utilize real-time localized weather data that establishes daily ET for the varied City microclimates; ET data must match/conform to the State and Federal accepted Penman Montieth ET equation data, and may not be based on historical ET, single weather sensors, or individual non-government maintained weather collection devices that will need ongoing maintenance.
- g) Training/Product Service: Approved controllers/manufacturers shall include training (City staff, contracted landscapers) and be able to perform ongoing customer service in order to achieve long-term water conservation and runoff goals.

12. Electric Control Valves

- a) The electric control valve shall be a normally closed, 24-volt, 60 cycle valve.
- b) The valve shall have a slow uniform closure to eliminate water hammer or chatter.
- c) All valves shall have a manual flow adjustment.
- d) Valve shall be pressure rated to 150 psi.

13. Outdoor Automatic Controller Enclosure

- a) The outdoor controller enclosure shall be of appropriate size to adequately house specified controller, be made of weather resistant and collision resistant 12 gauge hot rolled steel, and finished with weather resistant medium green epoxy paint. Lockable hinged doors shall be equipped with full length stainless steel gasket hinges.

14. Control Valve Box (only for in-ground valves)

- a) If in-ground valves are used, an irrigation valve box must be used. The valve box shall be large enough for easy access to the valves.

15. Sprinkler Heads

a) General

- 1) All sprinkler heads shall be of the same size, type, and shall deliver the same rate of precipitation with the diameter (or radius) of throw, pressure, and discharge as shown on the plans.
- 2) Spray heads shall have a screw adjustment.
- 3) Riser nipples for all sprinkler heads shall be the same size as the riser opening in the sprinkler body.
- 4) All sprinkler heads of the same type shall be of the same manufacturer.
- 5) All sprinkler heads shall have low precipitation rate and a spray angle less than 10 degrees.

a. Type "A" Pop-Up Lawn Spray

- I. Pop-up lawn spray heads shall have a minimum 6" pop-up nozzle piston with a stainless steel retraction spring. The sprinkler body shall be manufactured of a corrosion resistant material such as high strength, ultra-violet, and impact resistant plastic.
- II. Nozzles for 6" pop-up lawn spray sprinklers shall be of plastic construction and shall be adjustable.

b. Type "B" Pop-Up Shrub Spray

- I. Pop-up shrub spray heads shall have a minimum, 18" pop-up nozzle piston with a stainless steel retraction spring. The sprinkler body shall be manufactured of a corrosion resistant material such as high strength, ultra-violet, and impact resistant plastic.
- II. Nozzles for 18" pop-up spray heads should be used within low growing ground cover areas only, and shall have an adjustable radius.

c. Type "C" Bubbler

- I. Bubblers to be pressure compensating type, pre-set gallonage.

16. Drip Systems

- a) Valves used in drip irrigation applications shall be designed to operate at minimal flow rates.
- b) Pre-set pressure regulators may be used and are to be sized to the manufacturer's recommended pressure setting for the emitters being used.
- c) Pressure regulators will be installed after the remote control valves.

- d) All drip components will have filtration after each remote control valve for mixed systems. Filters will be compatible with the brand of drip components being used and with fine enough mesh screen to filter all objectionable foreign material. Filters must be easily accessible for cleaning.
- e) The number and size of emitters will be as per manufacturer's recommendation for size of plants to be irrigated.
- f) All emitters will be pressure compensating.
- g) All emitter tubing will be staked to the ground.
- h) Separate drip systems will be used for plants of differing water requirements (hydrozones).
- i) All drip lateral lines shall be PVC schedule 40 or class 200 pipe.
- j) Multi-outlet emitters used for shrubs and ground covers will be placed in 6" round valve boxes.

17. Booster Pump

- a) Pump shall be equipped with tapped holes for pressure gauges on suction and discharge posts of pump.
- b) All fittings shall be brass.
- c) Suction line assembly shall be sized the same as the pump suction inlet.
- d) All pumps shall be equipped with a pump panel within 10 feet of pump location. Pump panel shall be housed in a lockable, weatherproof enclosure with the following components:
 - (1) HOA (Hand, Off, Automatic) switch. "Hand" position shall be spring loaded to return to "Off" position;
 - (2) 24 volt transformer; and
 - (3) Minimum run timer with settings from 0-10 minutes.
- e) Irrigation plan submittals shall include a complete detailed drawing of pump assembly and all electrical installation from electric meter through panel and to pump motor.
- f) All booster pumps and electric panels shall have a slump stone, or approved equal, block wall installed around them for anti-vandalism as well as aesthetic purposes.

D. IRRIGATION-INSTALLATION PROCEDURES

1. Site Conditions

- a) Exercise extreme care in excavating and working near existing utilities. Contractor shall be responsible for damages to utilities which are caused by its operations or neglect. Check existing utilities drawings for existing utility locations. Call out mark-out crews for each utility.
- b) Coordinate installation of sprinkler irrigation materials, including pipe, so there shall be no interference with utilities or other construction, or difficulty in planting trees, shrubs, and ground covers.
- c) Carefully check all grades to satisfy itself that it may safely proceed before starting work on the sprinkler irrigation system.

2. Water Supply

- a) Sprinkler irrigation system shall be connected to water supply points of connection as indicated on the drawings.
- b) Contractor is responsible for minor changes by actual site conditions.

3. Trenching

- a) Dig trenches straight and support pipe continuously on bottom of trench. Lay pipe to an even grade. Trenching excavation shall follow layout indicated on drawings and as noted.
- b) Provide a minimum of 18" of cover for all pressure supply lines 1½" and smaller.
- c) Provide a minimum cover of 12" for all non-pressure lines.
- d) Provide a minimum cover of 18" (or directly below mainline where possible) for all control wiring.

4. Backfilling

- a) The trenches shall not be backfilled until all required tests are performed. Trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand, or other approved materials, free from large clods of earth or stones. Backfill shall be compacted in landscaped areas to a dry density equal to adjacent undisturbed soil in planting areas. Backfill will conform to adjacent grades without dips, sunken areas, humps, or other surface irregularities.
- b) If settlement occurs, all subsequent adjustments in pipe, valves, sprinkler heads, lawn or plantings, or other construction necessary, the Contractor shall make all required adjustments.

5. Trenching and Backfill Under Paving

- a) Generally, piping under existing walks may be accomplished by jacking or boring; but where any cutting or breaking of sidewalks and/or concrete is necessary, it shall be done and replaced by the Contractor as part of the contract cost.
- b) Provide for a minimum cover of 18" between the top of the sleeve and the bottom of the aggregate base for all pressure and non-pressure piping installed under asphaltic concrete paving. All sleeves under paving shall be Schedule 40 PVC. Sleeves shall be installed

under all paving/concrete areas. Provide sleeve a minimum of 2 times the diameter of water pipe for irrigation pipe, 1" sleeve for wires.

- c) All control wire installed where mainline is not called for shall be installed in Schedule 40 PVC conduit.

6. Automatic Controller

- a) Install as per manufacturer's instructions. Remote control valves shall be connected to controller in numerical sequence as shown on the drawings.
- b) Installer must be certified by the manufacturer to install their ETo Timers.

7. High Voltage Wiring for Automatic Controller

- a) 120 volt power connection to the automatic controller.
- b) All electrical work shall conform to local codes, ordinances, and authorities having jurisdiction.
- c) Timers installed outdoors must be direct wired.

8. Remote Control Valves

- a) Install as per manufacturer's instructions.
- b) Install where shown on drawings and details.
- c) Valves to be located in planters.

9. Lawn Sprinkler Heads

- a) Install the sprinkler heads as designated on the drawings. Sprinkler heads to be installed shall be equivalent in all respect to those itemized on plans and in details.
- b) Spacing of heads shall not exceed the maximum indicated on the drawings. In no case shall the spacing exceed the maximum recommended spacing by the manufacturer for wind speeds at 3-5 miles per hour.
- c) Heads shall be placed around the perimeter of the turf areas directing spray into the turf area. Use full head sprays to water the middle of lawn areas. Irrigation efficiency shall be uniform and meet or exceed 85 percent.
- d) Sprinklers shall not be installed any closer than two inches from hard surface edges and lawn edges.
- e) The cap height of pop-up sprinklers, mounted in turf areas, should be at grade level, to avoid damage to lawn mowers. There should be no depression around sprinkler heads.
- f) All sprinkler heads shall be set perpendicular to finished grades unless otherwise designated on the plans.
- g) The Contractor shall flush and adjust all sprinkler heads for optimum performance and to prevent overspray onto walks, roadway, and buildings as much as possible.
- h) If it is determined that adjustments in the irrigation equipment are needed to provide proper and more adequate coverage, the Contractor shall make such adjustments prior to planting. Adjustments may also include changes in nozzle sizes and degrees of arc as required.

10. Shrub Sprinkler Heads

- a) Install the sprinkler heads as designated on the drawings. Sprinkler heads to be installed shall be equivalent in all respect to those itemized on plans and in details.
- b) Spacing of heads shall not exceed the maximum indicated on the drawings. In no case shall the spacing exceed the maximum recommended spacing by the manufacturer for wind speeds at 3-5 miles per hour.
- c) Sprinklers shall face away from the house and hard surfaces to prevent water spray on house and hard surfaces.
- d) Sprinklers shall not be installed any closer than two inches from hard surface edges and lawn edges.
- e) The cap height of pop-up sprinklers shall be at finished grade plus height of mulch. There should be no depression around sprinkler heads.
- f) All sprinkler heads shall be set perpendicular to finished grades unless otherwise designated on the plans.
- g) The Contractor shall flush and adjust all sprinkler heads for optimum performance and to prevent overspray onto walks, roadway, and buildings.
- h) If it is determined that adjustments in the irrigation equipment are necessary to provide proper and more adequate coverage, the Contractor shall make such adjustments prior to planting. Adjustments may also include changes in nozzle sizes and degrees of arc as required.

11. Drip Irrigation Systems

- a) Installation will be as per manufacturer's recommendation, unless otherwise required by the City.

12. Existing Trees

- a) Where it is necessary to excavate adjacent to existing trees, the Contractor shall use all possible care to avoid injury to trees and tree roots. Excavation in areas where 2" and larger roots occur shall be done by hand. All roots 2" and larger in diameter, except directly in the path of pipe or conduit, shall be tunnelled under and shall be heavily wrapped with burlap to prevent scarring or excessive drying. Where a ditching machine is run close to trees having roots smaller than 2" in diameter, the wall of the trench adjacent to the trees shall be hand trimmed, making clean cuts. Trenches adjacent to trees should be filled within twenty-four (24) hours; and where this is not possible, the side of the trench adjacent to the tree shall be kept shaded with burlap or canvas.

13. Inspection Schedule for Irrigation

- a) Contractor shall be responsible for notifying the City 24 hours (one working day) in advance for all inspections.
- b) No work shall be backfilled until appropriate inspections and tests have been completed and approved by the City.
- c) No irrigation inspection will commence without "As-Built" drawings. In the event the Contractor calls for an inspection without "As-Built" drawings, without completing

previously noted corrections, or without preparing the system for inspection, no inspection will be made. Work will be redone at the Contractor's expense.

14. Clean-Up

- a) Clean-up shall be made as each portion of work progresses. Refuse and excess dirt shall be removed from the site, all paving shall be broomed or washed down, and any damage sustained shall be repaired to original conditions.

E. LANDSCAPING MATERIALS

1. Plant Materials

- a) Nomenclature - The scientific and common names of plants specified shall conform with the approved names given in "Sunset New Western Garden Book" published by Lane Publishing Co. (latest Edition).
- b) Labeling - Each group of plant materials delivered to the site shall be clearly labeled as to species, variety, and nursery source.
- c) Quality and Size
 - 1) Plants shall be in accordance with the California State Department of Agriculture's regulation for nursery inspections, rules and grading.
 - 2) All plants shall have a normal habit of growth and shall be sound, healthy, vigorous, and free of insect infestations, plant diseases, sun scalds, fresh abrasions of the bark, or other objectionable disfigurements.
 - 3) Tree trunks shall be sturdy and well "hardened off". All plants shall have normally well developed branch systems and vigorous and fibrous root systems which are not root or pot bound. In the event of disagreement as to condition of root system, the root condition of the plants furnished by the Contractor in containers will be determined by removal of earth from the roots of not less than two plants of each species or variety. Where container grown plants are from several sources, the roots of not less than two plants of each species or variety from each source will be inspected. In case the sample plants inspected are found to be defective, all plants will have to be replaced.
 - 4) The size of the plants will correspond with that normally expected for species and variety of commercially available nursery stock or as specified in the drawings. The minimum acceptable size of all plants, measured before pruning with the branch in normal position, shall conform with the measurements, if any, specified on the drawings in the list of plants to be furnished.
- d) Rejection or Substitution - All plants not conforming to the requirements herein specified shall be considered defective and such plants, whether in place or not, shall be marked as rejected and immediately removed from the site of work and replaced with new plants. The plants shall be of the species, variety, size, and condition specified on the drawings.
- e) Pruning - At no time shall the tree or plant materials be pruned, trimmed, or topped prior to delivery. Main leaders shall not be cut or removed.
- f) Protection - All plants at all times shall be handled and stored so that they are adequately protected from drying out, wind burn, or any other injury.

2. Topsoil
 - a) Topsoil shall consist of a natural, fertile, friable, sandy loam soil. The topsoil shall be free from subsoil, refuse, heavy roots, clay lumps, stones larger than 1" in size, noxious weeds, sticks, brush, liner material, and other deleterious substances.
3. Soil Amendments
 - a) Soil amendments shall be a wood or bark product. The soil amendment shall not contain any bio-waste, noxious weeds, or weed seeds, pathogens, herbicides, or other chemicals that could inhibit plant growth.
 - b) Soil amendments shall be nitrified to prevent soil nutrient problems.
4. Sod Pre-plant Fertilizers
 - a) Approved pre-plant fertilizers: Ammonium Phosphate Sulfate (16-20-0), Triple 16 (16-16-16), Triple 15 (15-15-15).
 - b) Apply at the manufacturer's and/or sod provider's recommendation.
5. Tree/Shrub Pre-plant Fertilizers
 - a) Two-year time release fertilizer tablets.
 - b) Minimum tablet size is 20 grams.
 - c) Apply at the following rates: 1 per 1 gallon, 2 per 5 gallon, 5 per 15 gallon.
6. Tree Ties
 - a) Tree ties shall be installed per City standard details. The tree shall be fastened to the stakes with a No. 12 BWG galvanized iron wire covered with a new rubber garden hose in a manner which permits tree movement and supports the tree. Two (2) double ties shall be used near the top of the main tree trunk and near the middle of the main tree trunk.
7. Tree Stakes
 - a) Eight foot tree stakes shall be a heavy weight (1.33 lb/ft) metal forest green tee post. Ten foot tree stakes shall be 1½" diameter schedule 20 galvanized steel painted forest green. Stakes shall be 10' long for 24" box trees and 8' long for 15 gallon trees, and shall be driven into soil a minimum of 24" depth and a minimum distance of 12" from the tree trunk.
8. Trunk Guards/Root Barriers
 - a) Trunk guards shall be installed at base of all trees planted in turf areas.
9. Mulch
 - a) Mulch may be decorative bark, rock, or decomposed granite. All planters shall have added mulch and no bare ground. Mulch shall be at least 2 inches deep. The soil mulch shall not contain any bio-waste, noxious weeds or weed seeds, pathogens, herbicides, or other chemicals that could inhibit plant growth. Mulch shall be free of dirt and any other foreign material.

10. Sod

- a) Sod shall be fully mature, well maintained, and a variety of either 100% Tall or Hybrid Fescue mixture, or Hybrid Bermuda. The sod shall be free of all other grasses or weeds, and shall be evenly cut with a conventional sod cutting machine. All material shall be from the same growing ground and delivered fresh to the job site.

F. LANDSCAPE - INSTALLATION PROCEDURES

1. Grading and Soil Preparation

- a) All rough grading, mounding, and irrigation shall be completed prior to soil preparation.
- b) Rototill entire landscape area (planters and sod) to a minimum depth of 6 inches to remove construction compaction.
- c) Rototill in 3 cubic yards of soil amendment per 1,000 square feet of landscape area.
- d) Planting areas shall be free of all weeds (plants not specified in planting areas), stones, stumps, roots or other debris 1" in diameter or larger for a minimum of 6 inch depth.
- e) Soil shall be graded to a smooth and even surface conforming to required finish grade. Finish grade adjacent to walks, paved areas, curbs, manholes, clean outs, valve boxes, and similar features shall be 1" below the surface in turf and 2" below the surface in ground cover/shrub areas. Grades between such features shall be carefully sustained and blended to eliminate abrupt changes.
- f) Soil shall be graded to prevent water from running towards the home or patio and to prevent standing water near the home.
- g) Planting areas to receive sod shall sustain a finish grade of such depth that installed sod shall be flush with finish surfaces (walks, paved areas, etc.).
- h) All planting areas shall have a finish grade conforming to approved plans and specifications after full settlement has occurred.

2. Ground Cover

- a) Ground cover plants shall be grown in flats. Flat grown plants (rooted cuttings) shall remain in those flats until transplanting. The soil of the flat shall contain sufficient moisture so that it will not fall apart when lifting the plants.
- b) To avoid drying out, plantings shall be immediately sprinkled after planting until the entire area is soaked to the full depth of each hole. Evenly spread approved mulching material in the area planted with ground cover to a depth of 2".

3. Planting of Trees Shrub and Vines

- a) Excavation for Planting
 - 1) Excavation for planting shall include the stripping and staking of all acceptable topsoil encountered within the areas to be excavated for trenches, tree holes, plant pits, and planting beds.
 - 2) All excavated holes shall have vertical sides with roughened surfaces. The holes shall be, in all cases, large enough to permit handling and roots or root balls.
 - 3) Excess soil generated from the planting holes may be distributed on the site and amended as specified in general soil preparation.

b) Planting

- 1) No more plants shall be distributed in the planting area on any day than can be planted and watered on that day.
- 2) Plants shall be removed in such a manner that the ball of earth surrounding the roots is not broken, and they shall be planted and watered as herein specified immediately after removal from the container.
- 3) Acceptable topsoil which was salvaged during the digging of planting holes may be used for backfill.
- 4) After the plant has been placed, backfill shall be added to the hole to cover approximately one-half the height of the root ball. At this stage, water shall be added to the top of the partly filled hole to thoroughly saturate the root ball and adjacent soil.
- 5) Use Best 20-10-5 two-year time release fertilizer tablets, or equal, at the following rates: 1 per 1 gallon, 2 per 5 gallon, 3 per 15 gallon.
- 6) After the water has completely drained, the remainder of the hole shall then be backfilled.
- 7) After backfilling, a temporary earthen basin shall be constructed around each plant. Each basin shall be a depth sufficient to hold at least 6" of water. Basins shall be extended 6 inches from the edge of the root ball of each individual plant.
- 8) Immediately after planting apply water to each tree and shrub.
- 9) Plant basins shall be irrigated at least twice over two days prior to removing the berm and applying mulch.

4. Turf

- a) After preparation of soil in accordance with the section "Grading and Soil Preparation", the areas to be planted to lawn shall be rolled, raked, and floated to finish grade by any acceptable method with the finish grade being smooth and even, free of rocks and clods, and reasonably well firmed. Prior to planting, the surface of the area shall be sufficiently loose and viable to receive sod.
 - 1) Pre-fertilization – Just prior to the planting of turf, evenly broadcast appropriate fertilizer as specified by manufacturer's recommendation.
 - 2) Sod - Lay sod in one direction only, with close fitting butt joints. The ends of each strip shall be staggered to eliminate continuous joining.

5. Compliance With The Certificate Of Completion

- a) The project applicant shall:
 - 1) Prior to backfilling, have a licensed landscape architect, certified irrigation auditor, or licensed landscape contractor conduct a preliminary field observation of the irrigation system;
 - 2) Upon project installation, have a licensed landscape architect or licensed landscape contractor conduct a final field observation for the approval of the certificate;
 - 3) Upon project installation, have a certified irrigation auditor conduct a landscape irrigation audit as required under Title 8, Chapter 50 of the Lancaster Municipal Code (Lancaster Water Efficient Landscape Ordinance) and described in these design standards.
 - 4) Submit the signed Certificate of Completion to the City for approval;

- 5) Receive the Certificate of Occupancy or equivalent from the City; and
- 6) Submit copies of the approved Certificate of Completion to the local retail water purveyor and the property owner or his/her designee.

SECTION II: SPECIAL REQUIREMENTS FOR RESIDENTIAL LANDSCAPE AND IRRIGATION

- A. Turf is prohibited in commercial and industrial development proposals except where approved as a recreational area.
- B. Turf is not to exceed 30% of the landscape areas in residential development proposals, nor exceed maximum allowable turf areas described in the table below.
- C. Pool and spa covers are required.

Maximum Allowable Turf Areas for Residential Development

Table A

Type of Residential Development	R-7000 SFR lots or smaller	R-10,000 SFR lots	½ Acre lot or larger
Maximum Turf (sq. footage)	1,500	2,000	4,000

SECTION III: SPECIAL REQUIREMENTS FOR COMMERCIAL, INSTITUTIONAL, AND INDUSTRIAL LANDSCAPE AND IRRIGATION

- A. Turf is prohibited in commercial, institutional, and industrial development proposals except where approved as a recreational area.

SECTION IV: SPECIAL REQUIREMENTS FOR LANDSCAPE MAINTENANCE DISTRICTS AND PUBLIC RIGHTS-OF-WAY LANDSCAPE AND IRRIGATION

- A. Organic mulch is required to be three inch minimum depth.

APPENDIX A

Appendix A – Reference ETo

Reference Evapotranspiration (ETo) Table for the City of Lancaster, Los Angeles County, California

(inches of water)

Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual ETo
2.1	3.0	4.6	5.9	8.5	9.7	11.0	9.8	7.3	4.6	2.8	1.7	71.0

The values in this table were derived from: 1) California Irrigation Management Information System (CIMIS); 2) Reference EvapoTranspiration Zones Map, UC Dept. of Land, Air & Water Resources and California Dept of Water Resources 1999; 3) Reference Evapotranspiration for California, University of California, Department of Agriculture and Natural Resources (1987) Bulletin 1922; and 4) Determining Daily Reference Evapotranspiration, Cooperative Extension UC Division of Agriculture and Natural Resources (1987), Publication Leaflet 21426.

APPENDIX B

Appendix B – Water Efficient Landscape Worksheet

Please complete the entire worksheet. This worksheet is part of the Landscape Documentation Package

SECTION A. PROJECT INFORMATION

Date: _____

Project Name _____

Project Applicant _____

Project Address and Location

Street Address		Parcel Number
City		Tract or Lot Number(s)
State	Zip Code	Latitude/Longitude Coordinates (optional)

Please use the checklist below to indicate completion of the Landscape Documentation Package.

Landscape Documentation Package

- Water Efficient Landscape Worksheet
- Soil Management Plan (Soil Analysis Report and On-site soil Assessment with Recommendations)
- Landscape Design Plan
- Irrigation Design Plan
- Grading Design Plan

Please fill in the information below to describe the landscape project, where applicable:

Total Project area _____ (sq. feet)

Total irrigated landscape area * _____ (sq. feet)

Turf area _____ (sq. feet)

Non-turf area _____ (sq. feet)

Recreational areas _____ (sq. feet)

Areas permanently and solely dedicated to edible plants _____ (sq. feet)

*Additional information is also required in Part # 3 of the worksheet

Total non-irrigated landscape area _____ (sq. feet)

Water supply type. Please check all that apply.

- Potable water
- Recycled Water
- Graywater
- Mixed Use
- Rainwater
- Other _____

- Groundwater or Well Water

Project Type. Please check only one

- | | |
|--|---|
| <input type="checkbox"/> Public or community facility (i.e., park, playground, etc.) | <input type="checkbox"/> Single Family Residence |
| <input type="checkbox"/> Commercial | <input type="checkbox"/> Multi-Family Residential |
| <input type="checkbox"/> Industrial | <input type="checkbox"/> Model Home |
| <input type="checkbox"/> Institutional (i.e., school, etc.) | <input type="checkbox"/> Mixed Use |
| <input type="checkbox"/> Other _____ | |

Project Contacts

The project applicant and other individuals may receive inquiries or notifications of all proceedings regarding the Water Efficient Landscape Worksheet from the local agency. Please provide the name, address, and telephone, etc. of each person to receive such inquiries and notifications.

1. Project Applicant

Name	Telephone #	
	Fax #	
Title	Email address	
License #		
Company	Street Address	
City	State	Zip

2. Property Owner

Name	Telephone #	
	Fax #	
Title	Email address	
License #		
Company	Street Address	
City	State	Zip

3. Licensed Landscape Architect

Name	Telephone #	
	Fax #	
Title	Email address	
License #		
Company	Street Address	
City	State	Zip

4. Certified Irrigation Designer

Name	Telephone #	
	Fax #	
Title	Email address	
License #		
Company	Street Address	
City	State	Zip

5. Landscape Installation Contractor

Name	Telephone #
------	-------------

	Fax #	
Title	Email address	
License #		
Company	Street Address	
City	State	Zip

6. Landscape Maintenance Contractor (if known)

Name	Telephone #	
	Fax #	
Title	Email address	
License #		
Company	Street Address	
City	State	Zip

7. Local retail water purveyor

Name of contact at water purveyor	Telephone No.	
	Fax No.	
Title	Email address	
Name of Company or Water Purveyor	Street Address	
City	State	Zip Code

SECTION B. WATER USE EFFICIENCY STATEMENT

Provide a narrative summary of the water use efficiency practices applied to the landscape project and answer all of the following questions (attach additional sheets if necessary):

Narrative
Statement _____

Questions:

- 1) Did you review the ordinance to learn about the criteria and specifications for landscape design plans? Yes _____ No _____

2) Did you coordinate with the local agency or local retail water purveyor on the landscape design plan?

3) Which criteria and specifications did you apply to the landscape design plan?

4) Did you review the ordinance to learn about the criteria and specifications for the irrigation design plans?

5) Did you coordinate with the local agency or local retail water purveyor on the irrigation design plan?

6) Which criteria and specifications plan did you apply to your irrigation design plan?

7) Did you ask for assistance from the local agency/local retail water purveyor to calculate a project water budget?

8) Did you receive any water efficient landscape publications from the local agency or local retail water purveyor?

9) How will you assure the overall quality of the irrigation system?

10) How will you manage the irrigation system for optimum operation and performance?

11) How will you manage the irrigation system to respond to the changing requirement for water in the landscape?

12) Did you apply any stormwater best management practices to the design?

13) If recycled water was available, did you design and install a dual distribution system?

14) Did you select plants from the City approved plant list?

SECTION C. Water Budget Calculation

Section C1. Maximum Applied Water Allowance

The Project's Maximum Applied Water Allowance shall be calculated using this equation:

$$\text{MAWA} = (\text{ET}_o) (0.7) (\text{LA}) (0.62)$$

MAWA	=	Maximum Applied Water Allowance (gallons per year)
ET _o	=	Reference Evapotranspiration (inches per year)
0.7	=	ET Adjustment Factor
LA	=	Landscaped Area (square feet)
0.062	=	Conversion factor (to gallons)

Maximum Applied Water Allowance = _____ gallons

Show calculations

If the irrigation water (recycled water or blended water) has electrical conductivity equal to, or greater than, 3 deci Siemens per meter (dS/m) or 3 millimhos per centimeter (mmh/cm) or 2000 mg per liter total dissolved solids (TDS), a leaching factor of up to 10% may be included in the MAWA calculation. The leaching factor shall not exceed 10% of MAWA.

Section C2. Estimated amount of water expected from effective precipitation has been eliminated because the City of Lancaster does not receive enough reliable rainfall in any given year to utilize this information.

Section C3. Estimated Water Use for hydrozones and Estimated Total Water Use

The project's Estimated Total Water Use is calculated using the following formula:

$$\text{EWU} = \frac{(\text{ET}_o) (\text{PF}) (\text{HA}) (0.62)}{(\text{IE})}$$

EWU	=	Estimated total water use for a hydrozone (gallons)
ET _o	=	Reference evapotranspiration (inches per month)
PF	=	Plant Factor
HA	=	Hydrozone area (square feet)
0.62	=	Conversion factor
IE	=	Irrigation efficiency

Show calculations for each hydrozone (attach additional sheets if necessary).

$$ETWU = \sum_{i=1}^n (EWU_i)$$

i = hydrozone number

n = total number of hydrozones

Estimated Total Water Use = _____

Show calculations:

Section C4. Estimated Applied Water Use section has been eliminated because the City of Lancaster does not utilize effective rainfall in these calculations

Section C5. Additional Water Requirements

Recreational areas and areas permanently and solely dedicated to edible plants may require water in addition to the Maximum Applied Water Allowance. Please be sure to provide a statement in the landscape design plan and in the irrigation schedule, designating those portions of the landscape to be used for such purposes and specifying any additional water needed above the Maximum Applied Water Allowance. The total amount of irrigation water allowed for these areas shall not exceed 1.0 of ETo.

Show calculations:

SECTION D. HYDROZONE INFORMATION

Section D1. Hydrozone Map

Attach a hydrozone map to the Water Efficient Landscape Worksheet. Hydrozones shall be designated by number, letter, or other designation. Designate the areas irrigated by each valve, and assign a number to each valve. Use this valve number in Section D2 – Hydrozone Table. This map can also assist with pre and final inspections of the irrigation system, and programming the controller.

Section D2. Hydrozone Table (Blank Form)

Please complete the hydrozone table(s) for each irrigation point of connection. Use as many worksheets as necessary to provide square footage of landscape area per valve. Blank forms are provided on the next page.

Irrigation Point of Connection (P.O.C.) #					
Controller #	Valve Circuit #	Plant Type (s)*	Irrigation Method	Area (Sq. Ft.)	% of Landscape area

* Plant Type		**Irrigation Method	
CST	= Cool Season Turf	MS	= Microspray
WST	= Warm Season Turf	S	= Spray
HW	= High Water Use Plants	R	= Rotor
MW	= Moderate Water Use Plants	B	= Bubbler
LW	= Low Water Use Plants	D	= Drip

Section D3. Hydrozone Calculations Summary (Blank Form)

Please complete a hydrozone calculation summary for each irrigation point of connection.

Irrigation Point of Connection #		
Hydrozone	Total Square Feet	% of Total Landscape Area
Cool Season Turf		
Warm Season Turf		
High Water Use Plants		
Moderate Water Use Plants		
Low Water Use Plans		
High and Medium Water Mix		
Medium and Low Water Mix		
Total		

Comments

The hydrozone table and hydrozone calculation summary are provided below as examples only.

Irrigation Point of Connection (P.O.C.) #1 Main Street					
Controller #	Valve Circuit #	Plant Type	Irrigation Method	Area (sq.ft.)	% of Landscape Area
1	1	HW/MW	Bubbler	275	2.8%
1	2	HW	Bubbler	275	2.8%
1	3	LW	Drip	1,040	10.5%
1	4	CST	Spray	496	5.0%
1	5	LW	Drip	600	6.1%
1	6	CST	Spray	1,600	16.2%
1	7	LW	Drip	724	7.3%
1	8	MW/LW	Drip	1,852	18.8%
2	1	CST	Spray	1,600	16.2%
2	2	HW	Bubbler	80	0.8%
2	3	LW	Drip	780	7.9%
2	4	LW	Drip	548	5.6%

Irrigation Point of Connection # (P.O.C.)		#1 (Main Street)
Hydrozone	Total Square Feet	% of Total Landscape Area
Cool Season Turf	3,696	37.0
Warm Season Turf	0	0
High Water Use Plants	355	3.6
Moderate Water Use Plants	0	0
Low Water Use Plants	3,692	37.6
High and Medium Water Mix	275	2.3
Medium and Low Water Mix	1,852	18.7
Total	9,870	100%

SIGNATURES

I further acknowledge and agree under penalty of perjury under the laws of the State of California that the information contained in the Water Efficient Landscape Worksheet is true and correct.

Signature of Project Applicant

Date

THIS SECTION BELOW IS FOR LOCAL AGENCY USE ONLY.

Signature of the Local Agency Representative	
Name of the Local Agency Representative	
Title	
Telephone Number	
Email Address	
Name of Local Agency	
Name of Department/Division/Unit	
Street Address	
City	
State and Zip Code	

For this project the Permit, Plan Check, or Design Review has been:

Issued

Date: _____

Notes: _____

Denied:

Date: _____

Notes: _____

Comments: _____

APPENDIX C

Appendix C – Sample Certificate of Completion

CERTIFICATE OF COMPLETION

This certificate is completed by the project applicant upon installation at the final field observation of a landscape project.

Please complete all sections below

SECTION A. PROJECT INFORMATION

Date _____

Project Name: _____

Project Applicant _____

Project Address and Location

Street Address		Parcel Number
City		Tract or Lot Number
State	Zip Code	Latitude/Longitude (optional)

Please answer the questions below:

1) Did you submit a Landscape Documentation Package to your local agency?

Yes No

2) Was your Landscape Documentation Package approved by the local agency?

Yes No

3) When were you issued a permit or approval for the plan check or design review?

Date: _____

4) Did you submit the Water Efficient Landscape Worksheet (including the Water Budget Calculations) to your local retail water purveyor?

Yes, Date: _____

No

SECTION B. FINAL INSPECTION

Please use this checklist to verify the following has been completed:

- The preliminary field observation of the irrigation system or plumbing, prior to backfilling, is completed. Date of preliminary field observation: _____
- Date of final field observation by project applicant: _____
- The plant materials are installed as specified.
- The Irrigation system is designed as specified.
- If applicable, the dual distribution system for recycled water is installed as specified.
- There is minimal run off or overspray from the irrigation system.
- The irrigation schedule is submitted for the plant establishment period.
- The project submittal package including any as built modifications to the landscape design or irrigation system design and a copy of this Certificate of Completion has been provided to the property owner or his/her designee.

Fill in any additional criteria or specifications from the ordinance.

- _____
- _____
- _____
- _____
- _____

Comments:

SECTION C. IRRIGATION (WATERING) SCHEDULE

Attach the irrigation schedule.

SECTION D. LANDSCAPE IRRIGATION AUDIT REPORT

Attach the Landscape Irrigation Audit Report .

SECTION E. SCHEDULE OF LANDSCAPE IRRIGATION AUDITS

Attach the schedule of Landscape Irrigation Audits.

SECTION F. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE

Attach the schedule of Landscape and Irrigation Maintenance.

SECTION G. SIGNATURES

Attach signatures.

CONTRACTOR

“I/we certify that work has been installed in accordance with the contract documents.”

<i>Signature of Contractor</i>		Date	
Name of Contractor –(print)		Telephone No.	
		Fax No.	
Title		Email address	
License No.			
Company Name		Street Address	
City	State	Zip Code	

LANDSCAPE ARCHITECT, CERTIFIED IRRIGATION DESIGNER, OR LICENSED LANDSCAPE CONTRACTOR

“I/we certify that based upon periodic site observations, the work has been substantially completed in accordance with the ordinance and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape Documentation Package.”

<i>Signature of Landscape Architect/Certified Irrigation Designer/ Landscape Contractor</i>		Date	
Name of Landscape Architect/Certified Irrigation Designer/ Landscape Contractor (print)		Telephone No.	
		Fax No.	
Title		Email address	
License No. or Certification No.			
Company Name		Street Address	
City	State	Zip Code	

PROPERTY OWNER

“I/we that I/we have received all of the contract documents and that it is our responsibility to see that the project is maintained in accordance with the contract documents and to comply with the provisions of the ordinance pertaining to landscape irrigation audits.”

<i>Signature of Property Owner or his/her Designee</i>		Date	
Property Owner or his/her designee (print)		Telephone No.	
		Fax No.	
Title		Email address	
Company Name		Street Address	
City		State	Zip Code

THIS SECTION BELOW IS FOR LOCAL AGENCY USE ONLY.

<i>Signature of the Local Agency Representative</i>		<i>Name of the Local Agency Representative</i>	
Phone #	Email address	Title	
Name of local agency		Name of Department, Division, or Unit	
Street Address		City	
State		Zip Code	

For this project, the **Certificate of Completion** has been

Approved

Date: _____

Notes: _____

Denied

Date: _____

Notes: _____

For this project, the **Certificate of Occupancy or Equivalent** has been:

Issued

Date: _____

Notes: _____

Denied

Date: _____

Notes: _____

APPENDIX D

Appendix D – Effective Precipitation Disclosure Statement

This portion of the formula has been eliminated, as the City does not receive enough annual precipitation to utilize in this formula.

APPENDIX E

Appendix E – Conversion Factors and Calculations

A. Conversion Factors

To convert from	To	Multiply By
inches of water	Gallon	Landscape area (sq.ft.) x 0.62
cubic feet	Gallons	7.48
ccf	Gallons	748
acre feet	Gallons	325,851
acre feet	Cubic feet	43.560
gallons	Pounds	8.34
cubic feet per second (cfs)	Gallons per minute (gpm)	448.83
hectare	Acres	2.47
acres	Square feet	43,560

B. Calculations

ET Adjustment Factor

$$ETAF = (PF)/(IE)$$

Where:

ETAF = Evapotranspiration adjustment factor

PF = Plant factor

IE = Irrigation efficiency

= (Distribution Uniformity) X (Management Efficiency)

Landscape Coefficient (refer to Water Use Classification of Landscape Species or WUCOLS for details)

$$K_L = (K_s) (K_d) (K_{mc})$$

K_L = landscape coefficient or plant factor.

K_s = *species factor*

K_d = *density factor*

K_{mc} = microclimate factor

Maximum Applied Water Allowance

$$MAWA = (ET_o) (0.7) (LA) (0.62)$$

MAWA= Maximum Applied Water Allowance (gallons per year)

ET_o = Reference Evapotranspiration (inches per year)

0.7 = ET Adjustment Factor

LA = Landscaped Area (square feet)

0.62 = Conversation factor

Estimated Water Use (for a Hydrozone)

$$EWU = \frac{(ET_o) (PF) (HA) (0.62)}{(IE)}$$

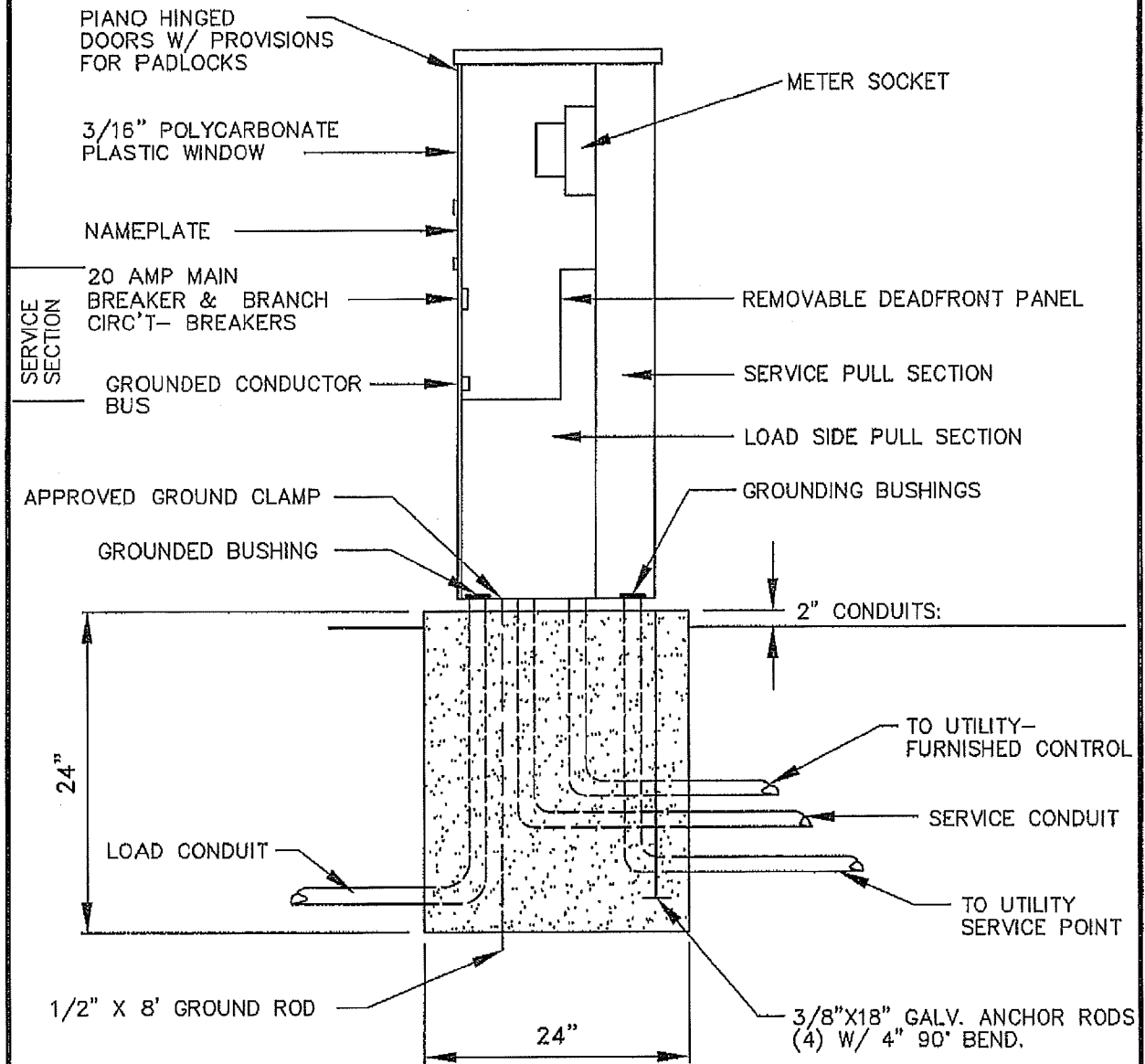
EWU	=	Estimated total water use for a hydrozone (gallons)
ET _o	=	Reference evapotranspiration (inches per month)
PF	=	Plant factor (or landscape coefficient)
HA	=	Hydrozone area (square feet)
0.62	=	Conversion Factor
IE	=	Irrigation Efficiency (fraction)

APPENDIX F

Appendix F – Standard Details

NOTE:

- ALL EQUIPMENT AND INSTALLATION SHALL CONFORM TO CALTRANS STD DETAIL ES - 2B AND ALL CODES.



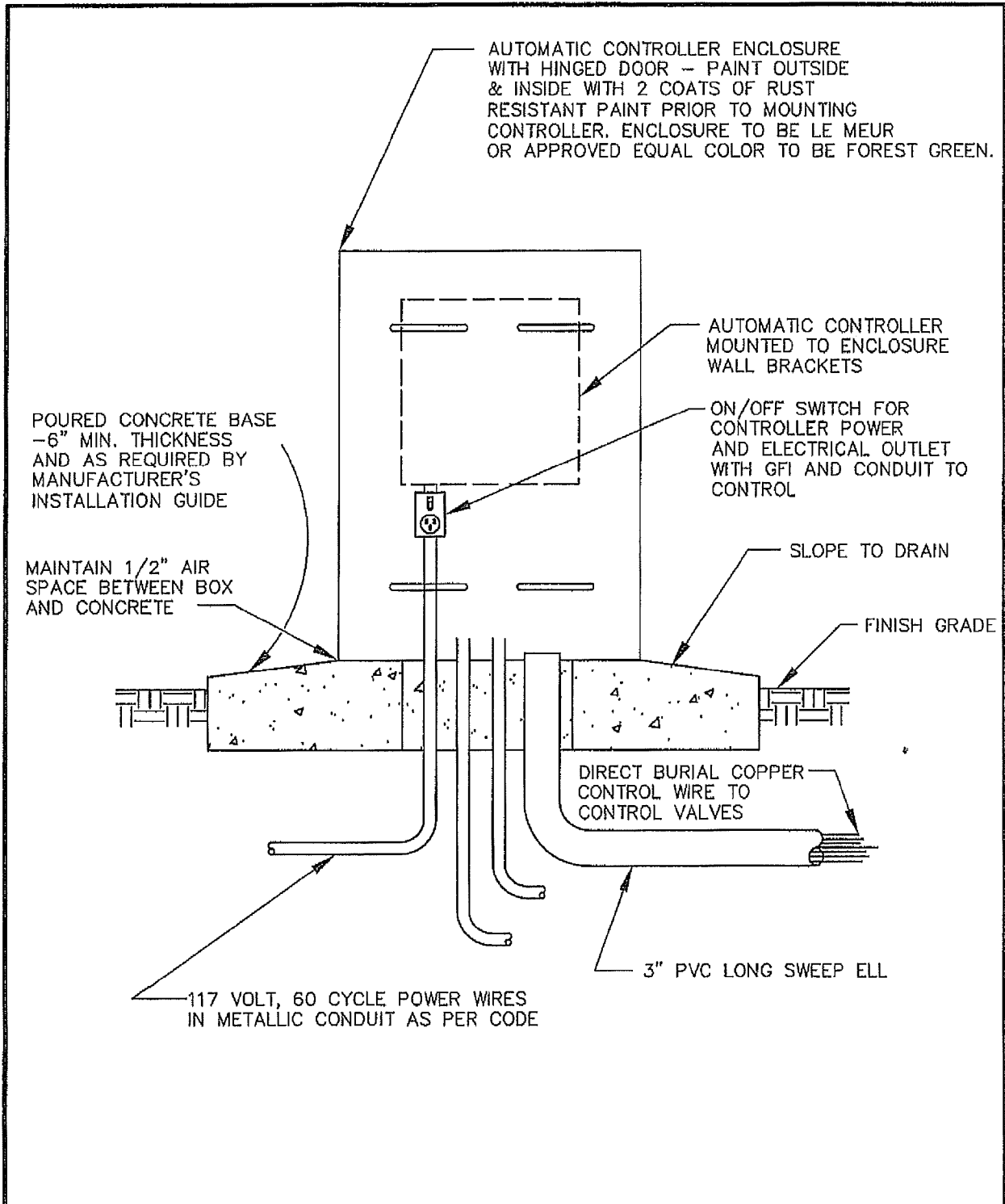
CITY OF LANCASTER

APPROVED BY:

 REVISED BY:

**ENCLOSED
 ELECTRICAL
 SERVICE**

**STANDARD
 DETAIL
 101**



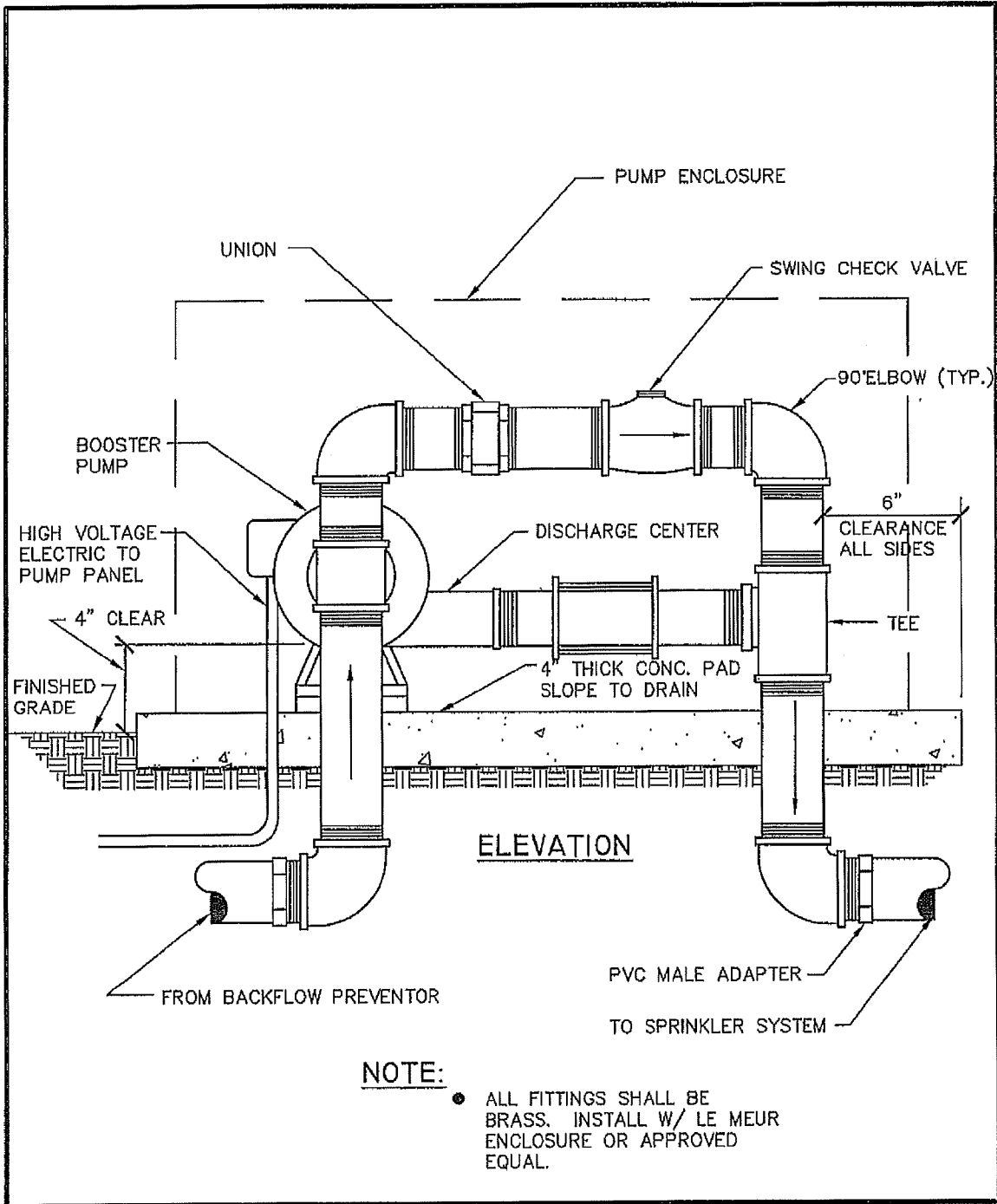
CITY OF LANCASTER

APPROVED BY:

REVISED BY:

**AUTOMATIC
CONTROLLER
(W/ ENCLOSURE)**

**STANDARD
DETAIL
102**



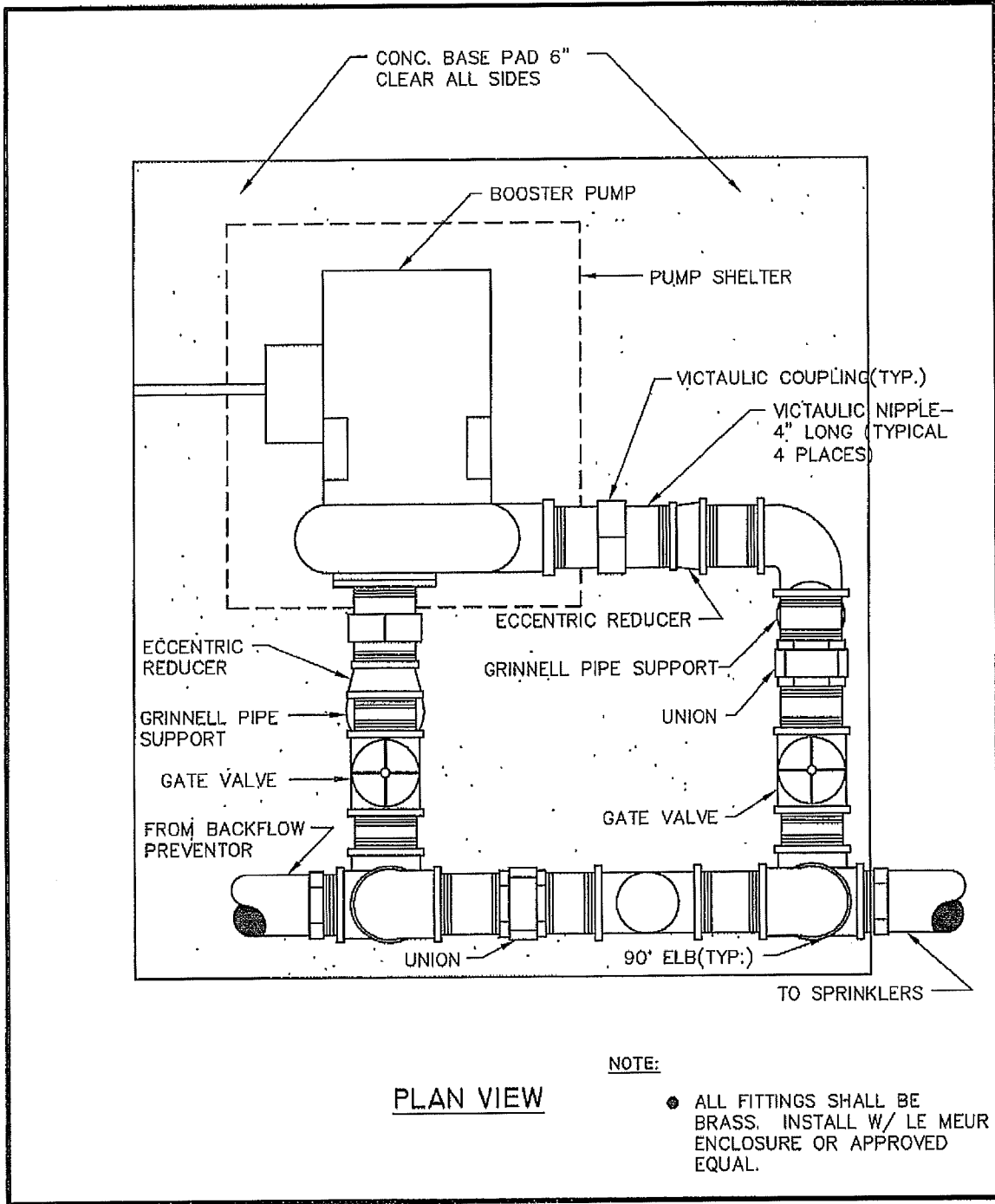
CITY OF LANCASTER

APPROVED BY: _____

REVISD BY: _____

**BOOSTER PUMP
(ELEVATION)**

**STANDARD
DETAIL
103-1**



PLAN VIEW

NOTE:

- ALL FITTINGS SHALL BE BRASS. INSTALL W/ LE MEUR ENCLOSURE OR APPROVED EQUAL.

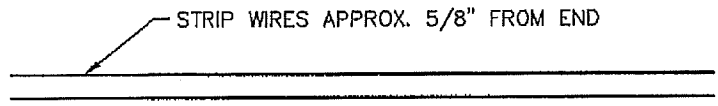
CITY OF LANCASTER

APPROVED BY:

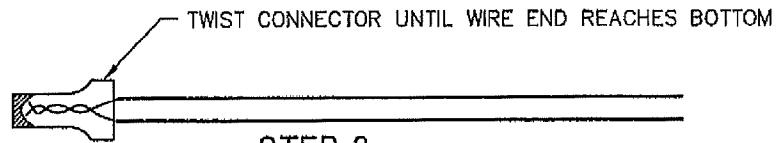
RECOMMENDED BY:

**BOOSTER PUMP
(PLAN VIEW)**

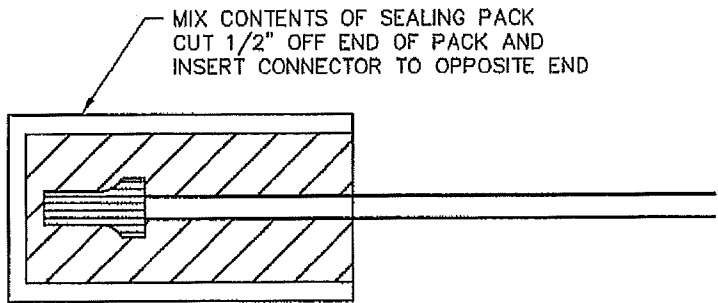
**STANDARD
DETAIL
103-2**



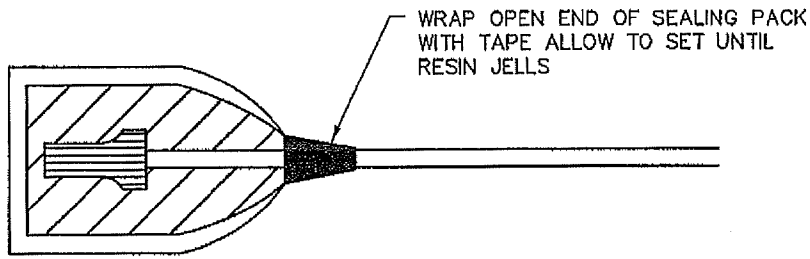
STEP 1



STEP 2



STEP 3



STEP 4

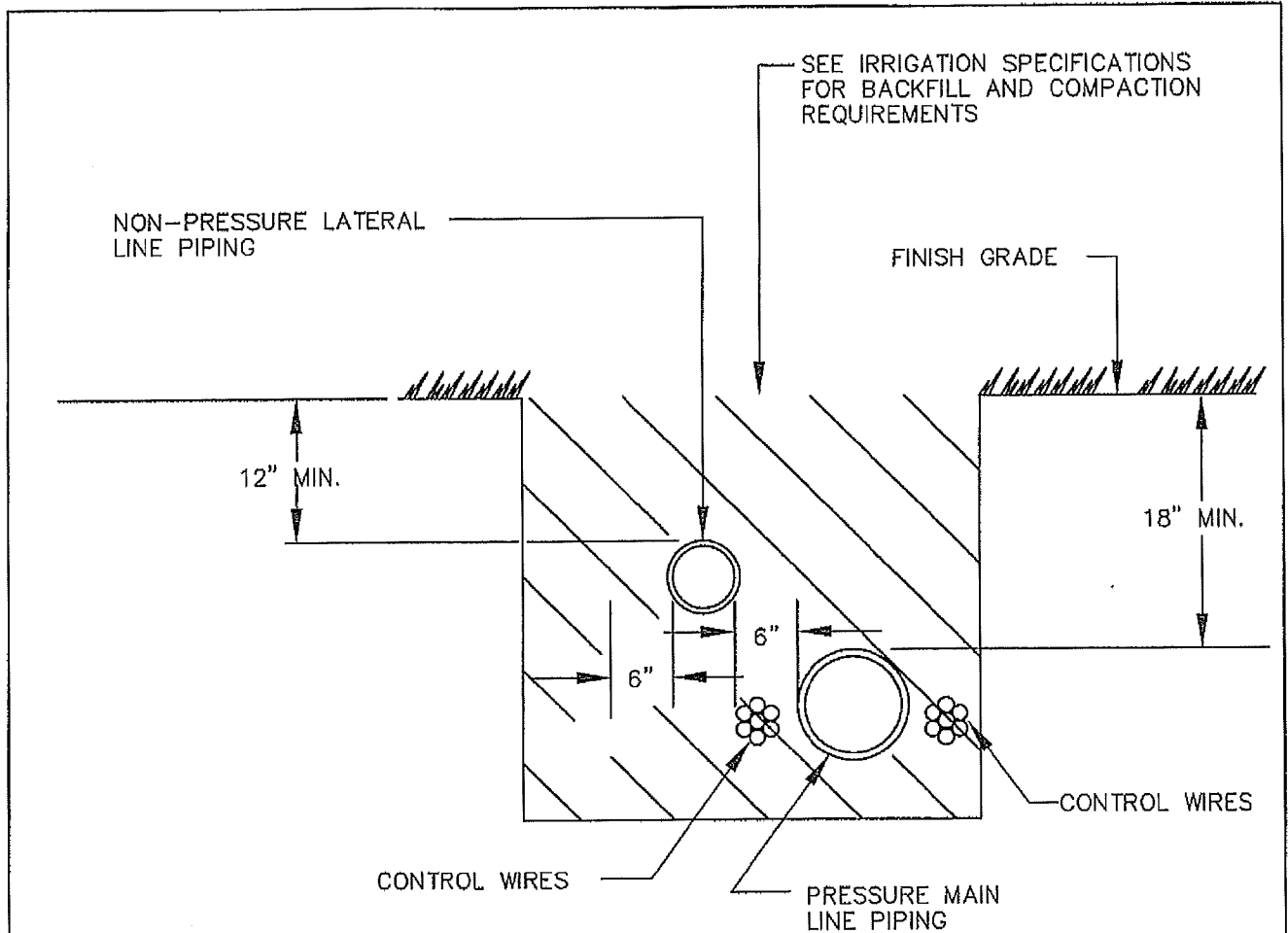
CITY OF LANCASTER

APPROVED BY:

 REVISED BY:

WIRE CONNECTOR

**STANDARD
 DETAIL
 104**



NOTES:

- PROVIDE 2" OF CLEAN BACKFILL UNDER ALL PIPING
- NO OTHER TRADES (ELECT., LIGHTING) ALLOWED TO USE SAME TRENCH AS IRRIGATION PIPE.
- PROVIDE 24" COVER FOR DIRECT BURIAL CABLE
- PROVIDE P.V.C. SCH.40 SLEEVES FOR ALL WIRING & PIPING UNDER PAVING
- NO STAKING (VERTICALLY) OF PIPES IN SAME TRENCH

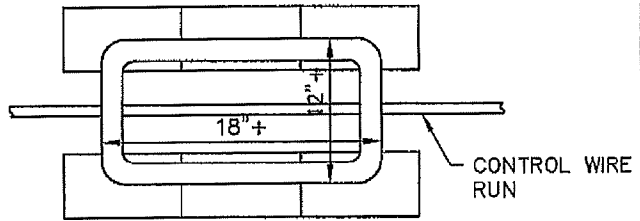
CITY OF LANCASTER

APPROVED BY:

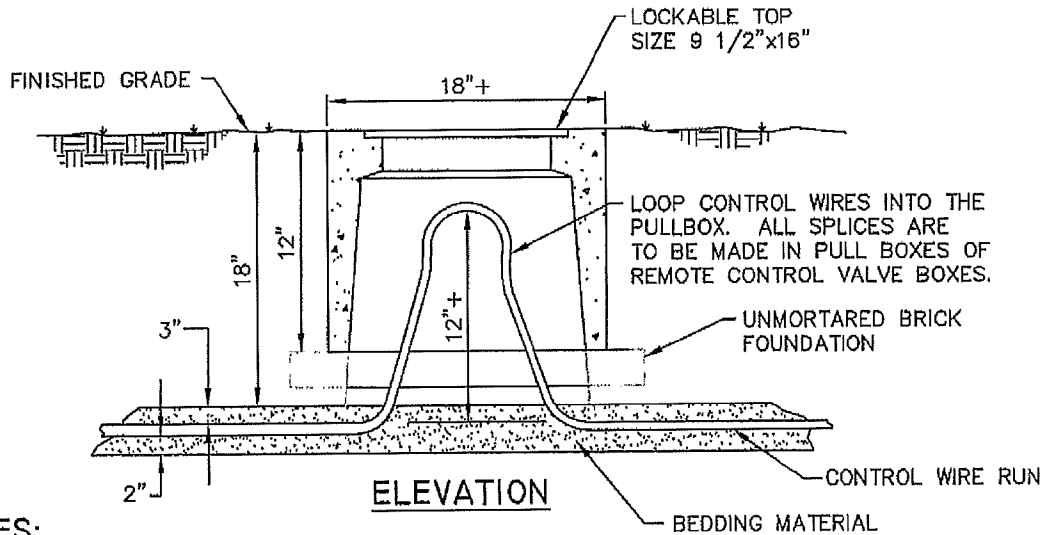
 RECOMMENDED BY:

TRENCHING

**STANDARD
 DETAIL
 105**



PLAN VIEW



ELEVATION

NOTES:

- INSTALL PULL BOXES AS SHOWN ON PLANS.
- AT JUNCTIONS WHERE RUNS COMBINE, SPLICE COMMON GROUND IN PULLBOX.
- PULLBOX COVER SHALL BE PERMANENTLY MARKED "ELECTRIC".
- CONDUCTORS FOR EACH CONTROLLER CLOCK SHALL BE HARNESSSED SEPARATELY AND AT SUFFICIENT INTERVALS TO MAINTAIN A DEFINITE BUNDLE.
- ALL SPLICES AND SPARE WIRE ENDS SHALL BE MADE WITH A PROPERLY SET MECHANICAL SPLICE CONNECTOR ENTIRELY ENCLOSED IN SELF-CURING EPOXY RESIN AND SHALL BE COMPLETELY WATER-PROOF.

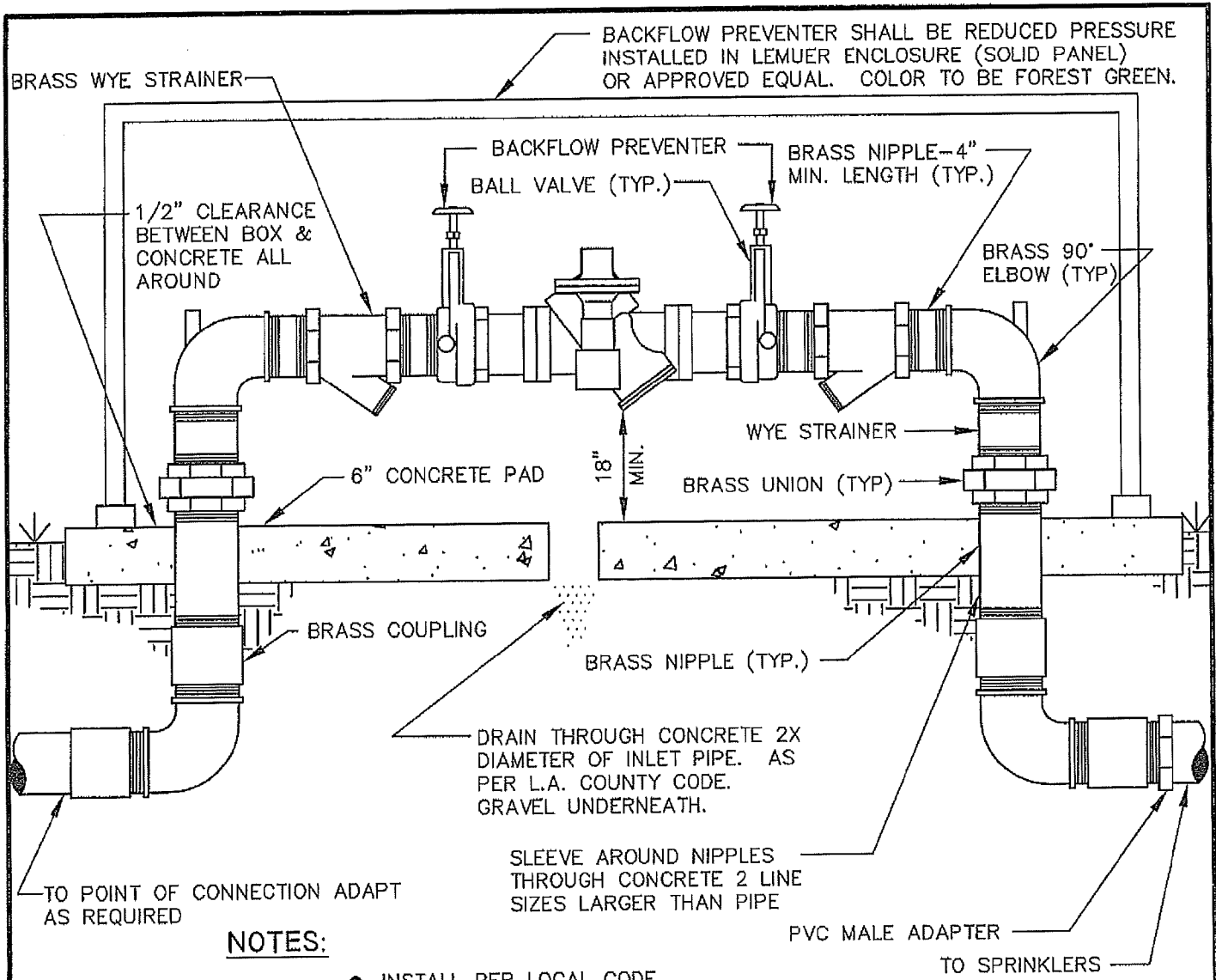
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

ELECTRIC PULL BOX

**STANDARD
DETAIL
107**



NOTES:

- INSTALL PER LOCAL CODE.
- ALL BACKFLOW PREVENTERS SHALL BE WINTERIZED / WRAPPED P-10 PROTECTION (TYP.) ALL VALVES SHALL BE "BALL TYPE" (TYP.)
- USE FIBERGLASS INSULATION TAPE
- CELOTEX OR EQUAL 1" INSULATION ATTACHED TO INSIDE WALL & CEILING WITH ADHESIVE

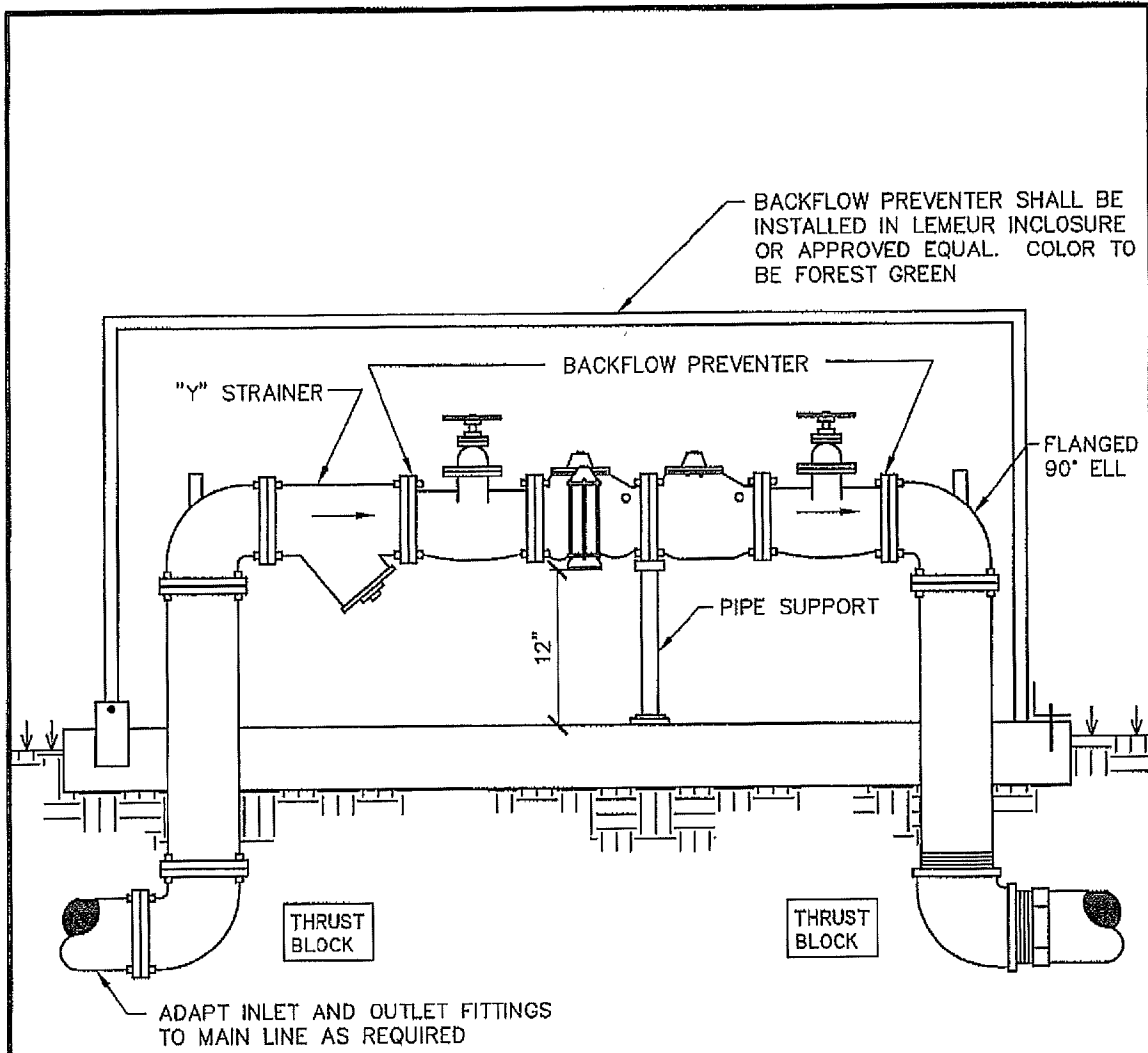
CITY OF LANCASTER

APPROVED BY:

REVISED BY:

**BACKFLOW PREVENTER
2" AND SMALLER**

**STANDARD
DETAIL
108**



NOTES:

- INSTALL PER LOCAL CODE
- ALL BACKFLOW PREVENTERS SHALL BE WINTERIZED/Wrapped R-10 PROTECTION (TYP.) ALL VALVES SHALL BE 'BALL TYPE' 2" & SMALLER RESILIENT SEAT OR WEDGE FOR 2 1/2" & LARGER.
- FITTING OR "T" REDUCED TO 1/2" THREADED FOR PRESSURE CHECK (TYP.)
- THRUST BLOCKS AS REQUIRED IN SECTION II.C.6

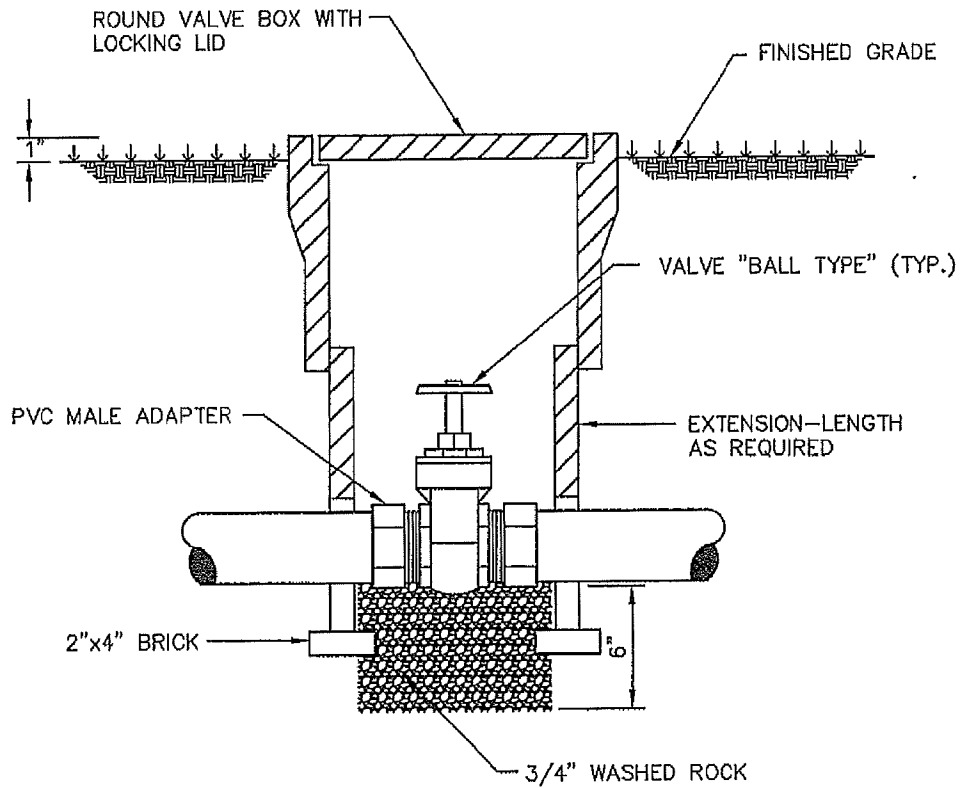
CITY OF LANCASTER

APPROVED BY:

 RECOMMENDED BY:

**BACKFLOW
 PREVENTER
 2 1/2" AND LARGER**

**STANDARD
 DETAIL
 109**



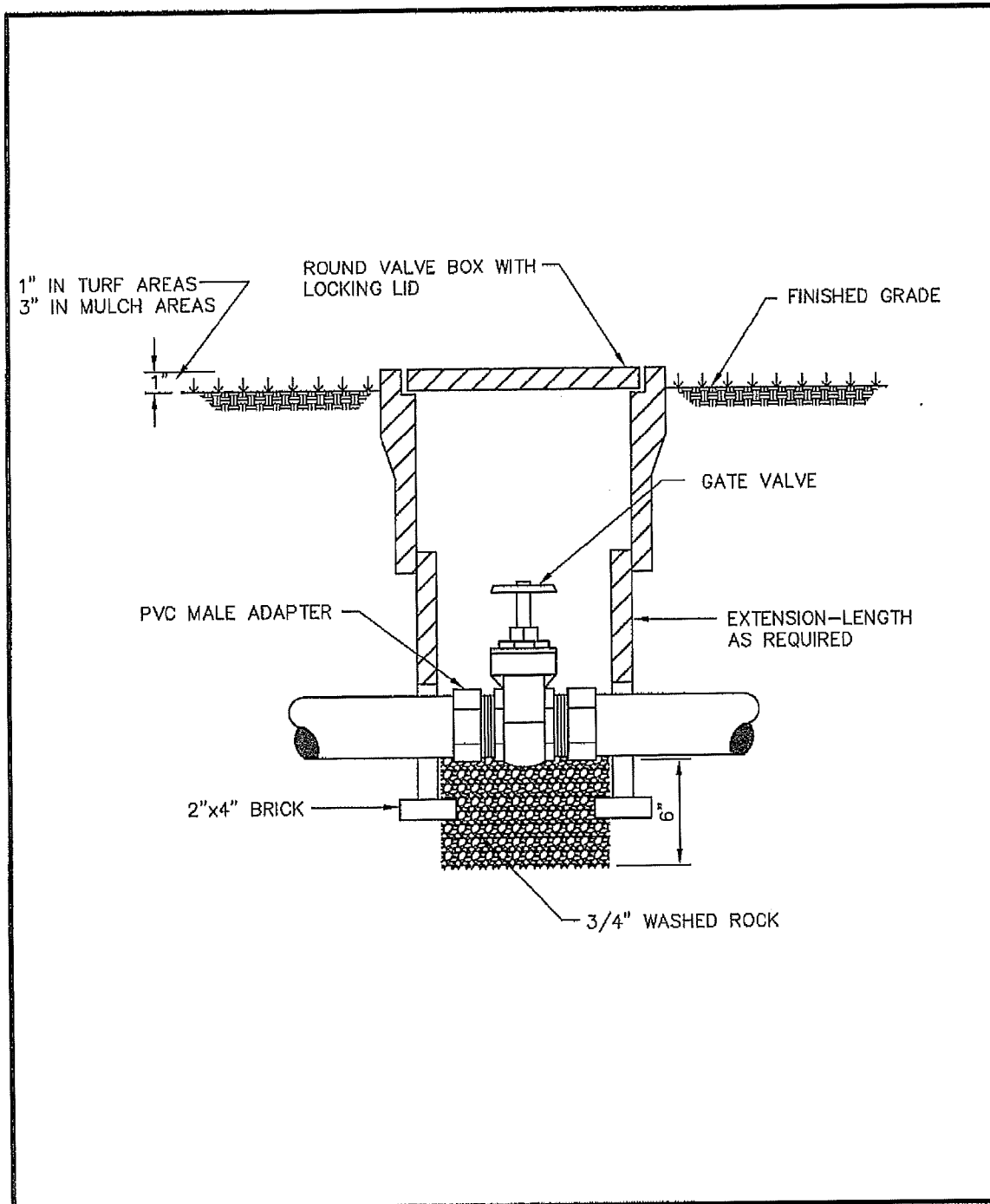
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

BALL VALVE
2" AND SMALLER

STANDARD
DETAIL
110A

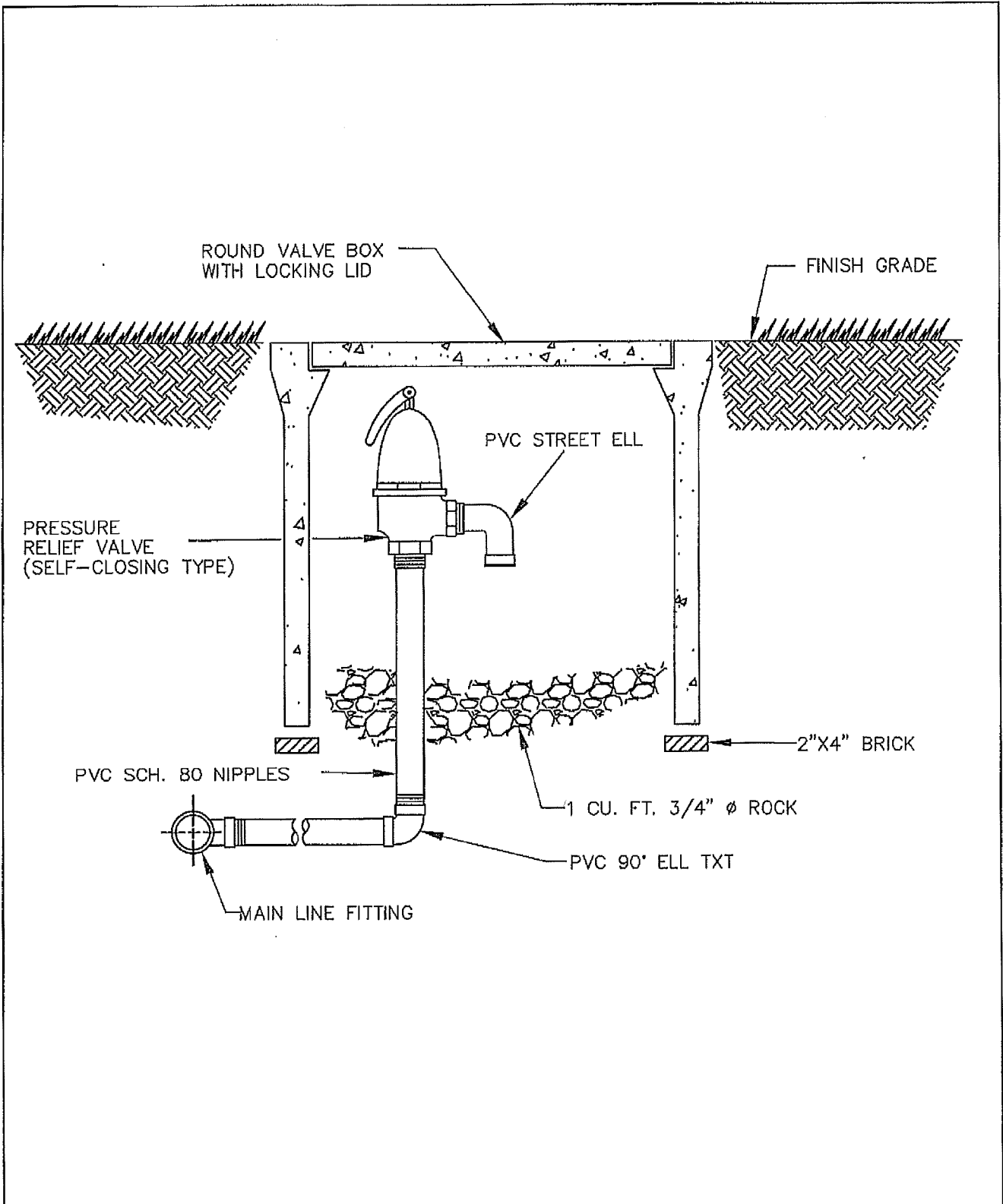


CITY OF LANCASTER

APPROVED BY: _____
 RECOMMENDED BY: _____

**GATE VALVE
 2 1/2" AND LARGER**

**STANDARD
 DETAIL
 110B**



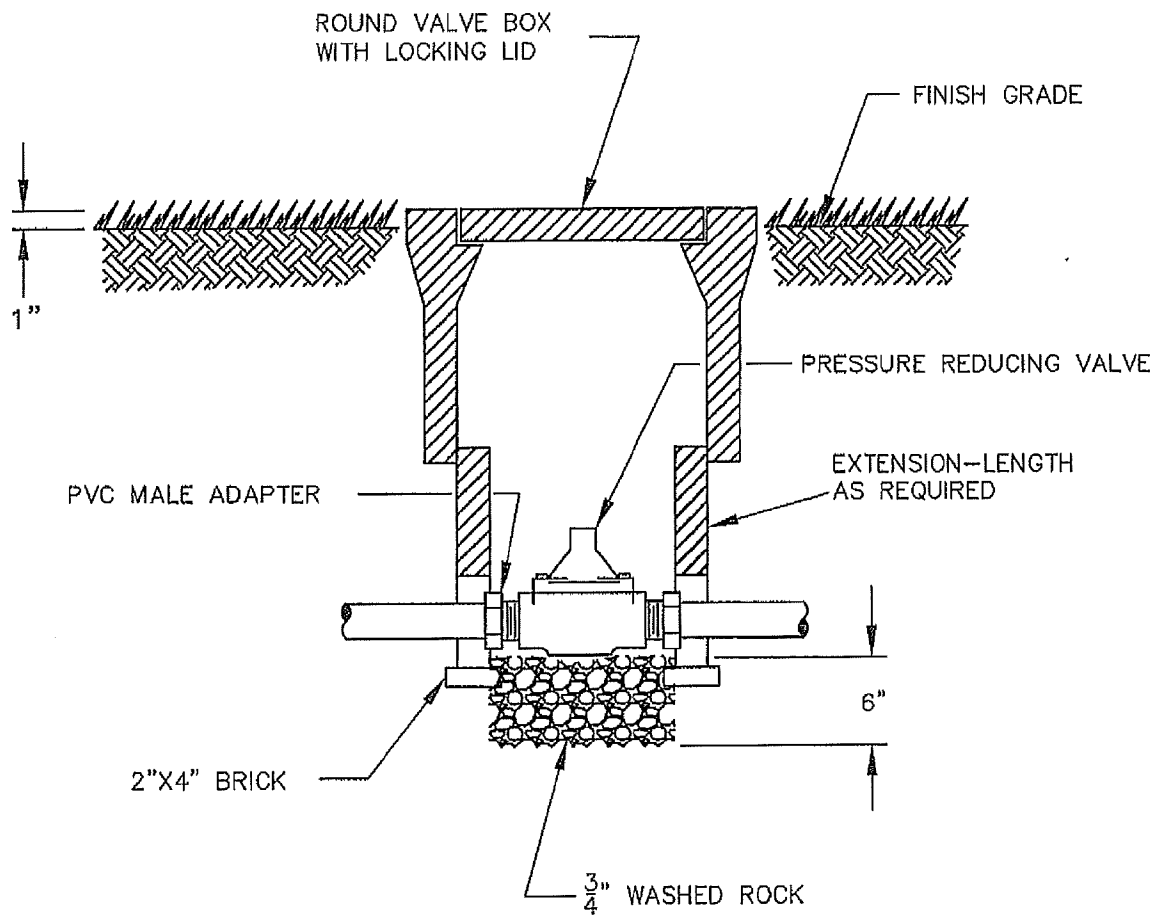
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

PRESSURE RELIEF VALVE

STANDARD DETAIL III



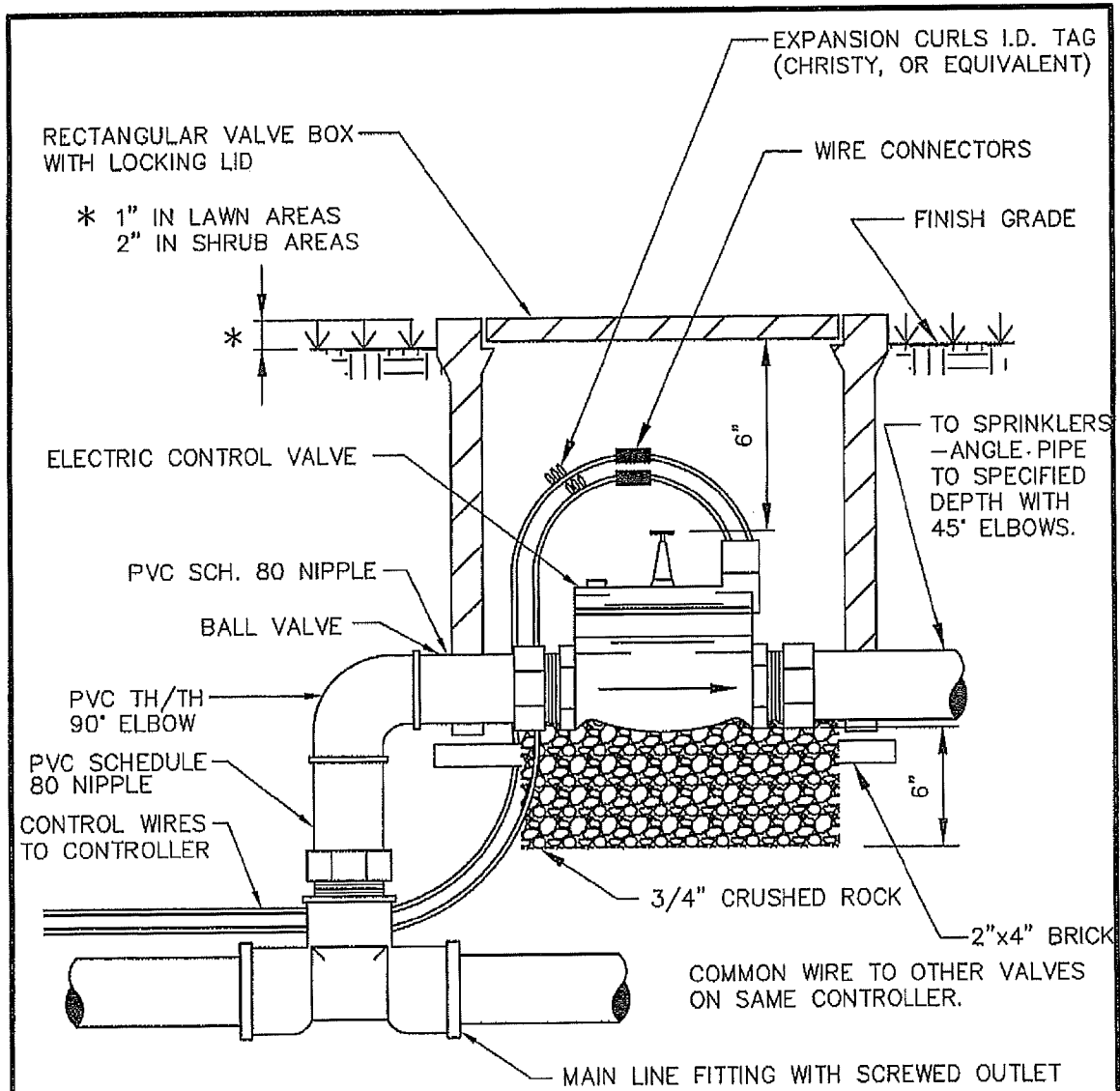
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

**PRESSURE
REDUCING VALVE**

**STANDARD
DETAIL
112**



NOTES:

- ALL SPLICES ABOVE GRADE IN BOX. LOOP COMMON ABOVE VALVE.
- ADD A BALL VALVE SHUT OFF BEFORE EACH VALVE IN VALVE BOX.

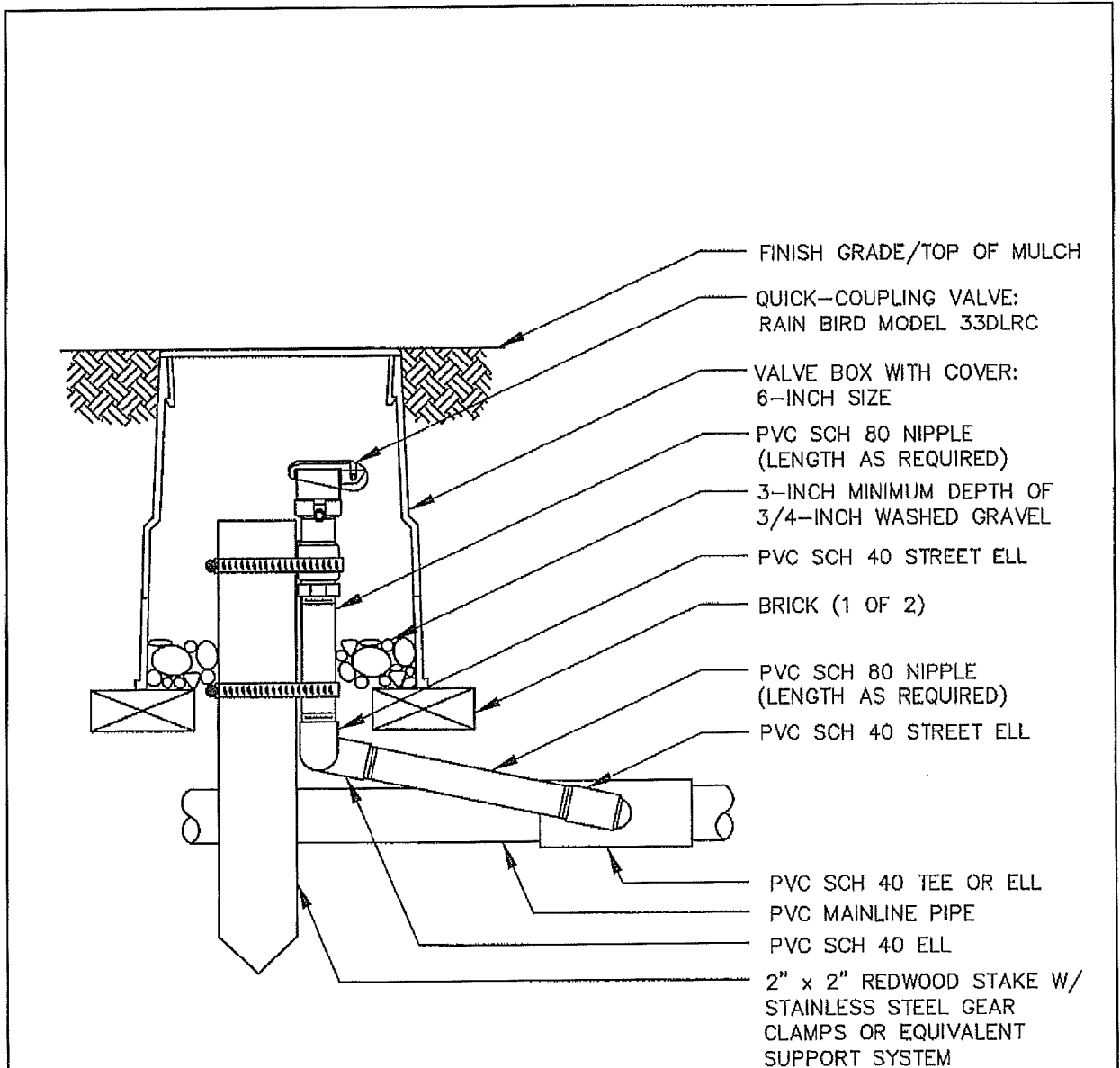
CITY OF LANCASTER

APPROVED BY: _____

 REVISED BY: _____

**ELECTRIC CONTROL
 VALVE**

**STANDARD
 DETAIL
 113**



NOTE:

- FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.

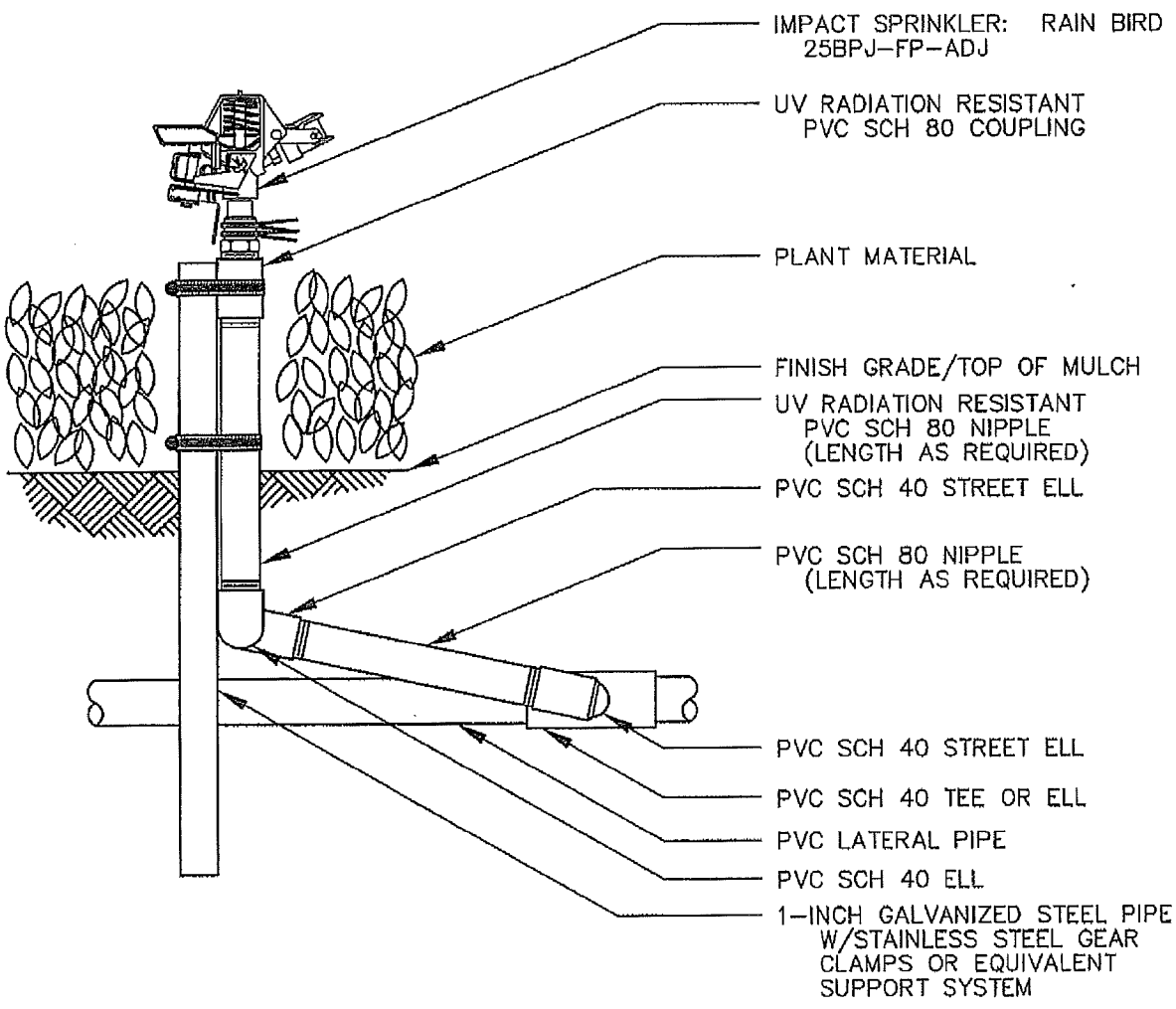
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

**QUICK
COUPLING VALVE**

**STANDARD
DETAIL
114**

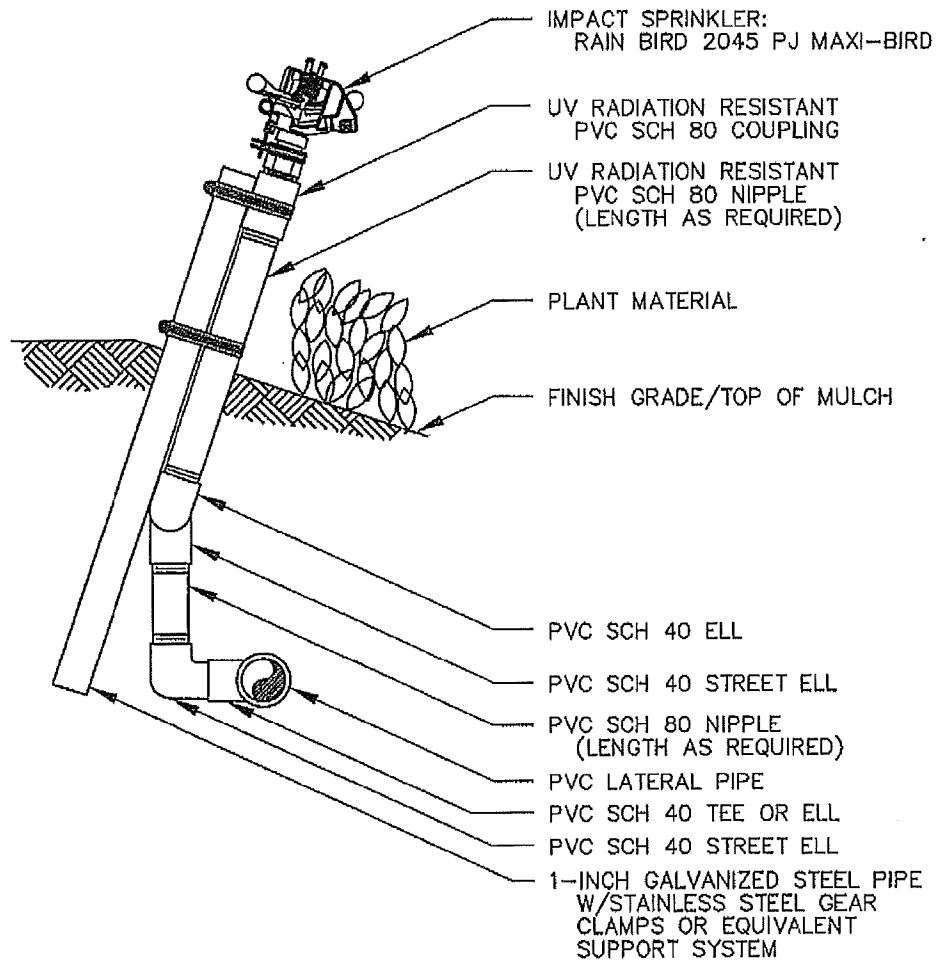


NOTE:

- A SWING PIPE ASSEMBLY MAY BE USED WITH FLOWS LESS THAN 4 GPM.

CITY OF LANCASTER

APPROVED BY:	<h2>IMPACT SPRINKLER</h2>	<h2>STANDARD DETAIL 116A</h2>
RECOMMENDED BY:		



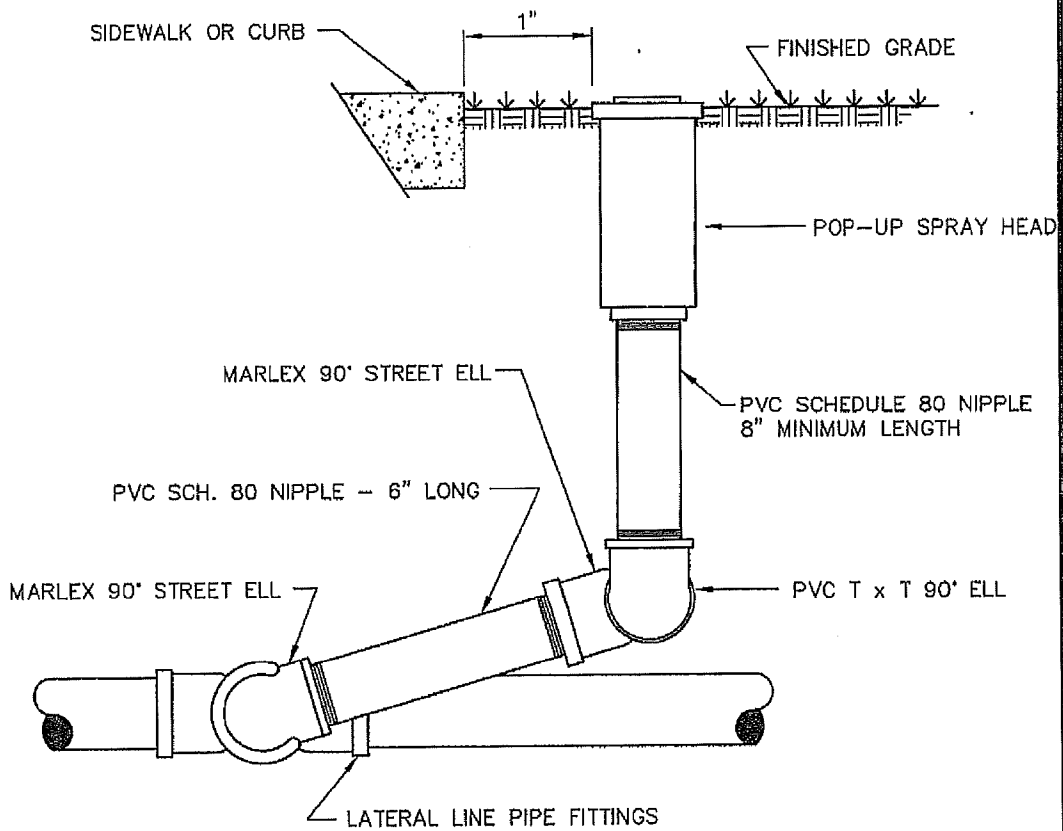
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

**IMPACT
SPRINKLER**

**STANDARD
DETAIL
116B**



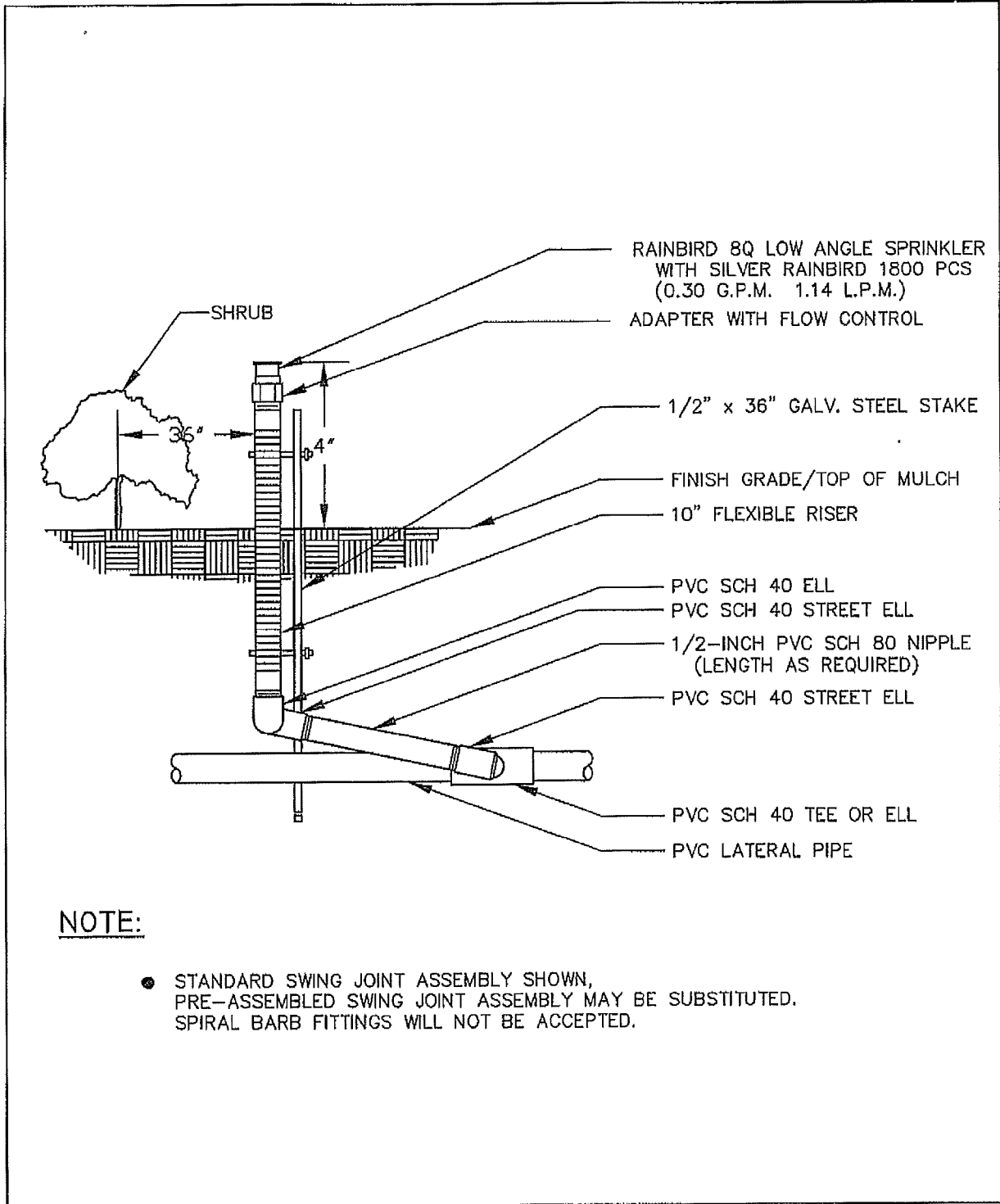
CITY OF LANCASTER

APPROVED BY:

 RECOMMENDED BY:

POP - UP
 LAWN HEAD

STANDARD
 DETAIL
 117



NOTE:

- STANDARD SWING JOINT ASSEMBLY SHOWN, PRE-ASSEMBLED SWING JOINT ASSEMBLY MAY BE SUBSTITUTED. SPIRAL BARB FITTINGS WILL NOT BE ACCEPTED.

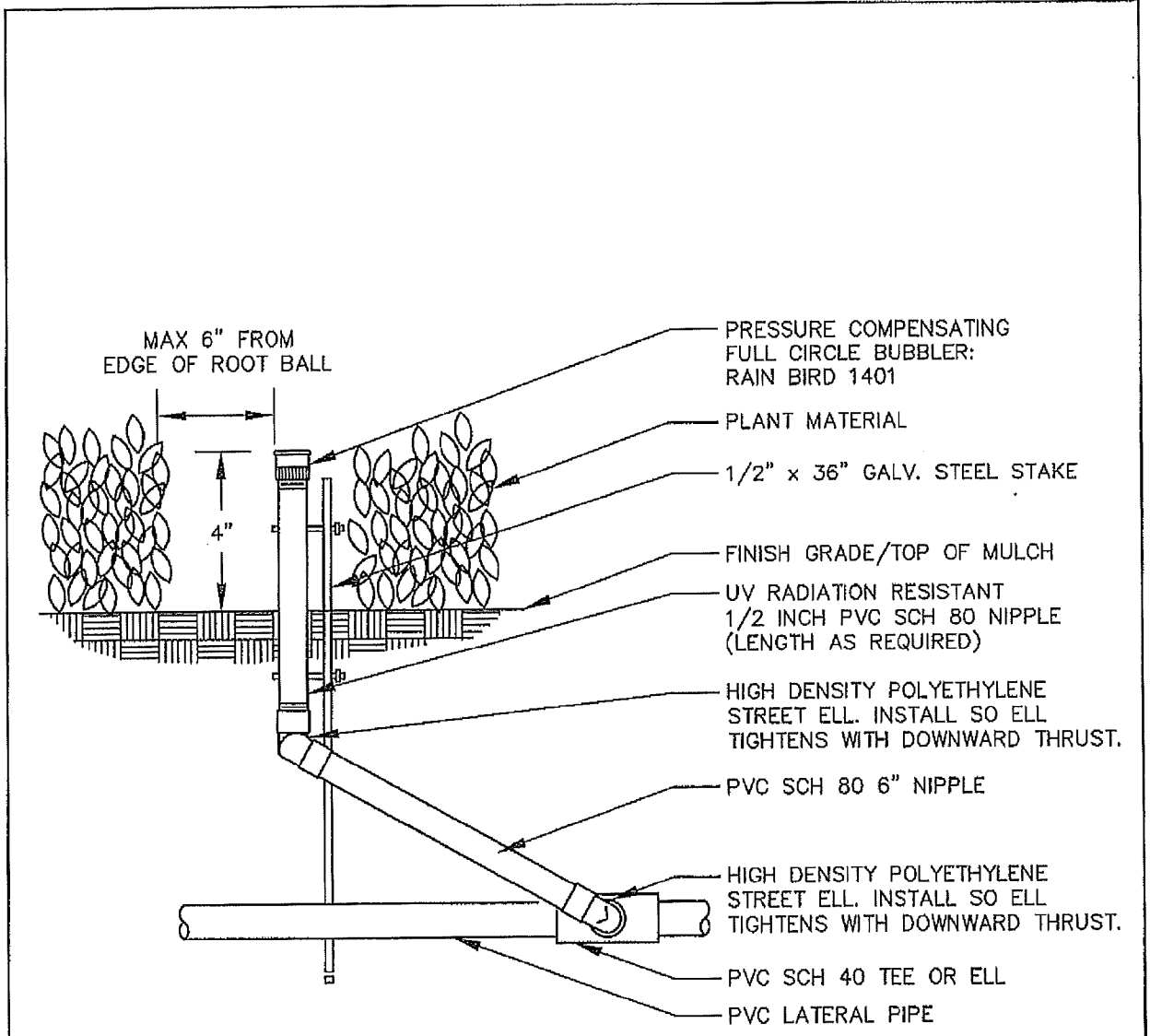
CITY OF LANCASTER

APPROVED BY:

 RECOMMENDED BY:

**SHRUB SPRAY
 ASSEMBLY**

**STANDARD
 DETAIL
 118A**



NOTE:

- STANDARD SWING JOINT ASSEMBLY SHOWN, PRE-ASSEMBLED SWING JOINT ASSEMBLY MAY BE SUBSTITUTED. SPIRAL BARB FITTINGS WILL NOT BE ACCEPTED.

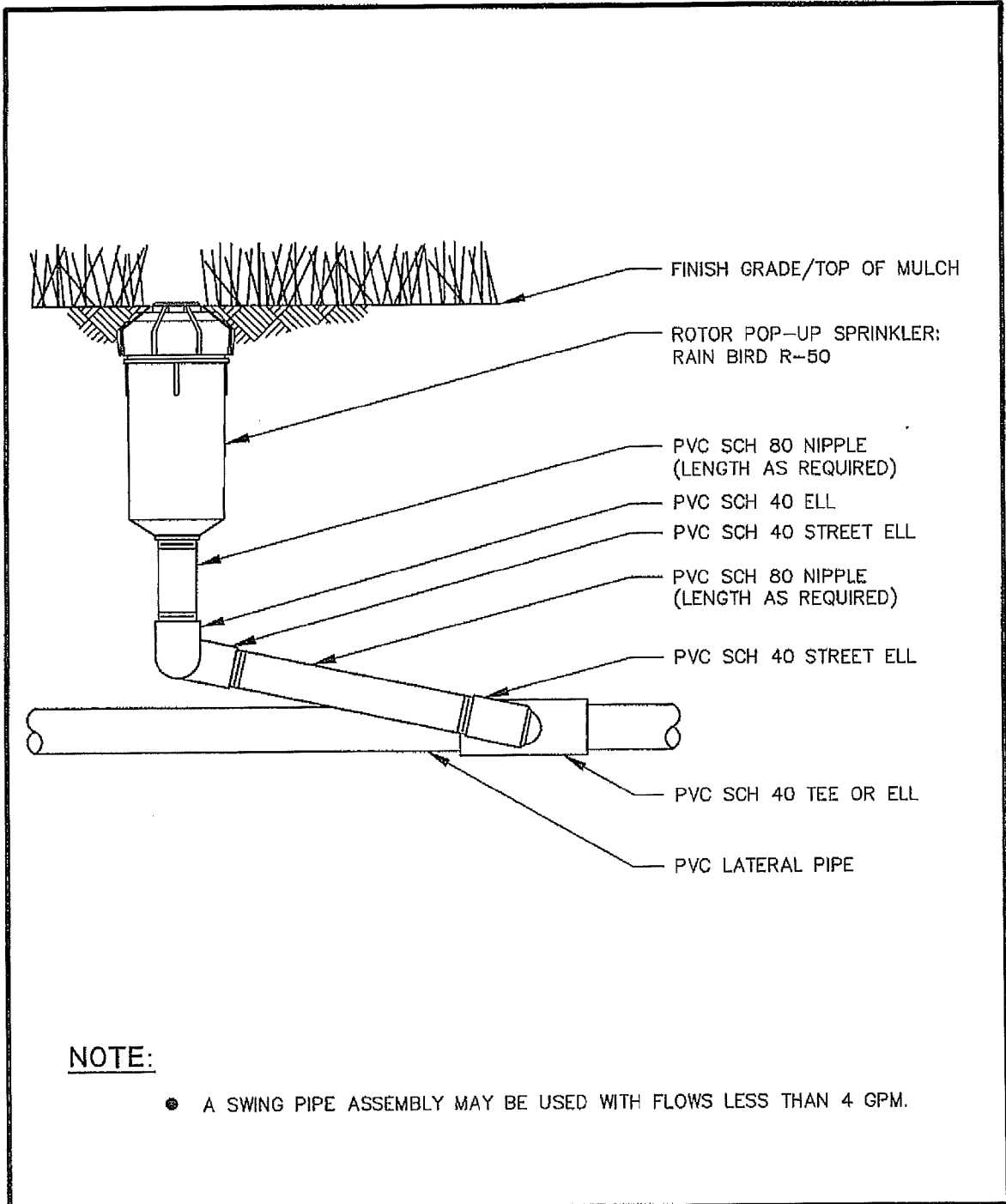
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

**SHRUB BUBBLER
ASSEMBLY**

**STANDARD
DETAIL
118B**



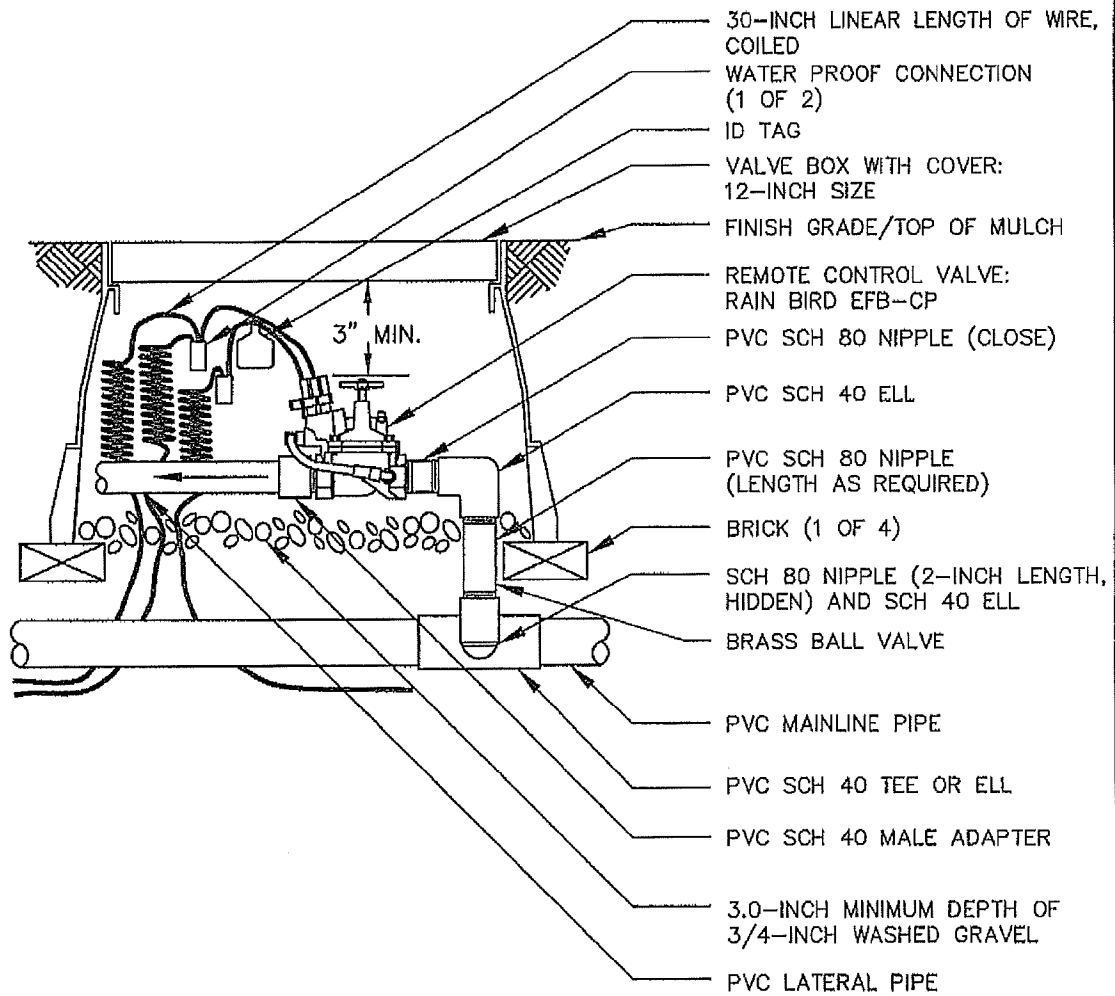
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

ROTOR POP-UP
SPRINKLER

STANDARD
DETAIL
120



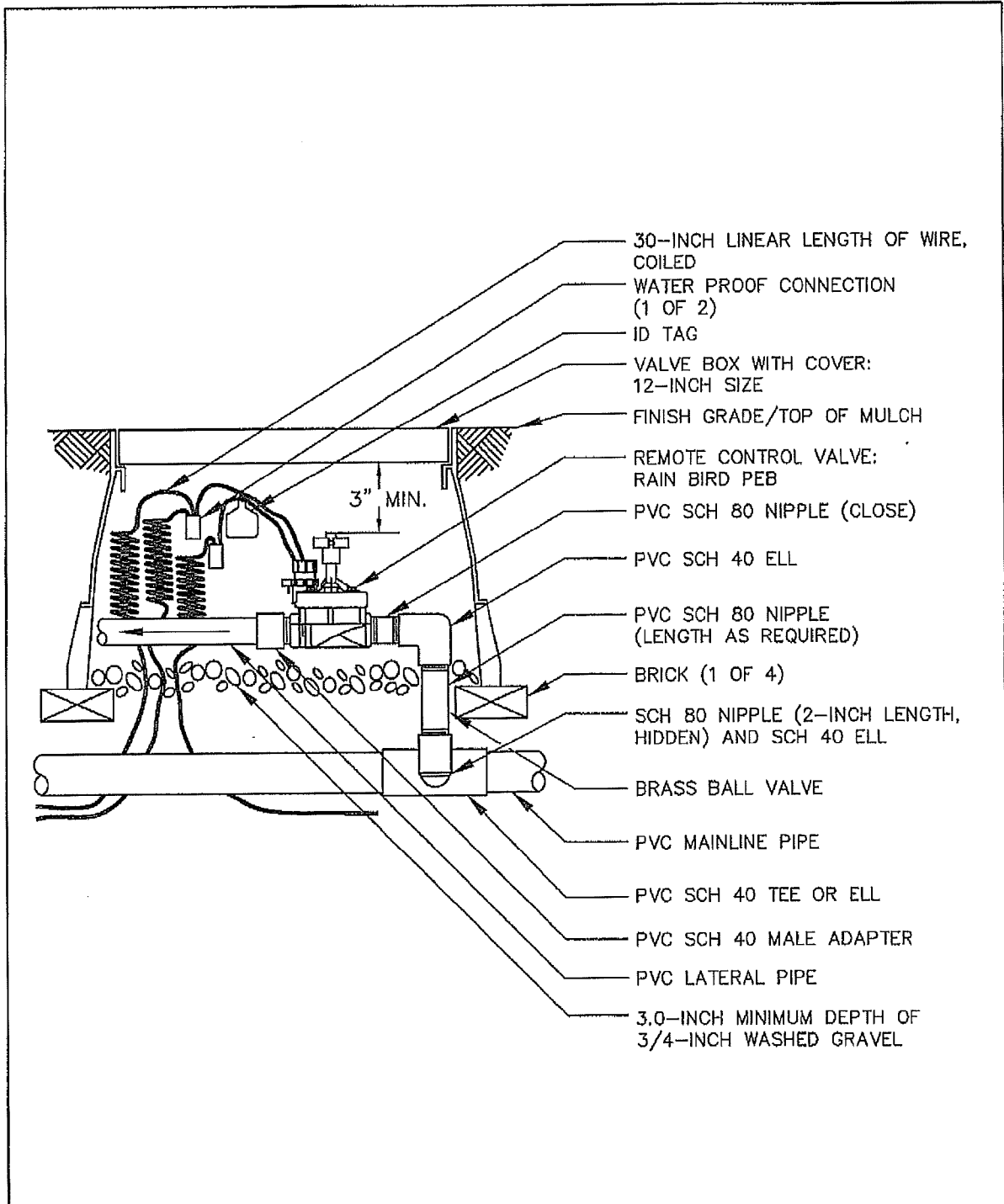
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

REMOTE
CONTROL VALVE

STANDARD
DETAIL
121A



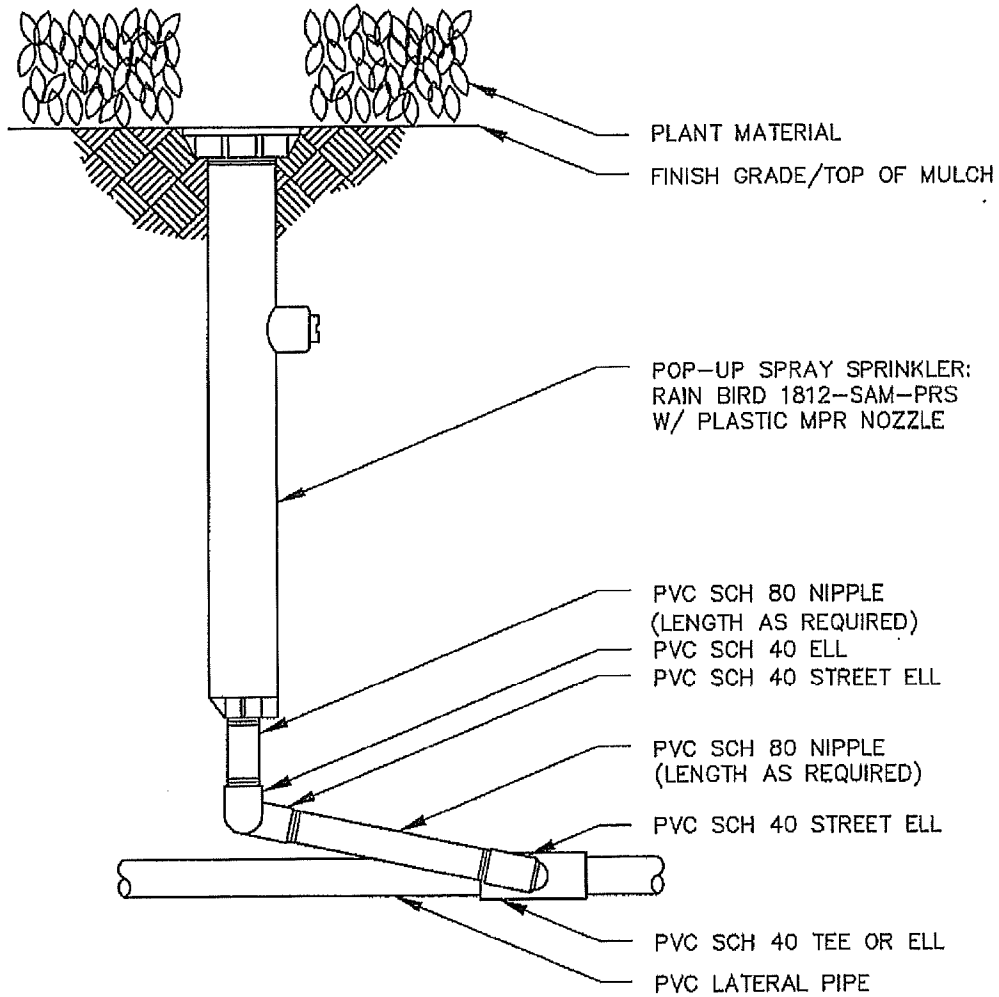
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

REMOTE CONTROL VALVE

STANDARD DETAIL 121B



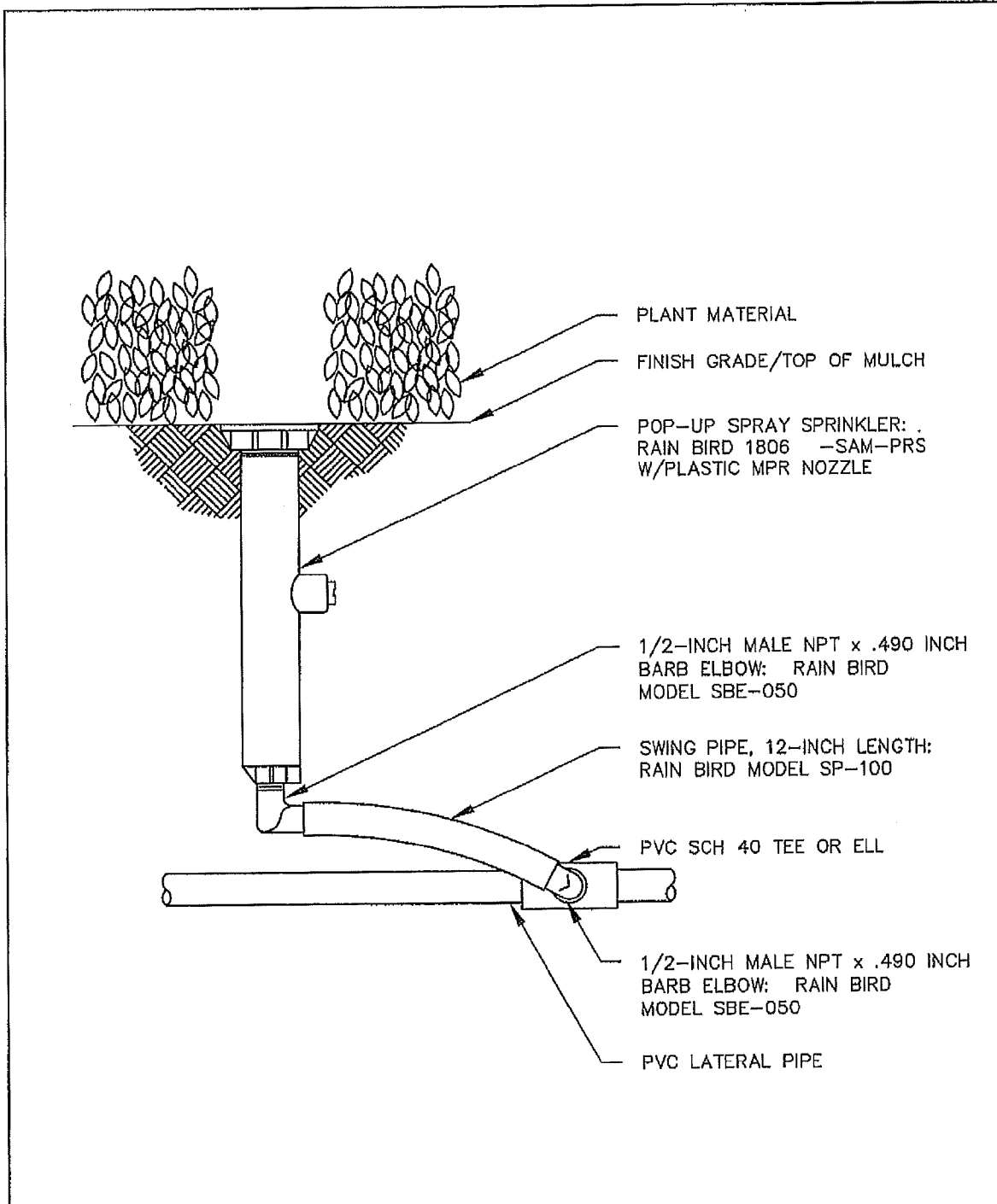
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

**POP-UP
SPRAY SPRINKLER**

**STANDARD
DETAIL
123A**



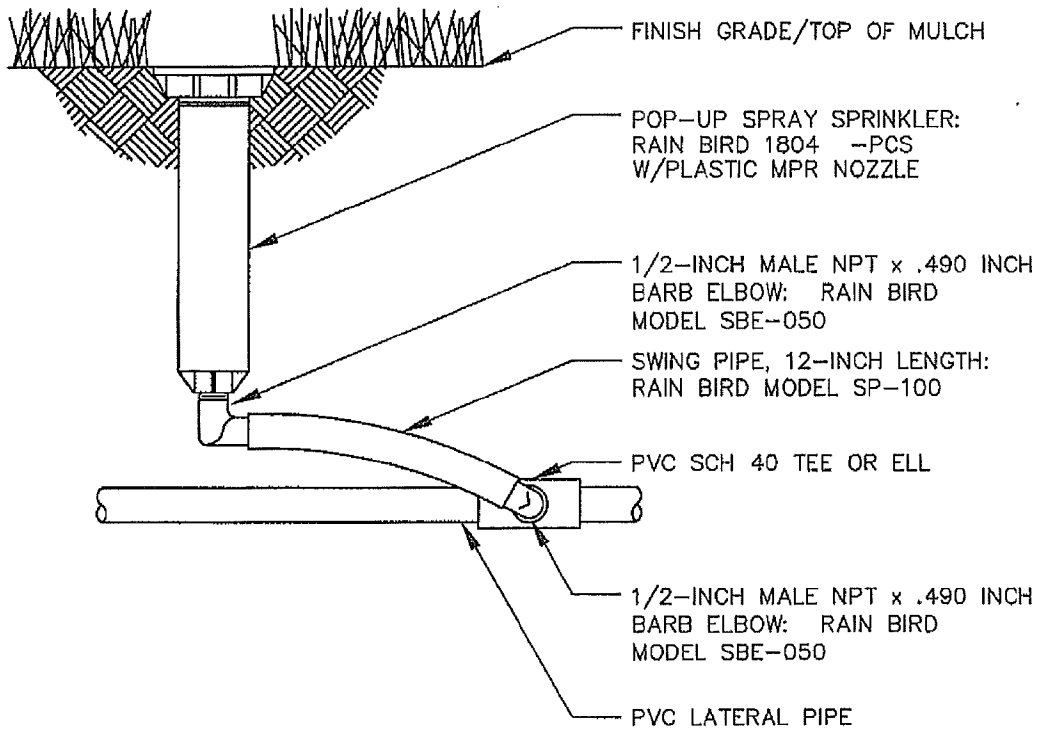
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

**POP-UP
SPRAY SPRINKLER**

**STANDARD
DETAIL
123B**



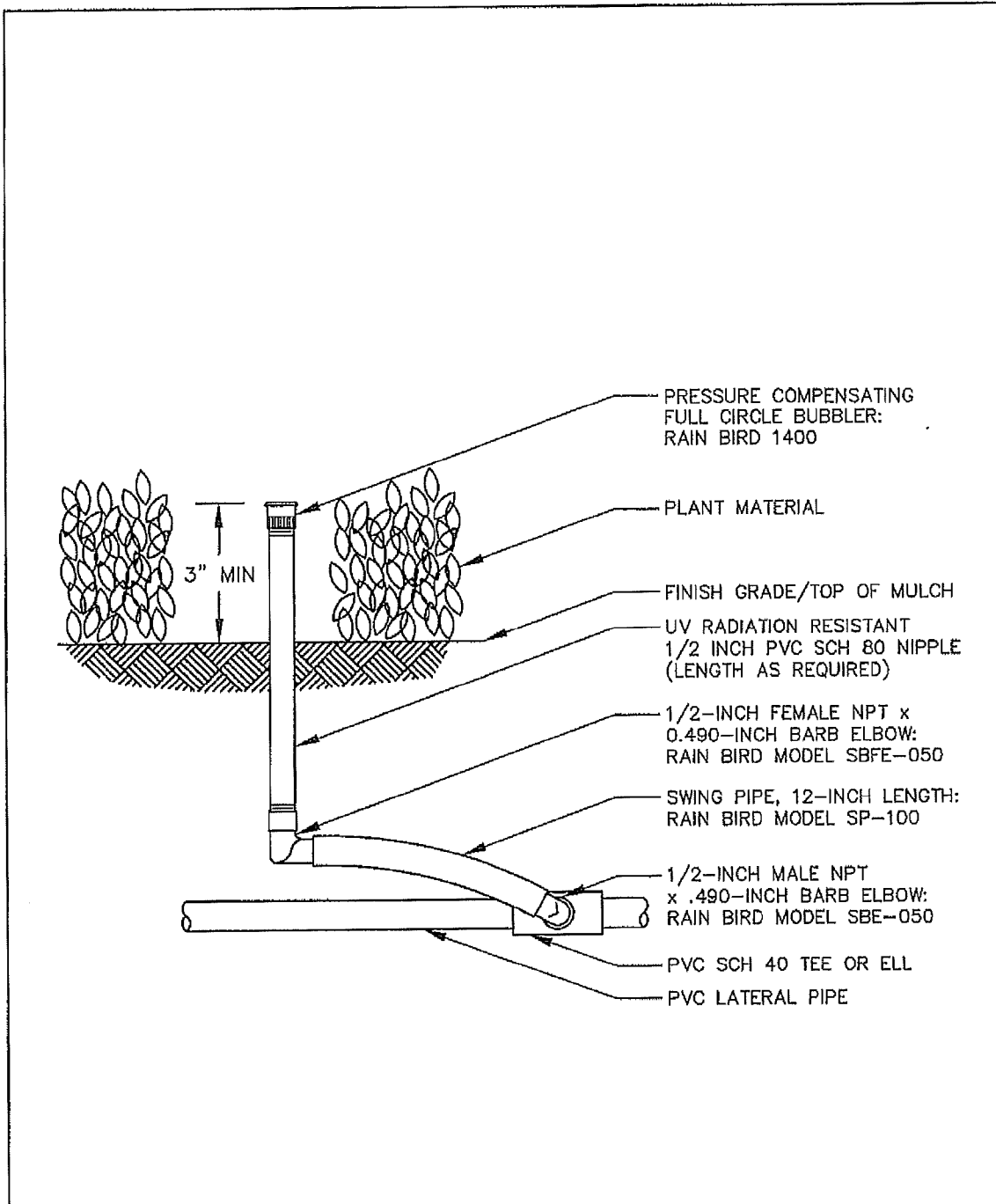
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

POP-UP
SPRAY SPRINKLER

STANDARD
DETAIL
123C



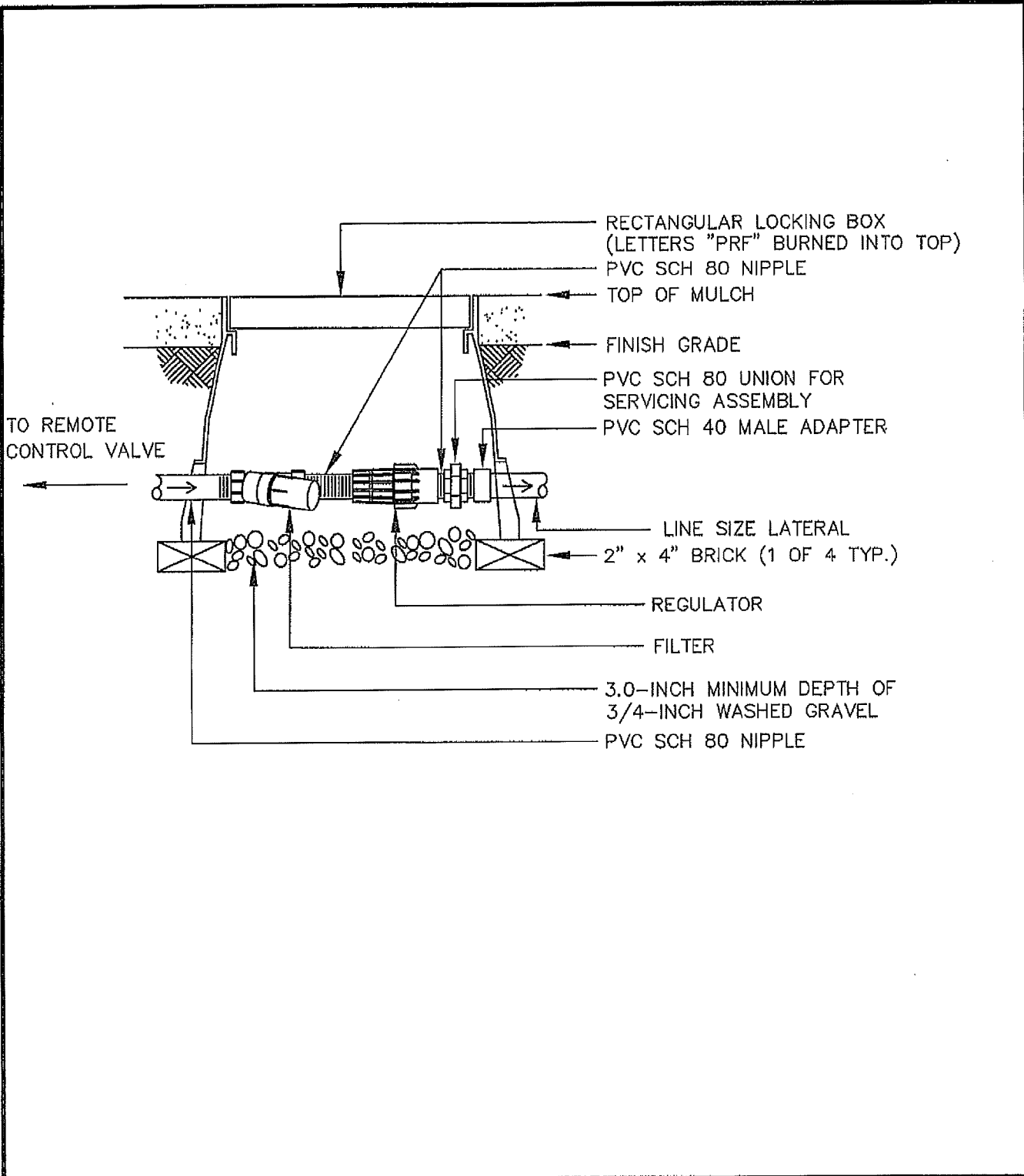
CITY OF LANCASTER

APPROVED BY:

 RECOMMENDED BY:

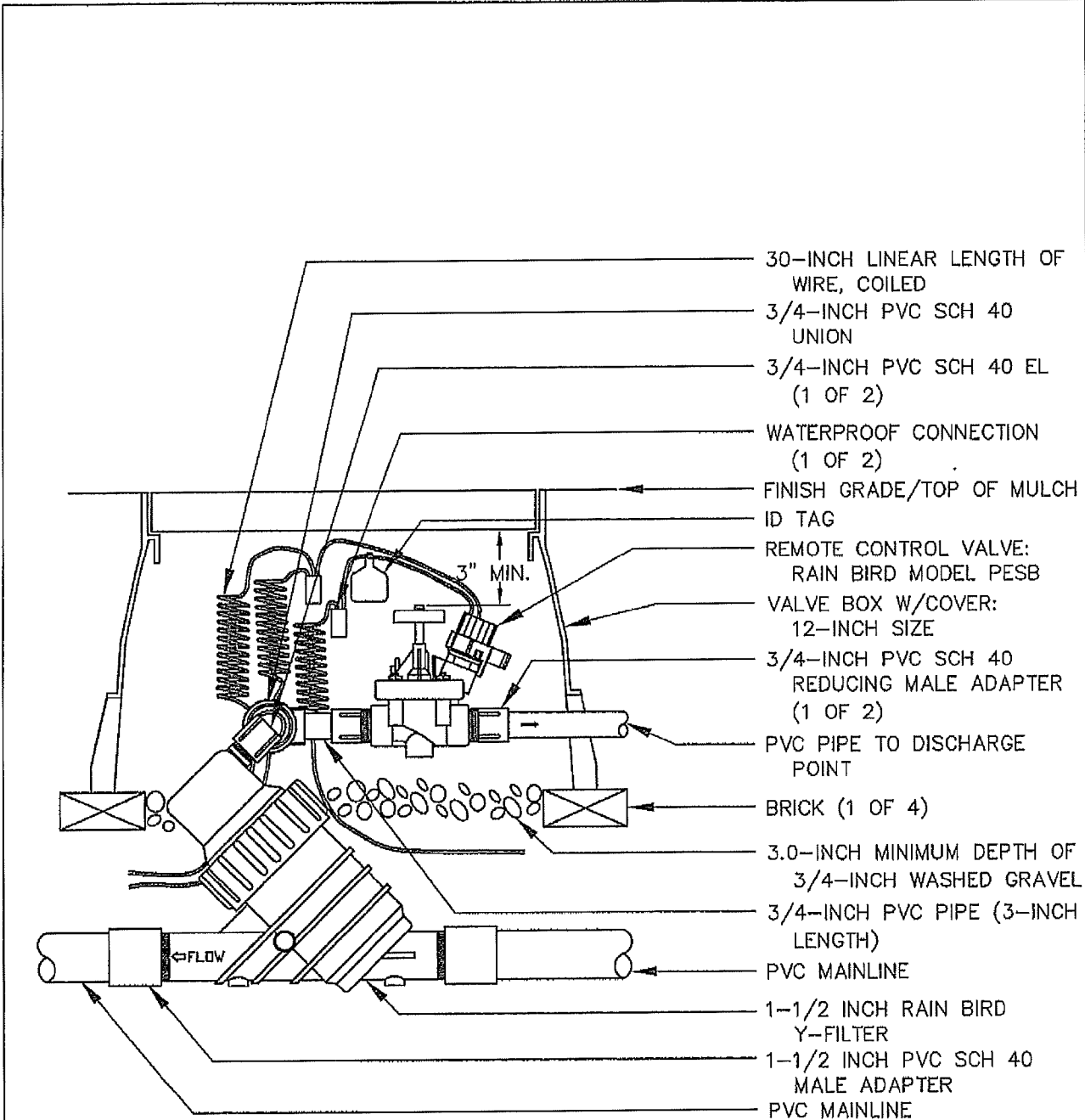
BUBBLER

**STANDARD
 DETAIL
 125**



CITY OF LANCASTER

APPROVED BY:	DRIP IRRIGATION: FILTER & PRESSURE REDUCER ASSEMBLY	STANDARD DETAIL 128-1
RECOMMENDED BY:		



- 30-INCH LINEAR LENGTH OF WIRE, COILED
- 3/4-INCH PVC SCH 40 UNION
- 3/4-INCH PVC SCH 40 EL (1 OF 2)
- WATERPROOF CONNECTION (1 OF 2)
- FINISH GRADE/TOP OF MULCH
- ID TAG
- REMOTE CONTROL VALVE: RAIN BIRD MODEL PESB
- VALVE BOX W/COVER: 12-INCH SIZE
- 3/4-INCH PVC SCH 40 REDUCING MALE ADAPTER (1 OF 2)
- PVC PIPE TO DISCHARGE POINT
- BRICK (1 OF 4)
- 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
- 3/4-INCH PVC PIPE (3-INCH LENGTH)
- PVC MAINLINE
- 1-1/2 INCH RAIN BIRD Y-FILTER
- 1-1/2 INCH PVC SCH 40 MALE ADAPTER
- PVC MAINLINE

NOTE:

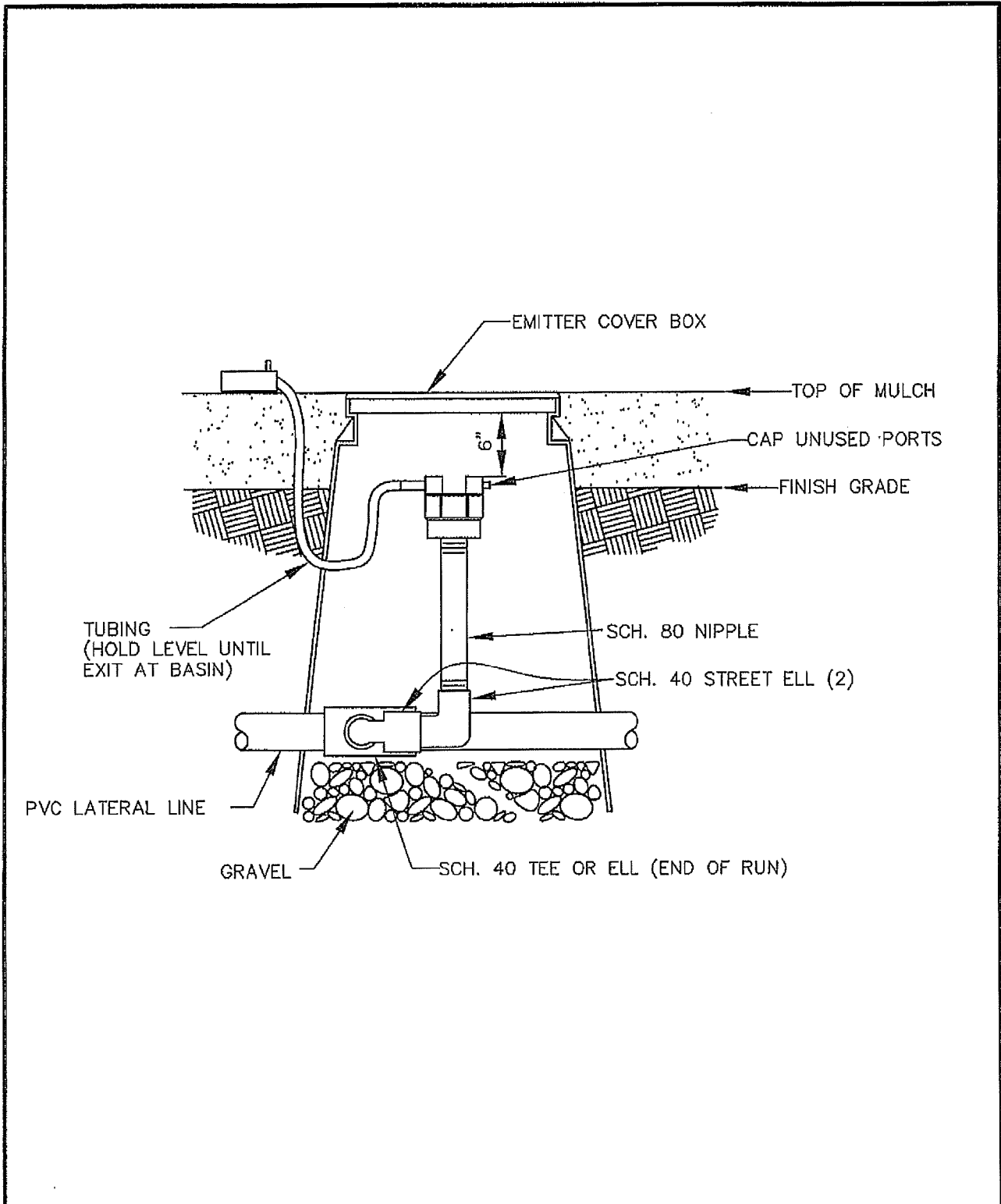
● AUTOMATIC FILTER KIT AF150-200 IS COMPRISED OF Y-FILTER, REMOTE CONTROL VALVE, 3/4-INCH UNION, 2 3/4-INCH ELLS, AND 1" x 3/4" REDUCING MALE ADAPTER.

CITY OF LANCASTER

APPROVED BY: _____
 RECOMMENDED BY: _____

**AUTOMATIC
 FILTER KIT**

**STANDARD
 DETAIL
 128-2**



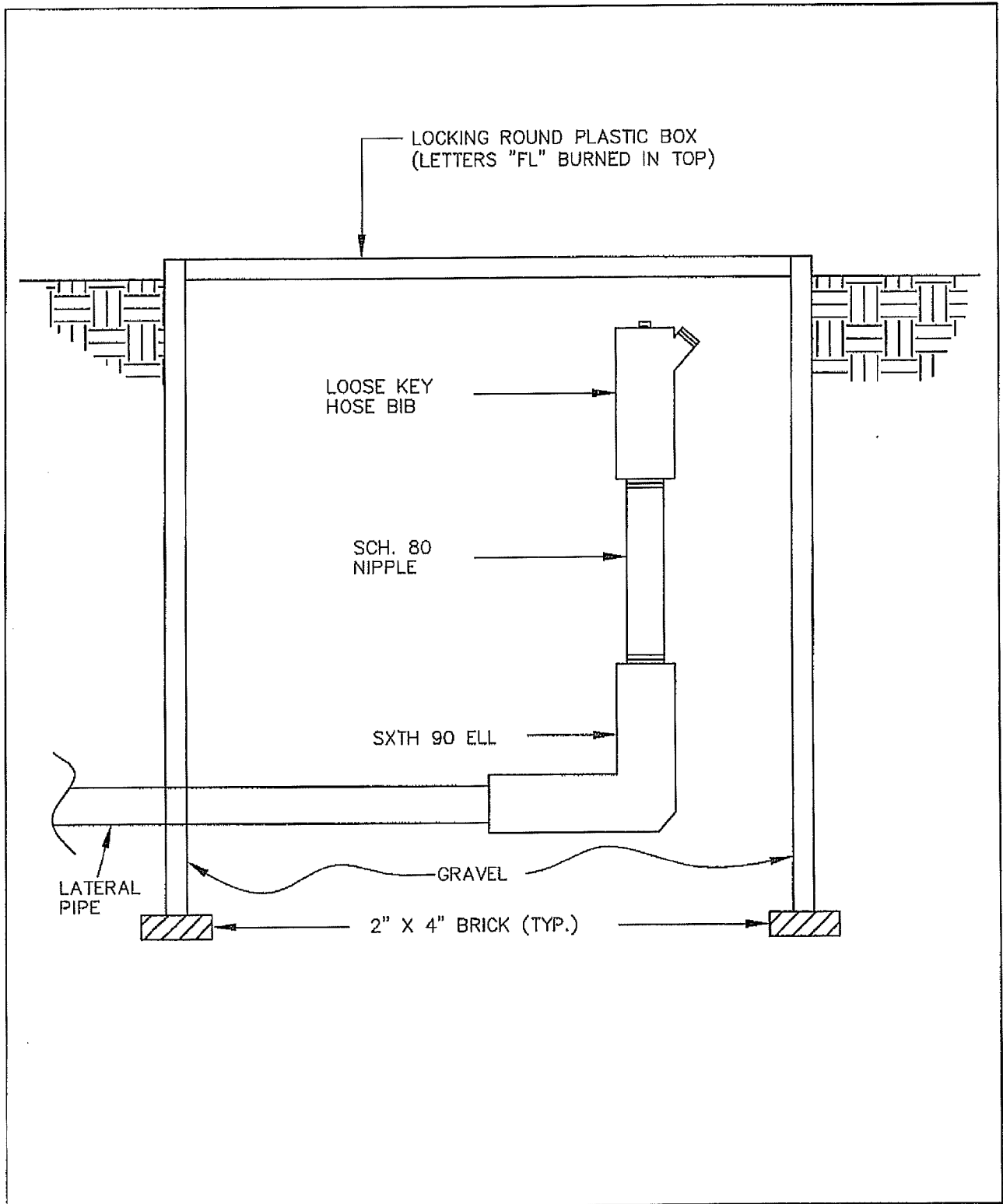
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

DRIP EMITTER
ASSEMBLY

STANDARD
DETAIL
129



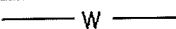
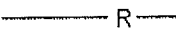















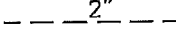
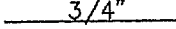
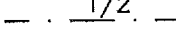
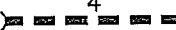

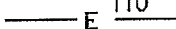
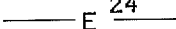



CITY OF LANCASTER







APPROVED BY:

RECOMMENDED BY:

DRIP SYSTEM
FLUSH VALVE

STANDARD
DETAIL
130

SAMPLE LEGEND			
SYMBOL	DESCRIPTION	MODEL & SIZE	DETAIL
	DOMESTIC WATER LINE		
	RECLAIMED WATER		
	METER SERVICE		
	WATER METER		
	POINT OF CONNECTION		
	REDUCED PRESSURE BACKFLOW UNIT		
	ATMOSPHERIC VACUUM BREAKER		
	PRESSURE REGULATING VALVE		
	PRESSURE RELIEF VALVE		
	CHECK VALVE		
	QUICK COUPLING VALVE		
	GATE VALVE		
	FLUSH VALVE		
	DRAIN VALVE		
	STRAINER OR SCREEN		
	REMOTE CONTROL VALVE		
	CONTROLLER / VALVE DESIGNATION VALVE FLOW IN GPM VALVE SIZE		
	MAINLINE, SIZED		
	SPRINKLER LINE, SIZED		
	BUBBLER OR EMITTER LINE, SIZED		
	EXISTING SLEEVE, SIZED		
	NEW SLEEVE, SIZED		
	110 VOLT WIRE ROUTING		
	24 VOLT WIRE ROUTING		
	AUTOMATIC CONTROLLER		
	DETAIL AND SHEET NUMBER		
	PUMP STATION		

SAMPLE SPRINKLER HEAD LEGEND								
SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION	GPM	PSI	RAD	P/R	DETAIL
	ABC COMPANY	20-20 x 1/4	POP-UP ROTOR	20.0	60	50'	.5"	#7
	ABC COMPANY	22-22 x 1/2	POP-UP ROTOR	20.0	60	50'	.5"	#7
	MNO COMPANY	4-15-F	POP-UP SPRAY	4.0	30	15'	.9"	#8
	MNO COMPANY	4-15-H	POP-UP SPRAY	2.0	30	15'	.9"	#8
	XYZ COMPANY	5-12-F	SHRUB SPRAY	2.0	25	12"	.7"	#8
	XYX COMPANY	5-12-H	SHRUB SPRAY	1.0	25	12"	.7"	#8

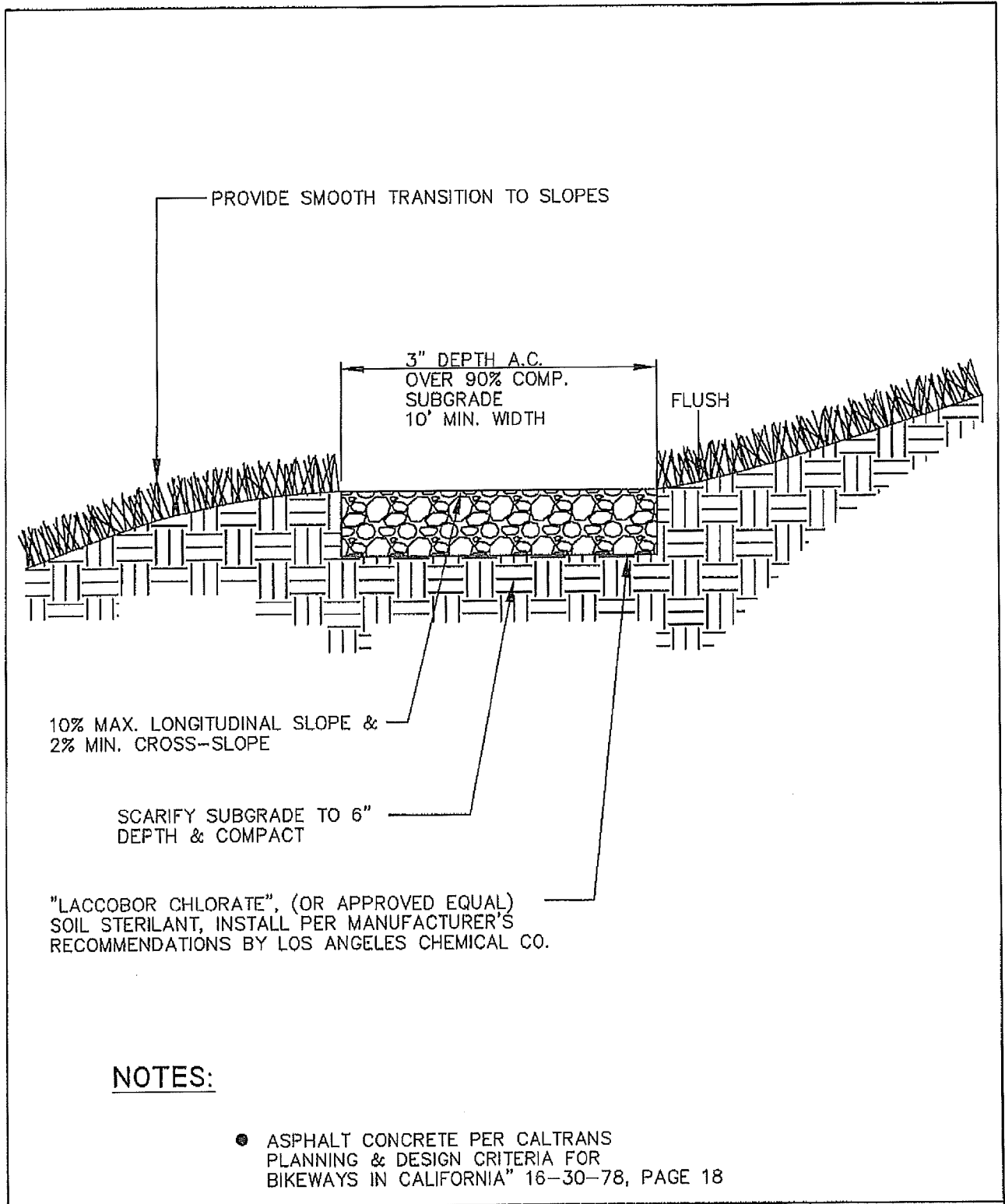
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

**IRRIGATION
TYPICAL SYMBOLS**

**STANDARD
DETAIL
131**



NOTES:

- ASPHALT CONCRETE PER CALTRANS PLANNING & DESIGN CRITERIA FOR BIKEWAYS IN CALIFORNIA" 16-30-78, PAGE 18

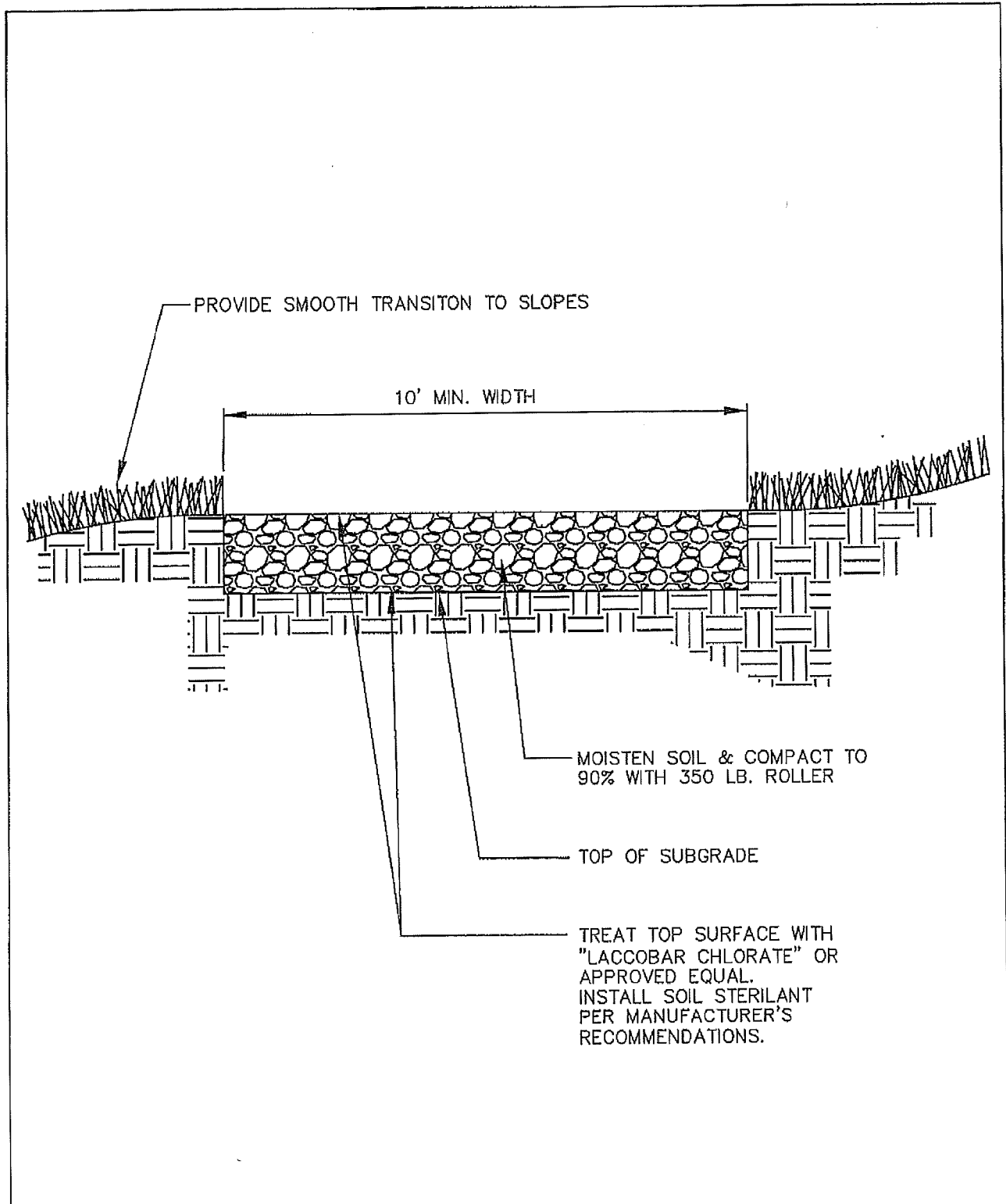
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

A.C. PATH

**STANDARD
DETAIL
201**



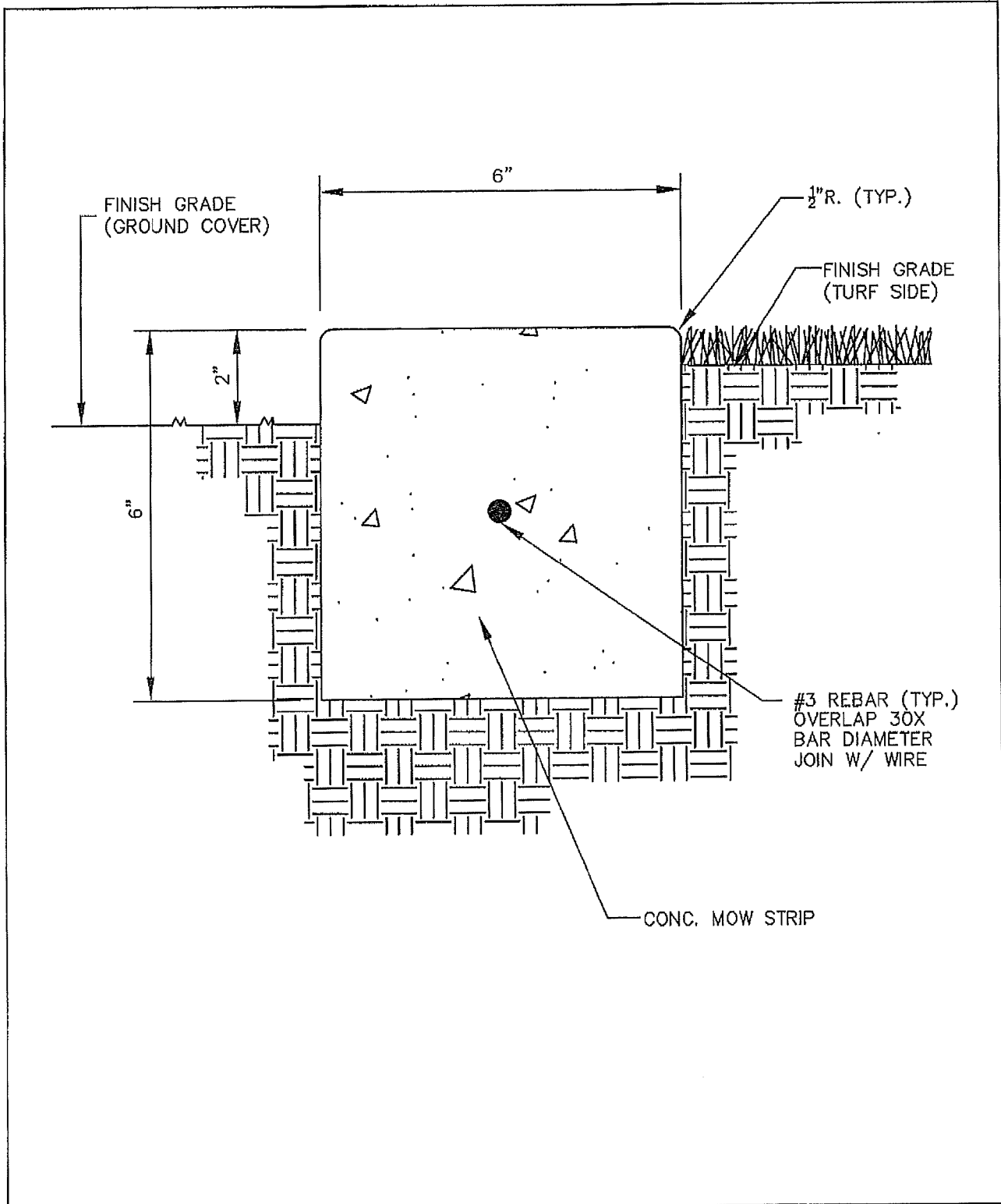
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

EQUESTRIAN TRAIL

STANDARD
DETAIL
202



#3 REBAR (TYP.)
 OVERLAP 30X
 BAR DIAMETER
 JOIN W/ WIRE

CONC. MOW STRIP

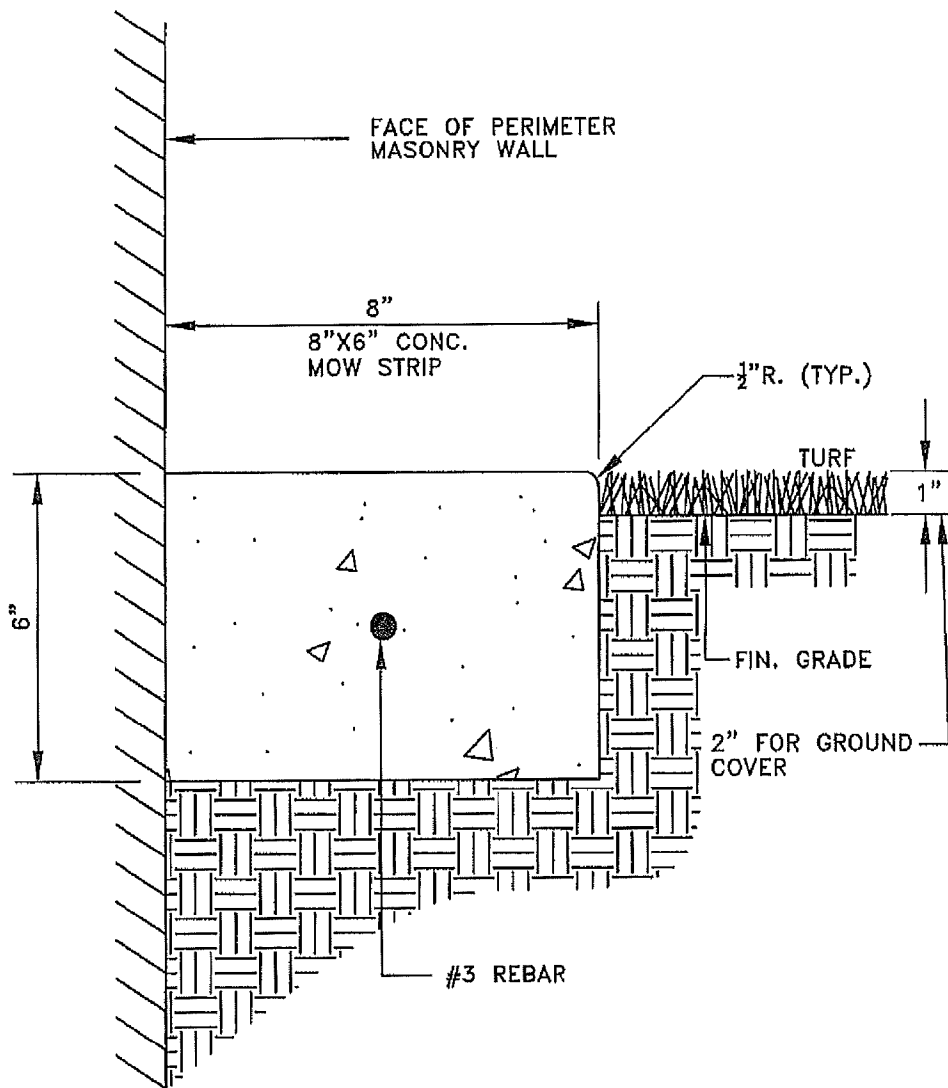
CITY OF LANCASTER

APPROVED BY:

 RECOMMENDED BY:

**CONCRETE MOW
 STRIP**

**STANDARD
 DETAIL
 203A-1**



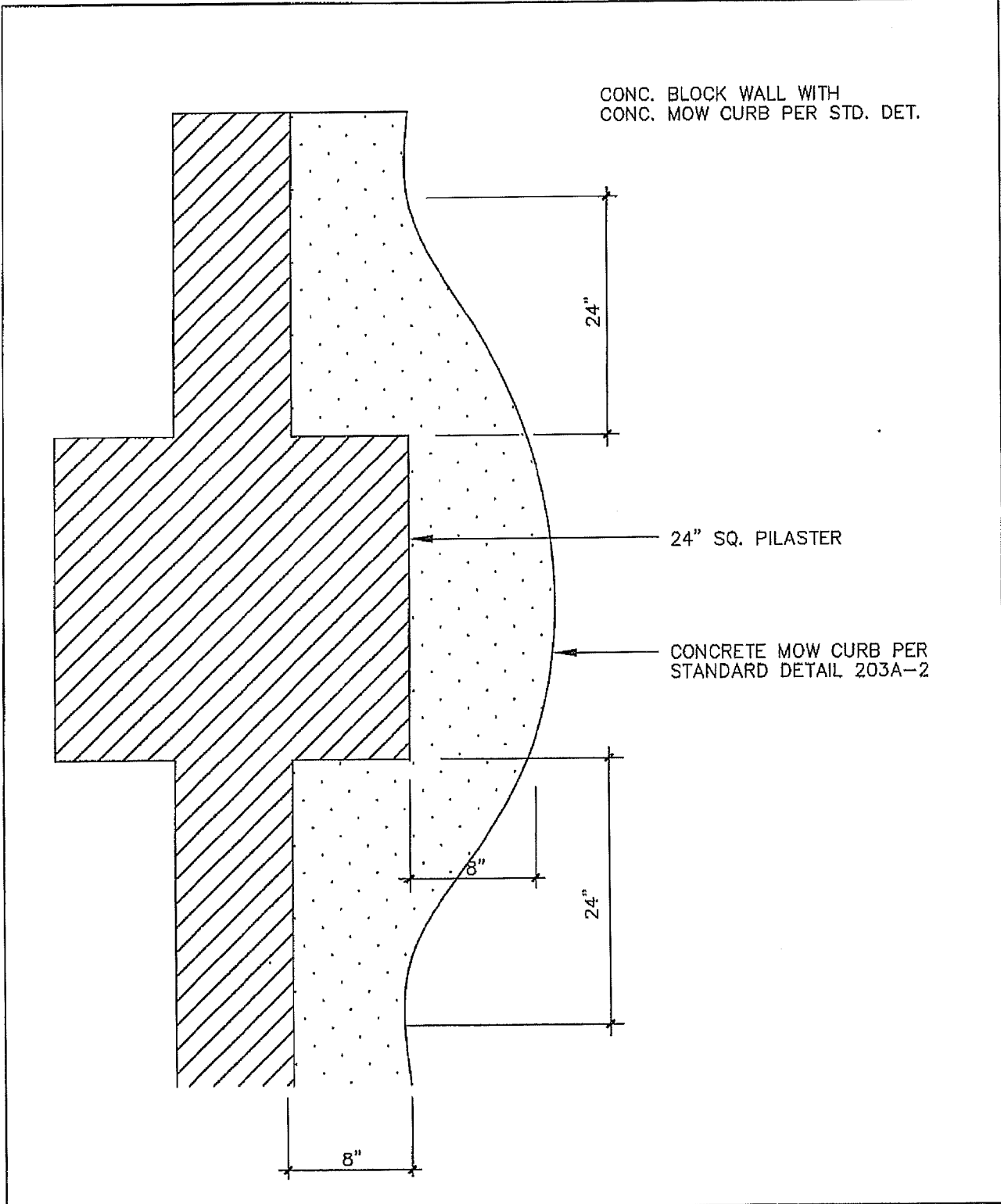
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

CONCRETE MOW STRIP
(ALONG MASONRY
WALL)

STANDARD
DETAIL
203A-2



CONC. BLOCK WALL WITH
CONC. MOW CURB PER STD. DET.

24" SQ. PILASTER

CONCRETE MOW CURB PER
STANDARD DETAIL 203A-2

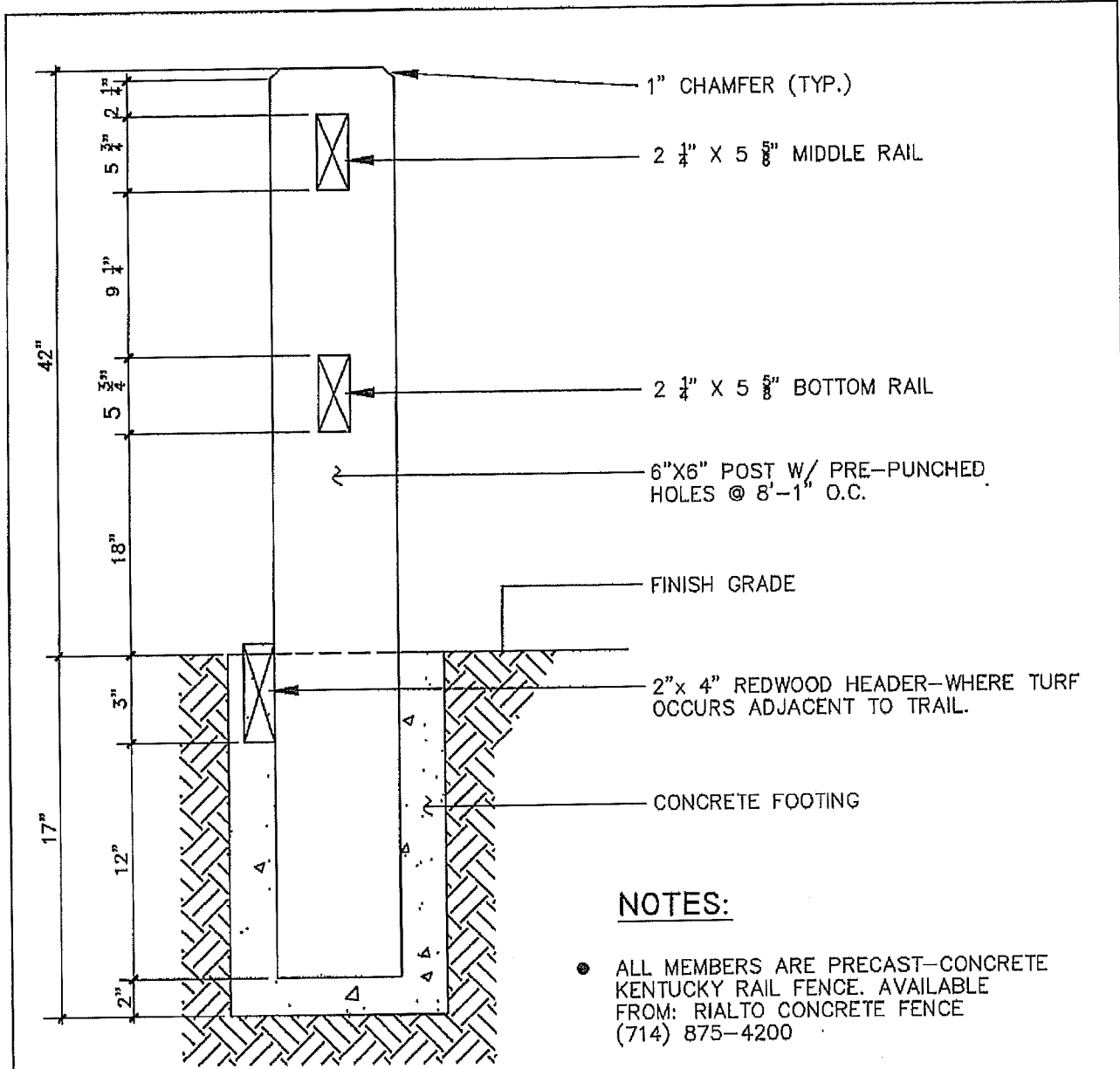
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

**CONCRETE CURB
(AT PILASTER)**

**STANDARD
DETAIL
203B**



NOTES:

- ALL MEMBERS ARE PRECAST-CONCRETE KENTUCKY RAIL FENCE. AVAILABLE FROM: RIALTO CONCRETE FENCE (714) 875-4200
- MEMBERS TO BE PAINTED W/ MASONRY OR CONCRETE PAINT, (COLOR TO BE SELECTED BY CITY)
- CHANGE IN LINEAL DIRECTION REQUIRES 2 POSTS-SIDE BY SIDE.
- END POSTS SHALL HAVE OPEN SLOTS-FILLED WITH MORTAR & TEXTURE FINISHED PRIOR TO PAINTING.

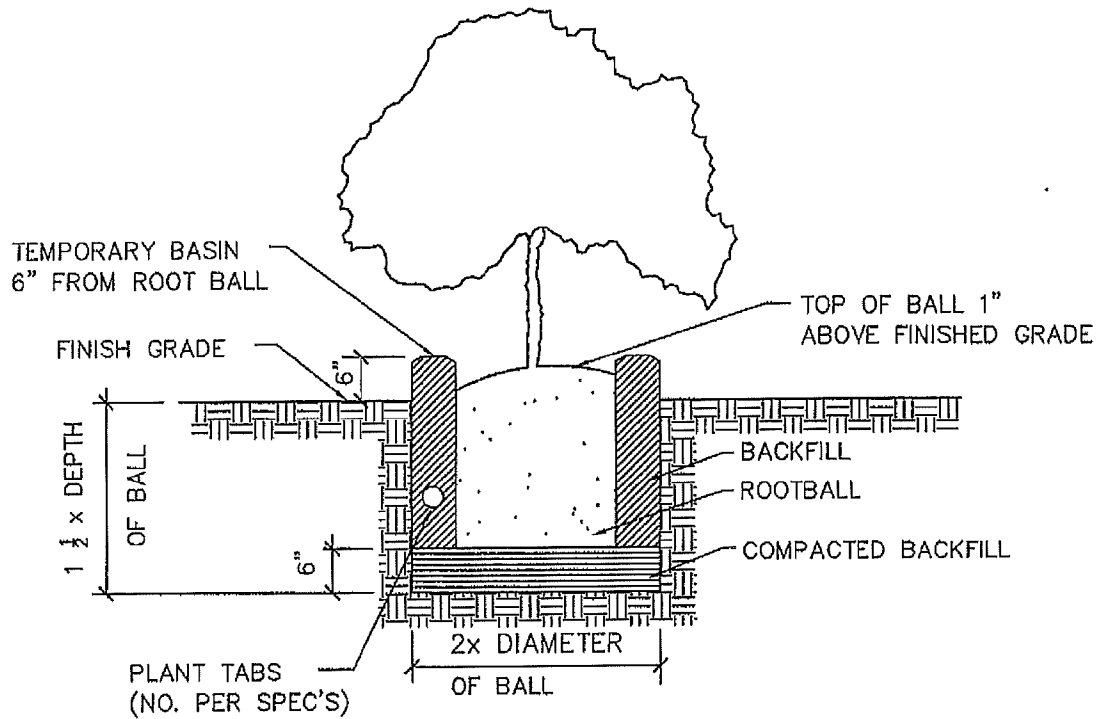
CITY OF LANCASTER

APPROVED BY:

 RECOMMENDED BY:

**CONCRETE
 EQUESTRIAN
 FENCE**

**STANDARD
 DETAIL
 204**



NOTE:

- REMOVE BASIN PRIOR TO END OF MAINTANCE

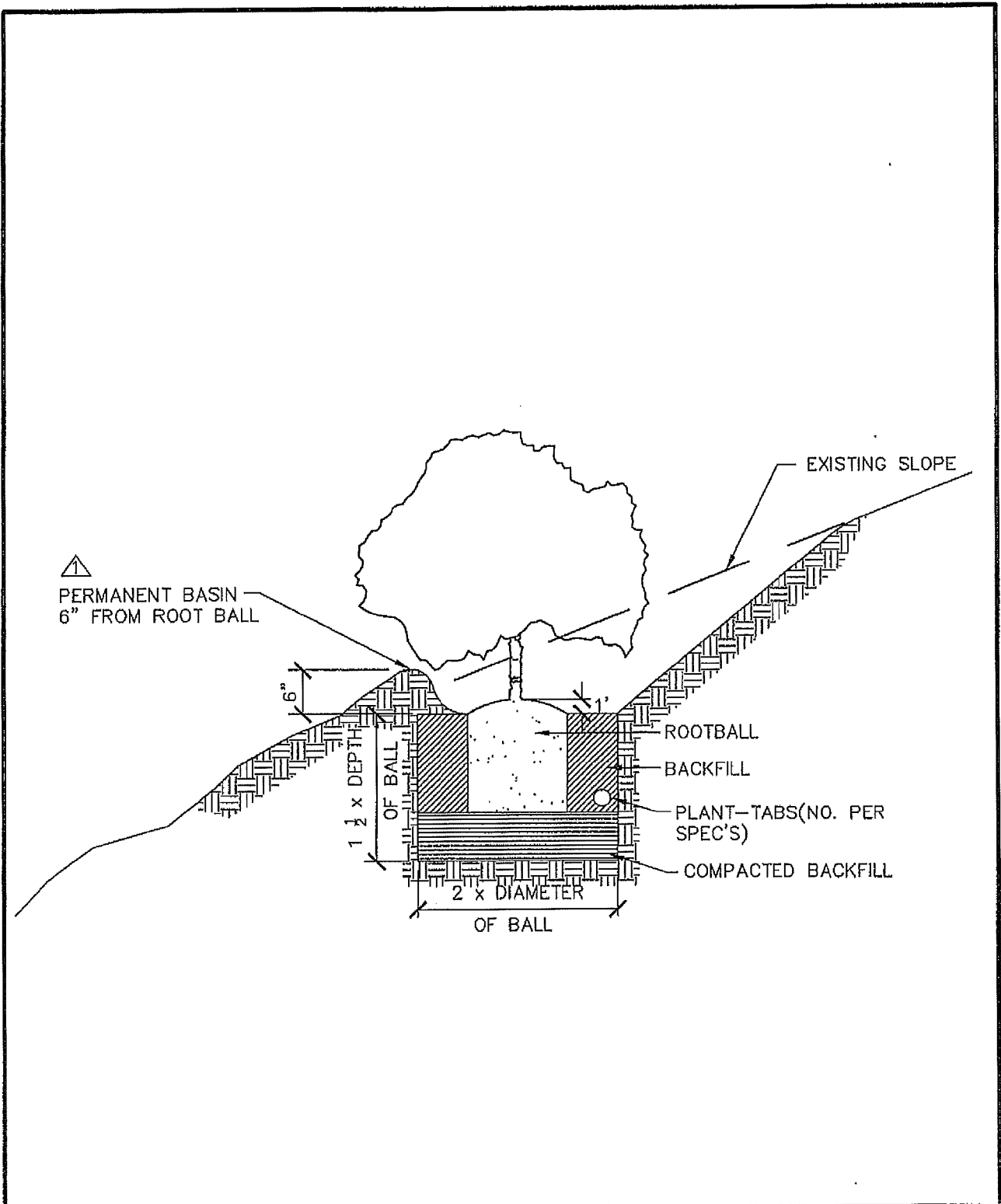
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

SHRUB PLANTING

**STANDARD
DETAIL
205**



CITY OF LANCASTER

APPROVED BY:

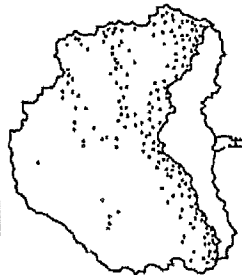
RECOMMENDED BY:

**SHRUB PLANTING
(SLOPE)**

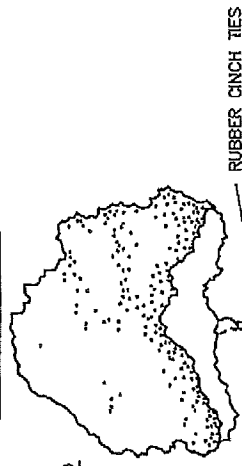
**STANDARD
DETAIL
206**

TREE BOX SIZE	A	B	C
24"	48" (1220mm)	10' (3.0m)	36" (915mm)
36"	72" (1905mm)	12' (3.7m)	54" (1370mm)

N-S SECTION

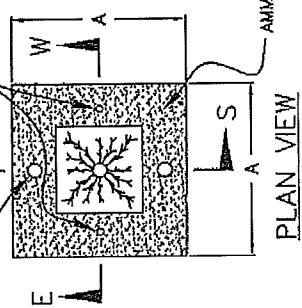


E-W SECTION

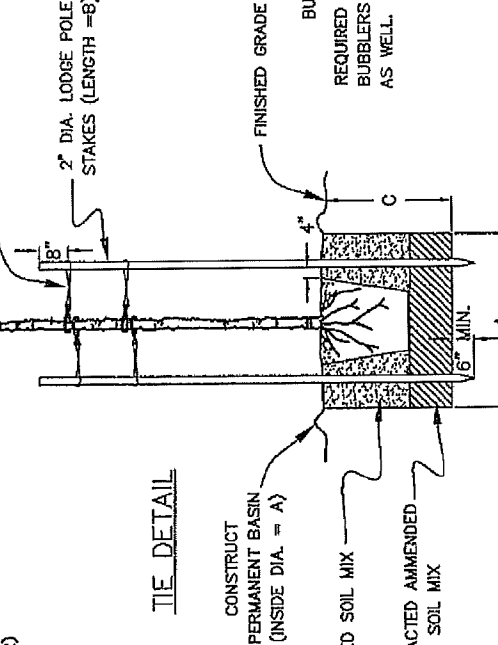


PREVAILING WIND

TREE BUBBLER ASSEMBLY
2 PER TREE
(SEE DETAIL 209)



TIE DETAIL



CONSTRUCT PERMANENT BASIN (INSIDE DIA. = A)
AMMENDED SOIL MIX
COMPACTED AMMENDED SOIL MIX

PVC CAP
FINISHED GRADE
4" x 3" PVC PERFORATED PIPE. 2 PER TREE OPPOSITE SIDES FROM STAKES. FILL WITH 3/4" CRUSHED ROCK. INSTALL BUBBLERS IN PIPES.

BUBBLER WHERE NO BUBBLERS ARE USED AS WELL.

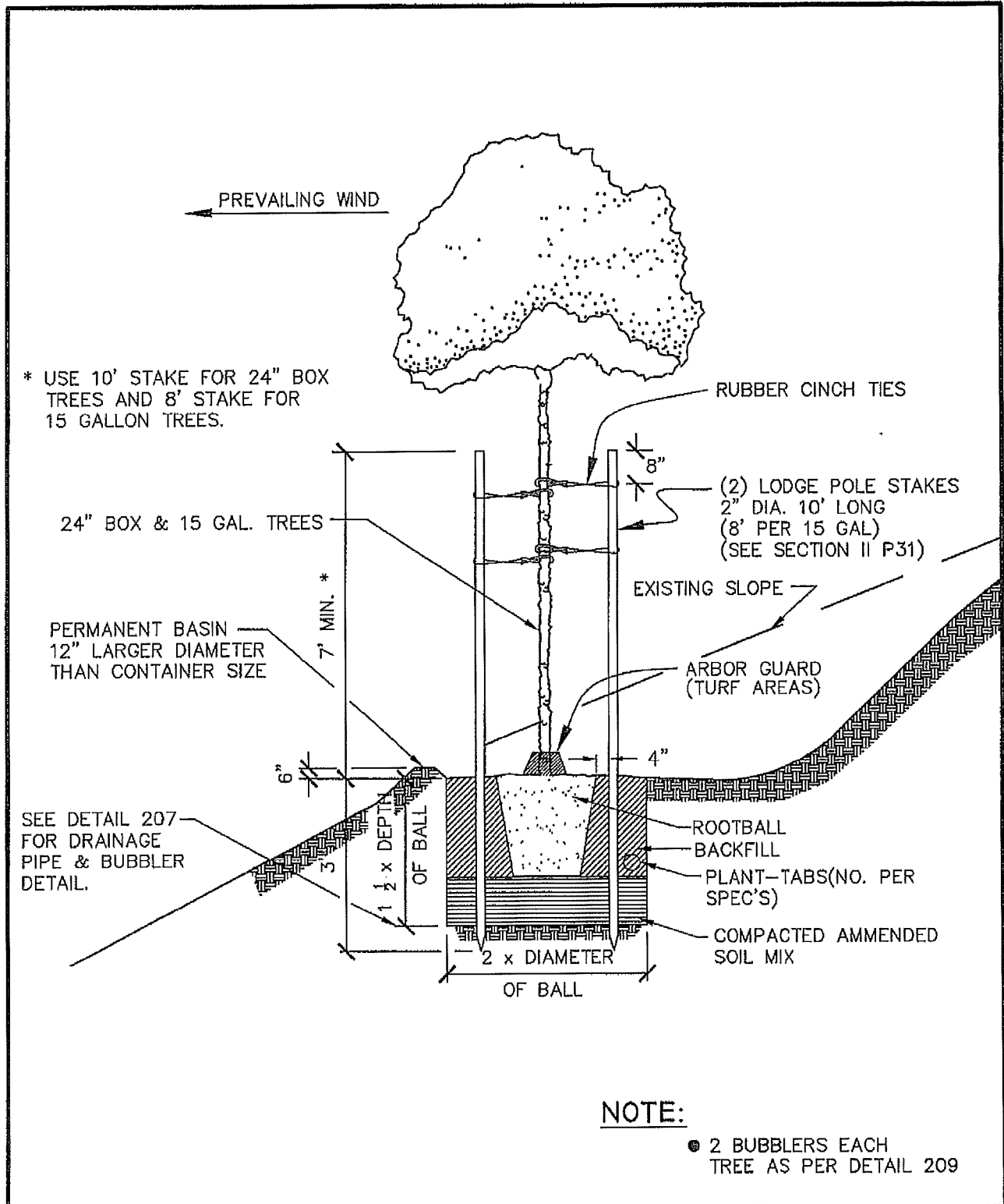
CITY OF LANCASTER

TREE PLANTING

APPROVED BY:

RECOMMENDED BY:

STANDARD
DETAIL
207



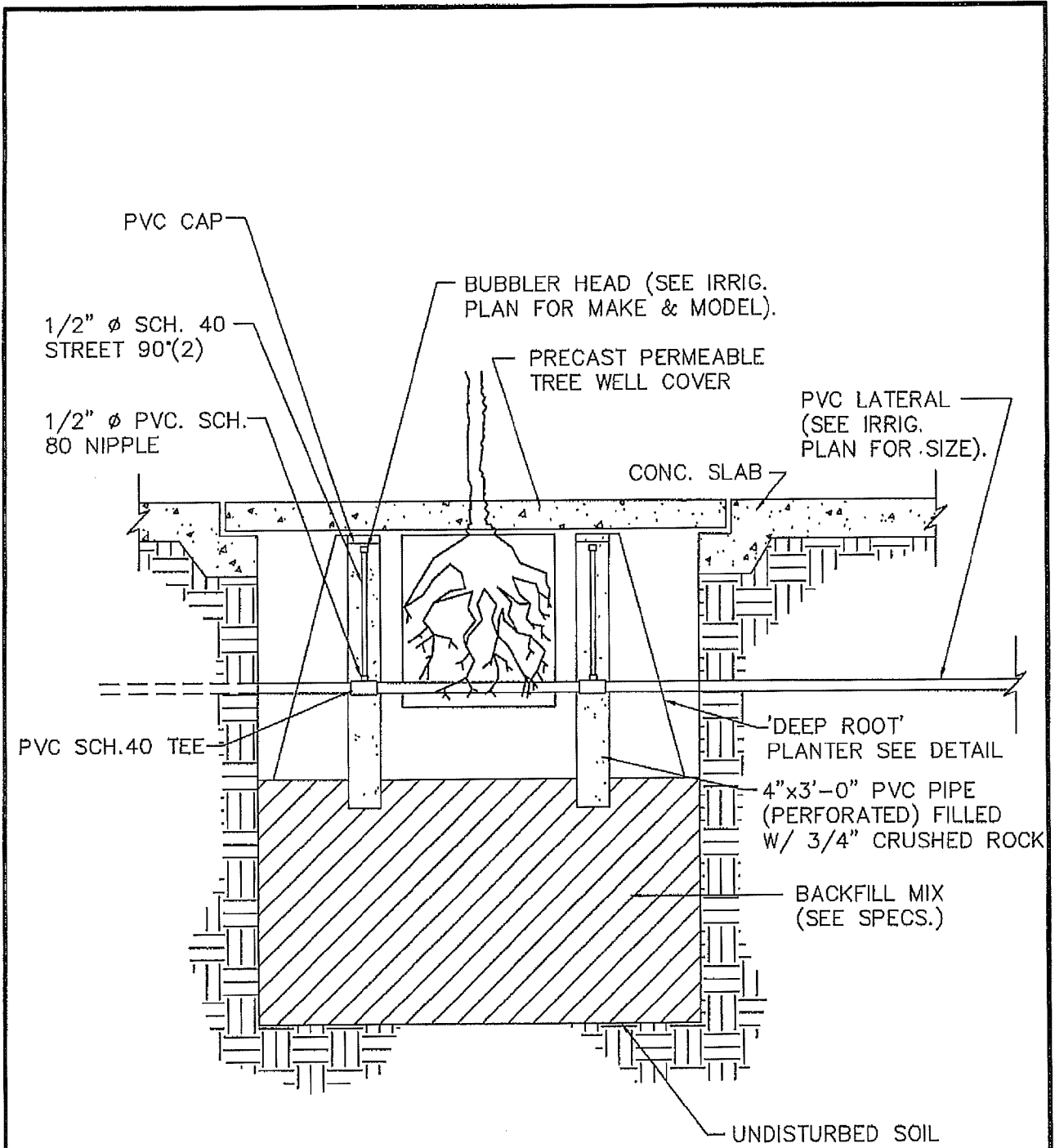
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

TREE PLANTING
(SLOPE)

STANDARD
DETAIL
208

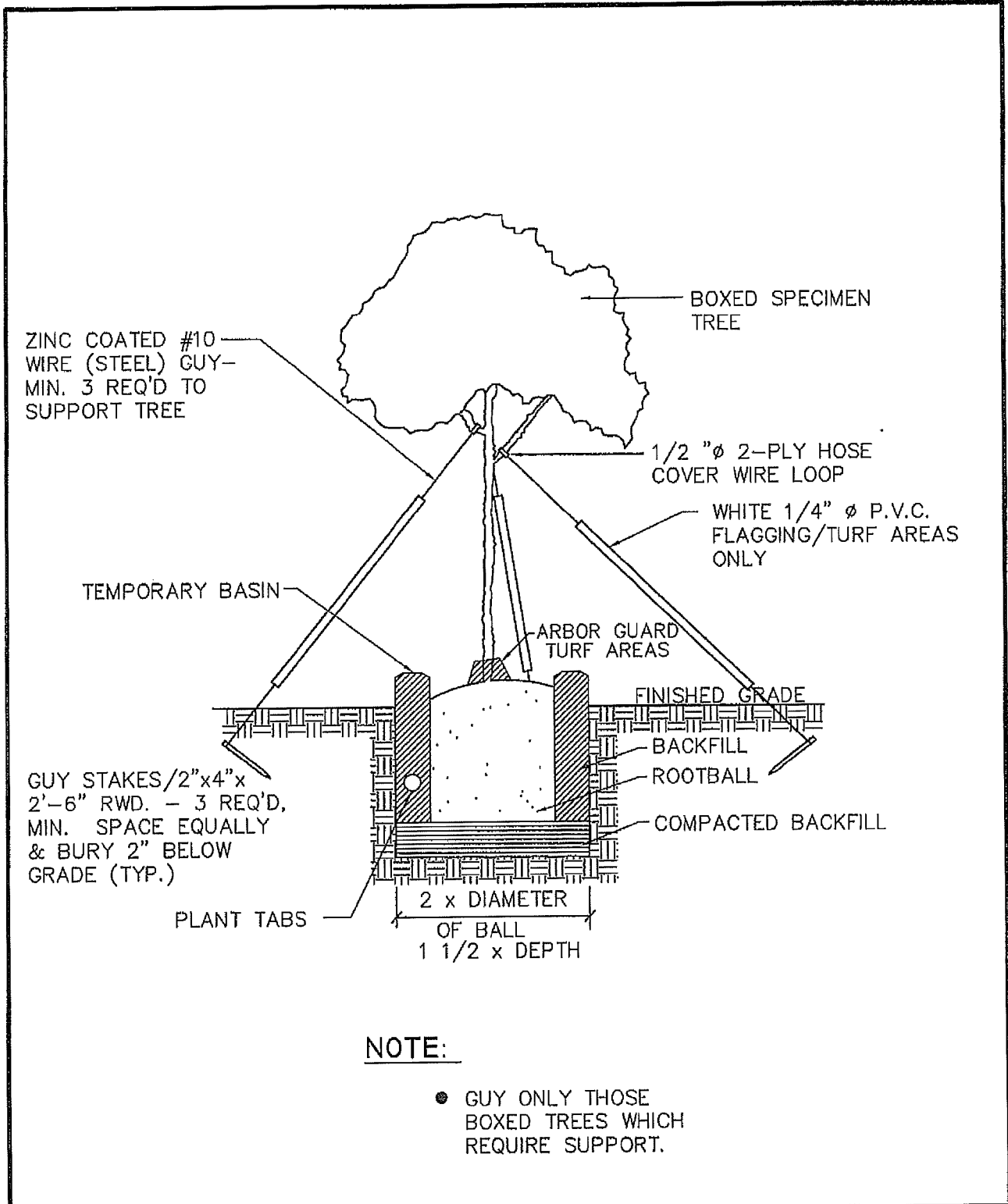


NOTE :

- SEE BUBBLER HEAD/DEEP WATERING PIPE DETAIL FOR HEAD ASSEMBLY

CITY OF LANCASTER

<p>APPROVED BY:</p> <hr/> <p>RECOMMENDED BY:</p> <hr/>	<p>TREE PLANTING (TREE WELL)</p>	<p>STANDARD DETAIL 209</p>
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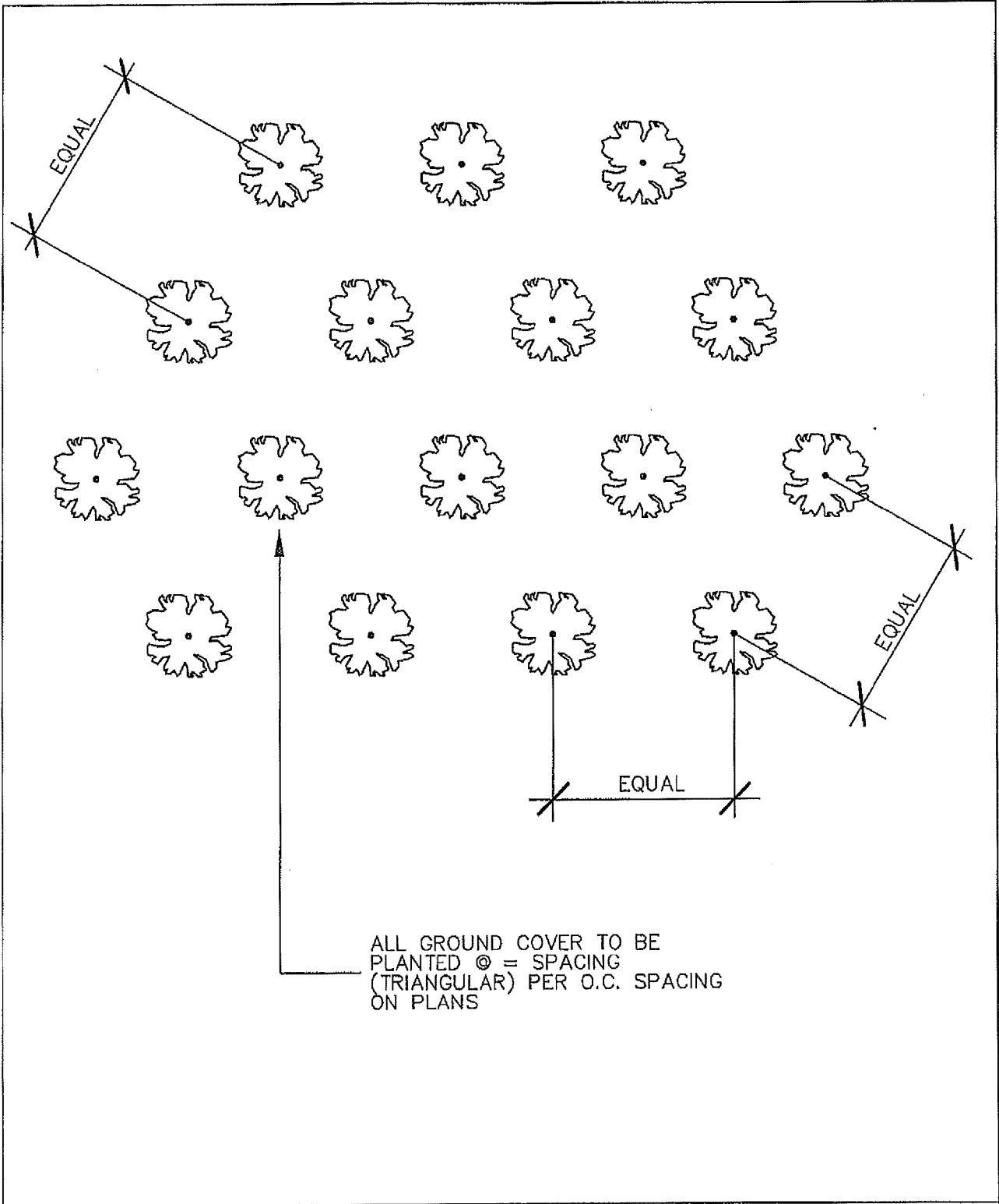
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

TREE GUYING

**STANDARD
DETAIL
210**



CITY OF LANCASTER

APPROVED BY:

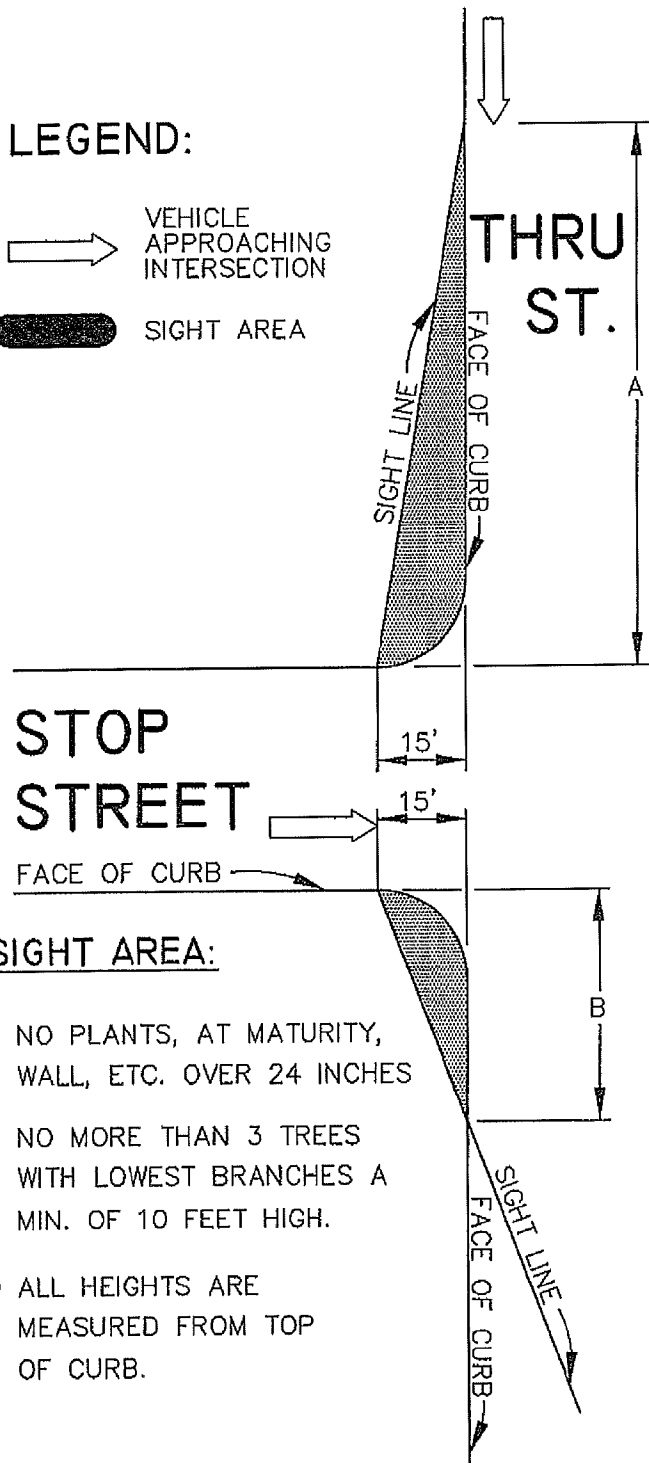
 RECOMMENDED BY:

**GROUND COVER
 SPACING**

**STANDARD
 DETAIL
 211**

LEGEND:

-  VEHICLE APPROACHING INTERSECTION
-  SIGHT AREA



DISTANCE A	
POSTED SPEED LIMIT (MPH)	DISTANCE (IN FEET)
55	370
50	335
45	300
40	265
35	230
30	190

CHECK ZONING ORDINANCE
SEC. 17.28.050

STOP STREET

SIGHT AREA:

- NO PLANTS, AT MATURITY, WALL, ETC. OVER 24 INCHES
- NO MORE THAN 3 TREES WITH LOWEST BRANCHES A MIN. OF 10 FEET HIGH.
- ALL HEIGHTS ARE MEASURED FROM TOP OF CURB.

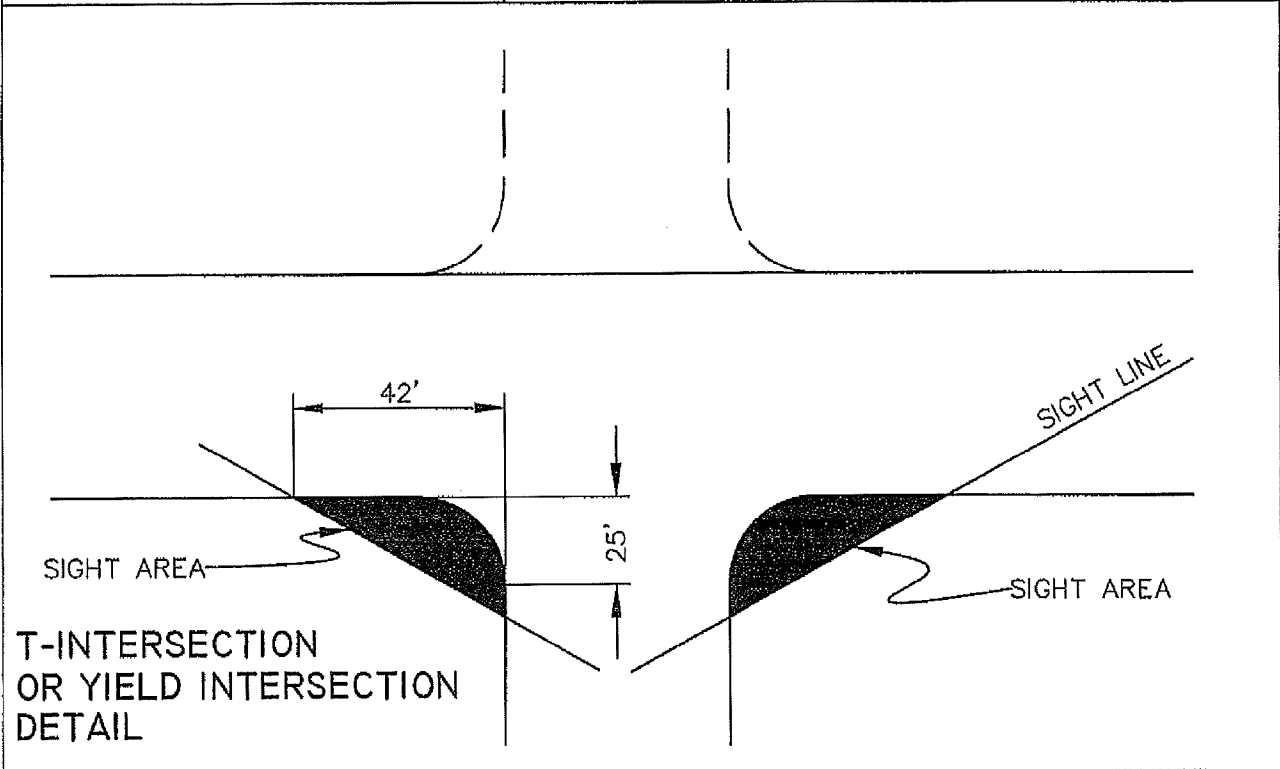
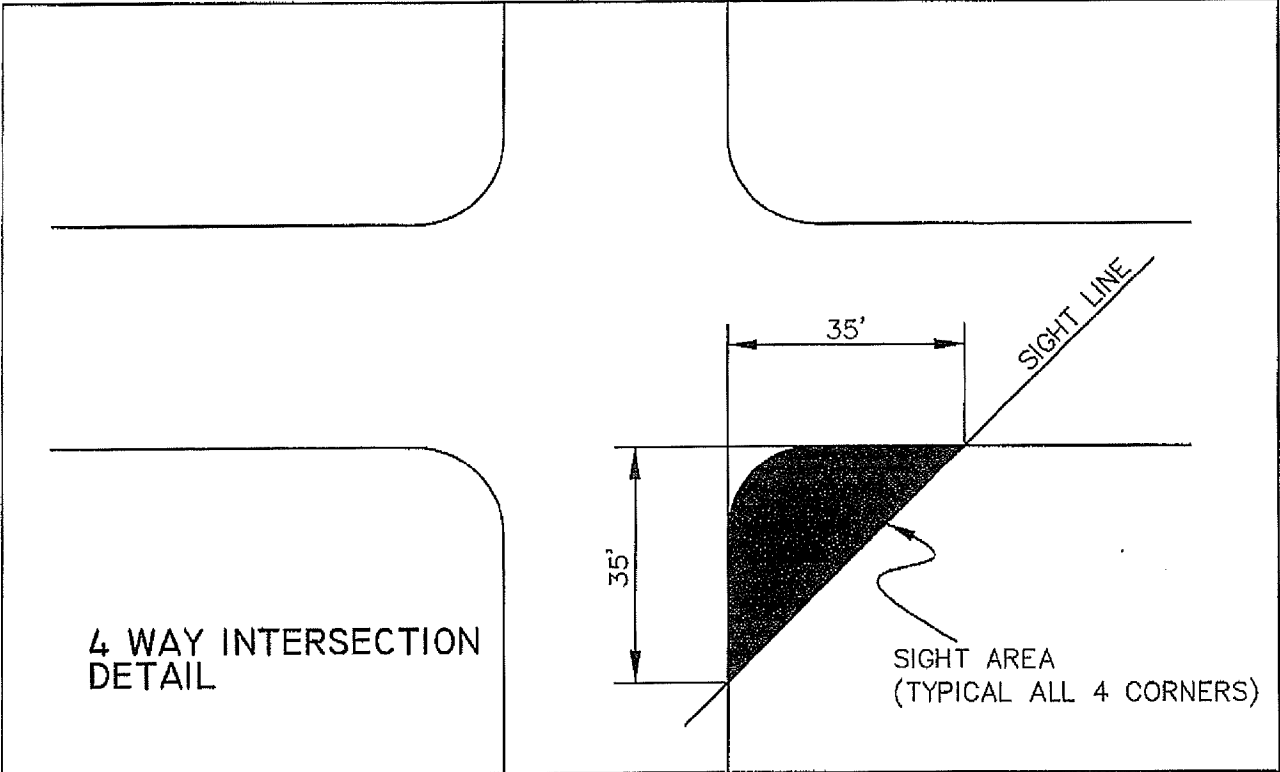
DISTANCE B	
POSTED SPEED LIMIT (MPH)	DISTANCE (IN FEET)
55	140
50	125
45	110
40	105
35	100
30	90

CITY OF LANCASTER

APPROVED BY: _____
RECOMMENDED BY: _____

**TREE PLACEMENT
CONTROLLED
INTERSECTION**

**STANDARD
DETAIL
212A**



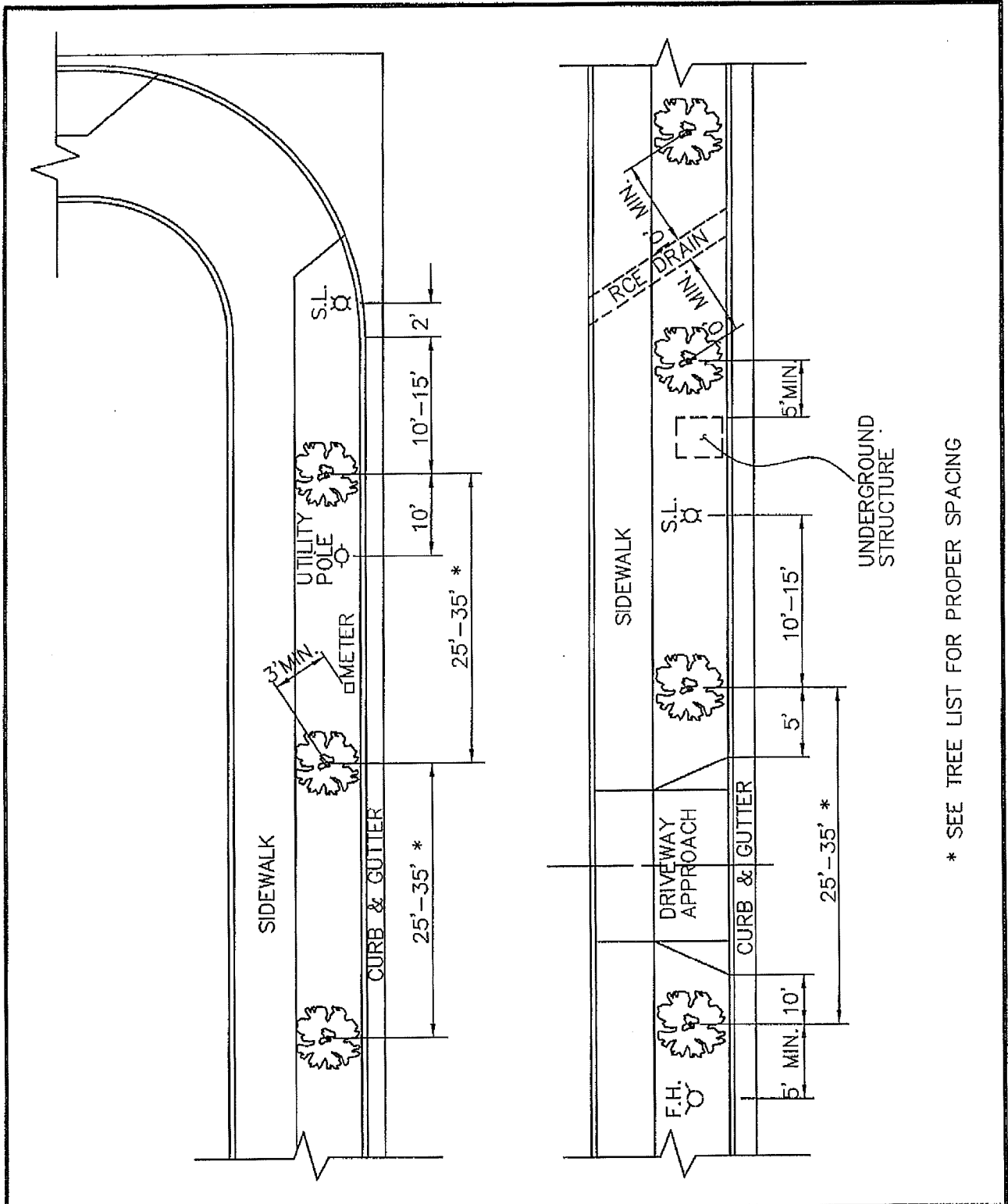
CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

**TREE PLACEMENT
UNCONTROLLED
INTERSECTION**

**STANDARD
DETAIL
212B**



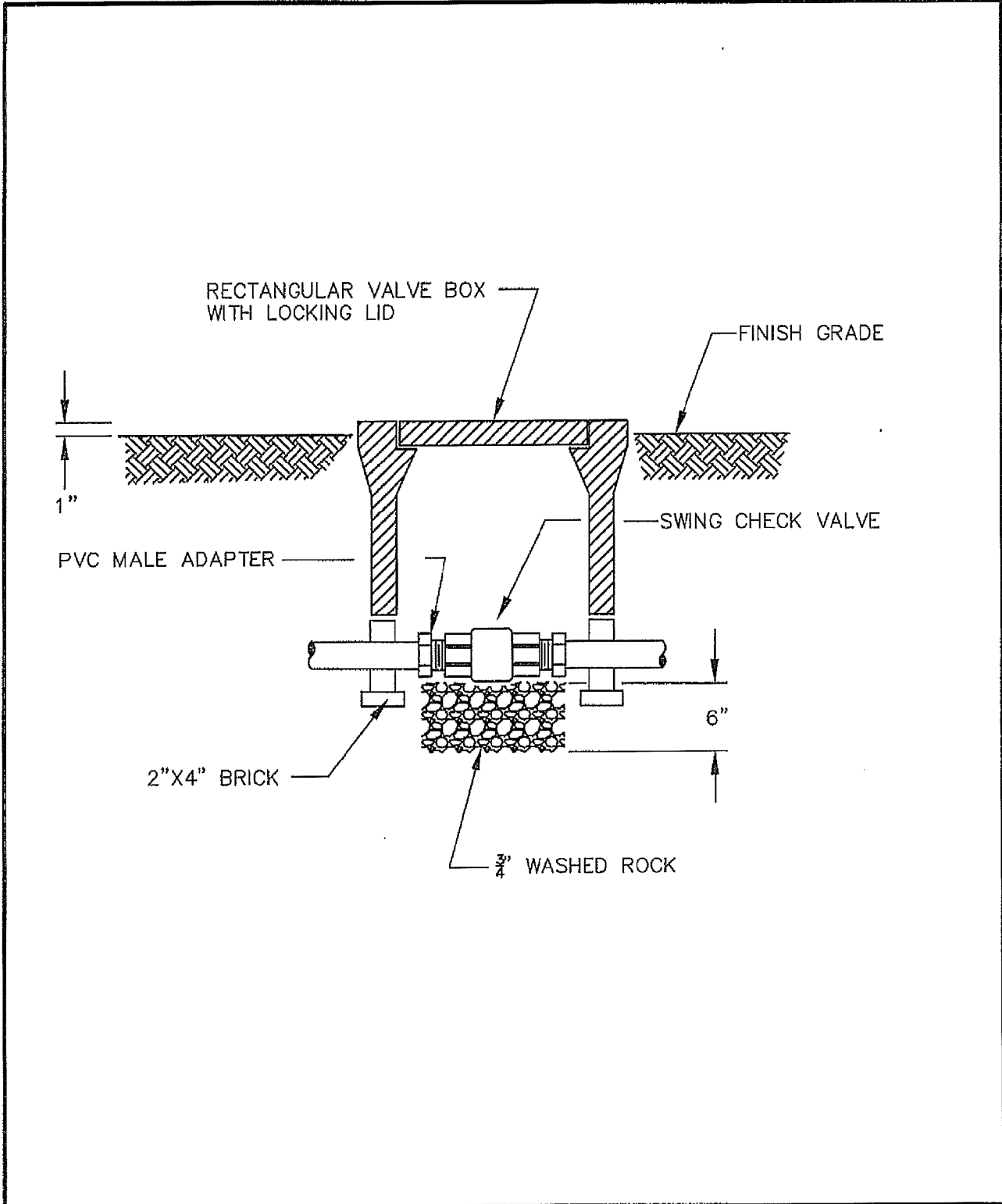
* SEE TREE LIST FOR PROPER SPACING

CITY OF LANCASTER

APPROVED BY: _____
 RECOMMENDED BY: _____

STREET TREE PLACEMENT

STANDARD
 DETAIL
 213



CITY OF LANCASTER

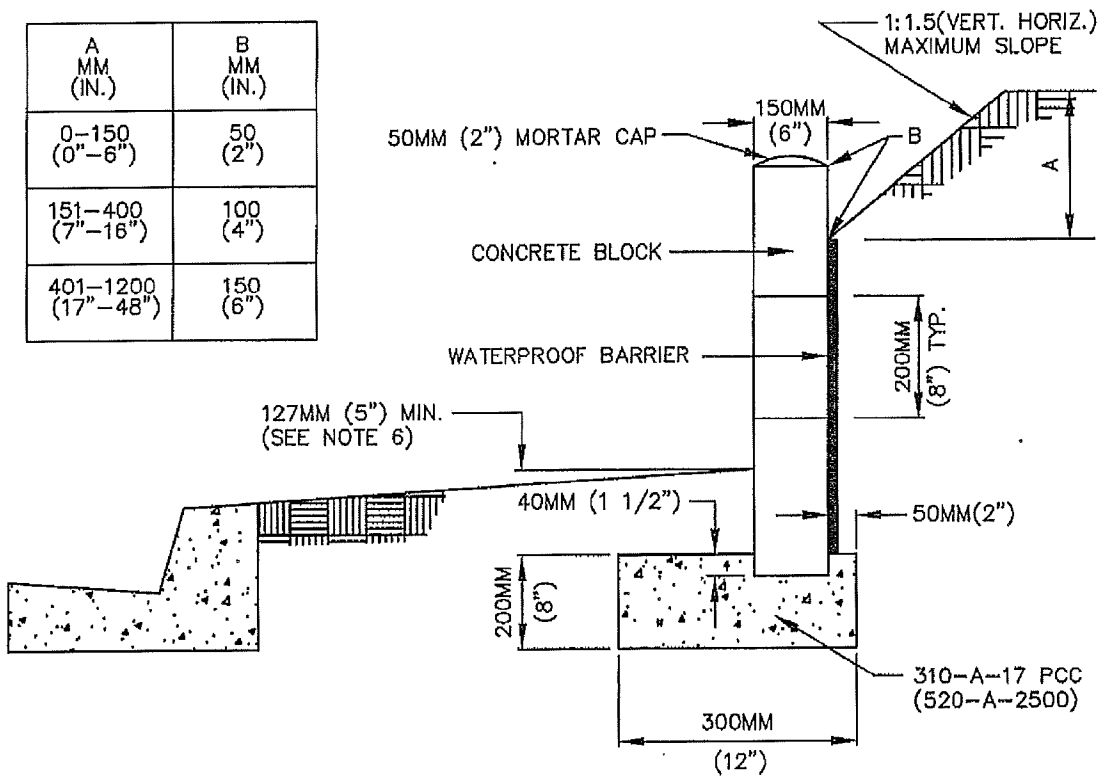
APPROVED BY:

RECOMMENDED BY:

**SWING
CHECK VALVE**

**STANDARD
DETAIL
214**

A MM (IN.)	B MM (IN.)
0-150 (0"-6")	50 (2")
151-400 (7"-16")	100 (4")
401-1200 (17"-48")	150 (6")



1-2 COURSE MINIMUM
3 COURSE MAXIMUM

NOTES:

- CONCRETE AND CONCRETE BLOCK SHALL BE PER SSPWC
- CONCRETE BLOCKS SHALL BE PLACED WHILE THE FOOTING IS STILL FRESH. ALL CELLS TO BE FILLED SOLID WITH GROUT AND RODDED SO GROUT IS MONOLITHIC WITH FRESH FOOTING.
- POUR FOOTING AGAINST UNDISTURBED NATURAL SOIL.
- NO LIVE LOAD SURCHARGE ALLOWED ON RETAINED SOIL.
- TOP OF FOOTING MAY BE PLACED PARALLEL TO PARKWAY GRADE IF STREET GRADE IS RELATIVELY FLAT AND UNIFORM. (MAX. 5%).
- DIMENSIONS SHOWN ON THIS PLAN FOR METRIC AND ENGLISH UNITS ARE NOT EXACTLY EQUAL VALUES. IF METRIC UNITS ARE USED, ALL VALUES USED FOR CONSTRUCTION SHALL BE METRIC VALUES. IF ENGLISH UNITS ARE USED, ALL VALUES USED FOR CONSTRUCTION SHALL BE ENGLISH VALUES.

CITY OF LANCASTER

APPROVED BY:

RECOMMENDED BY:

CONCRETE BLOCK
SLOUGH WALL

STANDARD
DETAIL
215

APPENDIX G

Appendix G – Plant List

City of Lancaster

Plant List

October 2008

CITY OF LANCASTER – PLANT LIST

Legend

Scientific	Common Name	R.	C.	L.	ST	PT	W	Water use
------------	-------------	----	----	----	----	----	---	-----------

R.-Residential, C.-Commercial, Institutional, Industrial, ST- Street Tree, L- Landscape District, PT- Plant Type, W-Plant Width

Cactus & Succulents

Aguave Americana	Century Plant	X	X			H	5	□□□
------------------	---------------	---	---	--	--	---	---	-----

Column Legend

- 1st Column – Plant Scientific Name
- 2nd Column – Plant Common Name
- 3rd Column – X indicates approved for Residential Landscape applications.
- 4th Column – X indicates approved for Commercial, Institutional, and Industrial Landscape applications.
- 5th Column – X indicates approved to plant in City’s public right-of-way
- 6th Column – X indicates approved for City Street Tree application.
- 7th Column – Provides plant type designation; D - Deciduous, E - Evergreen, C - conifer, H – Herbaceous
- 8th Column – Number indicates width or coverage of plant (size to be drawn at and for water use calculation).
- 9th Column – Water use indicator (one sun -high water use, two suns -average, three suns -low water use, four suns -very low water use)

Example:

In the category of Cactus & Succulents, Agave Americana (scientific name) otherwise known as the Century Plant (common name) is acceptable for Residential, Commercial, Institutional, and Industrial Landscape applications. It is not acceptable as a street tree. It is to be drawn landscape plans with a five foot radius for the purpose of coverage calculations and is considered a low water use plant.

TABLE OF CONTENTS

Ferns	6
Ground Covers.....	7
Ornamental Grass	10
Palms	11
Perennials.....	12
Shrubs	14
Trees	24
Vines.....	29

Cactus & Succulents

Agave Americana	Century Plant	x	x		H	5	□□□
Agave Americana 'Marginata'	Century Plant	x	x		H	6	□□□
Agave Americana 'Media-Picta'	Century Plant	x	x		H	6	□□□
Agave Angustifolia 'Marginata'	Maguey Lechugma	x	x		H	4	□□□□
Agave Bovicomuta	Cowhorn Agave	x	x		H	4	□□□□
Agave Celsii 'Nova'	Nova Agave	x	x		H	2	□□□□
Agave Colorata	Mescal Agave	x	x		H	2	□□□□
Agave Deserti	Desert Agave	x	x		H	2	□□□□
Agave Desmettiana 'Variegata'	Variegated Smooth Agave	x	x		H	3	□□□□
Agave Desmettiana 'Zebra Stripe'	Zebra Stripe Smooth Agave	x	x		H	3	□□□□
Agave 'Felipe Otero'	Sierra Mixteca Agave	x	x		H	2	□□□□
Agave Ferdinandi-Regis	King Of The Agave	x	x		H	2	□□□□
Agave Franzosini	Agave	x	x		H	5	□□□□
Agave Geminiflora	Twin-Flowered Agave	x	x		H	2	□□□□
Agave Gentryi 'Jaws'	Hardy Agave	x	x		H	3	□□□□
Agave Lechguilla	Lechguilla Agave	x	x		H	2	□□□□
Agave Parryii 'Compacta Variegata'	Dwarf Variegated Artichoke Agave	x	x		H	2	□□□□
Agave Parryii 'Rose'	Rose Artichoke Agave	x	x		H	2	□□□□
Agave Potatorum 'Verschaffeltii'	Butterfly Agave	x	x		H	2	□□□□
Agave Pygmaea	Pygmaea Agave	x	x		H	1	□□□□
Agave Salmiana	Giant Agave	x	x		H	6	□□□□
Agave 'Shark Skin'	Sharkskin Agave	x	x		H	3	□□□□
Agave Shawii	Shaw's Agave	x	x		H	2	□□□□
Agave Sislana 'Variegata'	Agave	x	x		H	4	□□□□
Agave Stricta 'Pueblensis'	Pencil Agave	x	x		H	2	□□□□
Agave Toumeyana	Agave	x	x		H	3	□□□□
Agave Utahensis Var. Eborispina	Ivory-Spined Agave	x	x		H	1	□□□□
Agave 'Victoria-Reginae'	Queen Victoria Agave	x	x		H	1	□□□□
Dasyllirion Acrotrichum	Green Desert Spoon	x	x		E	5	□□□
Dasyllirion Bigelovii (Nolina Bigelovii)	Beargrass	x	x		H	5	□□□

Dasyliirion Longissimum	Mexican Grass Tree, Toothless Sotol	x	x		E	5	□□□
Dasyliirion Texanum	Green Sotol, Texas Sotol	x	x		E	5	□□□
Dasyliirion Wheeleri	Desert Spoon	x	x		E	3	□□□
Echinocactus Grusonii	Golden Barrel Cactus	x	x		E	2	□□□
Echinocereus Caespitosus	Hedge Hog Cactus	x	x		H	3	□□□□
Echinopsis Terscheckii	Argentine Saguaro	x	x		H	5	□□□□
Ferocactus Cylindraceus	Red Barrel Cactus	x	x		H	2	□□□□
Ferocactus Wislizenii	Fish Hook Barrel	x	x		H	2	□□□□
Fouquieria Splendens	Ocotillo	x	x		E	5	□□□□
Hesperaloe Funifera	Coahuilan Hesperaloe	x	x		E	3	□□□
Hesperaloe Parviflora	Red/Yellow Yucca	x	x		E	2	□□□
Opuntia Leptocaulis	Christmas Cholla				E	3	□□□□
Opuntia Basilaris	Beavertail Cactus	x	x		E	3	□□□□
Opuntia Macrocentra (O. Violacea Var Sinta-Rita)	Purple Prickly Pear				E	4	□□□□
Stetsonia Coryne	Toothpick Cactus	x	x		H	8	□□□□
Yucca Aloifolia	Spanish Bayonet	x	x		E	3	□□□
Yucca Baccata	Datil Yucca	x	x		E	4	□□□
Yucca Brevifolia	Joshua Tree	x	x		E	10	□□□□
Yucca Elata	Soaptree Yucca	x	x		E	8	□□□
Yucca Filamentosa	Adam's Needle	x	x		E	3	□□□
Yucca Gloriosa	Spanish Dagger, Soft-Tip Yucca	x			E	3	□□□
Yucca Recurvifolia	Weeping Yucca	x	x		E	4	□□□
Yucca Rigida	Beaked Yucca	x	x		E	4	□□□
Yucca Rostrata	Thompson Yucca	x	x		E	5	□□□
Yucca Schidigera	Mohave Yucca	x	x		E	2	□□□
Yucca Whipplei	Our Lord's Candle	x	x		E	4	□□□□

Ferns

Asparagus Asparagoides	Smilax Asparagus	x	x		H2	2	□□□
Asparagus Densiflorus 'Myers'	Myers Asparagus Fern	x	x		H2	2	□□□
Asparagus Densiflorus 'Sprenger'	Sprenger Asparagus Fern	x	x		H2	2	□□□
Asparagus Retrofractus	Ming Fern, Twisted Asparagus Fern	x	x		H2	3	□□□
Asparagus Setaceus	Asparagus Fern, Emerald Feather	x	x		H2	3	□□□
Nephrolepis Cordifolia	Sword Fern	x			H2	2	□□
Polystichum Munitum	Sword Fern	x			H2	2	□□

Ground Covers

Achillea	Yarrow**			X				
Agapanthus	Dwarf Lily of the Nile			X				
Ajuga Reptans 'Cvs.'	Carpet Bugle	X	X			H	1	□□
Aptenia Cordifolia	Red Apple	X		X		H2	1	□□□
Arctostaphylos Uva-Ursi	Bearberry	X		X		E	6	□□
Arctostaphylos Uva-Ursi 'Point Reyes'	Manzanita'point Reyes'	X		X		E	6	□□
Arctotheca Calendula	Cape Weed	X	X	X		H	1	□□
Armeria Maritima	Sea Pink, Common Thrift	X		X		H2	1	□□
Baccharis Pilularis	Coyote Brush**,***			X				
Brachycome Iberidifolia	Swan River Daisy	X	X	X		H	1	□□
Cerastium Tomentosum	Snow In Summer	X	X			H2	3	□□□
Chamaemelum Nobile	Chamomile	X	X	X		H	2	□□
Convolvulus Cneorum	Morning Glory Bush, Silverbush	X	X	X		E	3	□□□
Coreopsis Grandiflora	Coreopsis			X				
Cotoneaster	Cotoneaster			X				
Cotoneaster Adpressus	Creeping Cotoneaster	X	X	X		D	3	□□
Cotoneaster 'Lowfast'	Cotoneaster	X	X	X		D	5	□□□
Dimorphotheca Sinuata	Cape Marigold, African Daisy	X	X	X		H	1	□□□
Drosanthemum Hispidum (Floribunda)	Pink Ice Plant	X		X		H2	1	□□□
Euonymus Fortunei 'Colorata'	Purple Leaf Winter Creeper			X				
Euonymus Fortunei 'Cvs.'	Winter Creeper	X	X	X		E	1	□□
Euonymus Fortunei Radicans	Common Winter Creeper	X	X	X		E	2	□□
Fragaria Chileensis	Sand Strawberry, Wild Strawberry	X	X			H	1	□□
Gazania Hybrids (Ringens)	Treasure Flower, Gazania	X	X	X		H	1	□□
Gazania Ringens Leucolaena	Trailing Gazania	X	X	X		H	1	□□
Hedera Helix 'Hahn's'	Hahn's Ivy			X				
Helianthemum Nummularium	Sunrose	X	X	X		E	2	□□□
Hemerocallis	Day Lily			X				
Hypericum Beaniei	Henry St. John's Wort	X	X			E	4	□□
Hypericum Calycinum	Aaron's Beard	X	X	X		E	1	□□
Juniperus Horizontalis 'Bar Harbor'	Bar Harbor Juniper	X	X	X		C	7	□□□

Juniperus Horizontalis 'Plumosa'	Youngstown Juniper, Andorra Juniper	X	X	X		C	7	□□□
Juniperus Horizontalis 'Prince Of Wales'	Prince of Wales Juniper	X	X	X		C	7	□□□
Juniperus Horizontalis 'Variegata'	Variegated Creeping Juniper	X	X	X		C	4	□□□
Juniperus Horizontalis 'Wiltonii'	Blue Rug Juniper, Blue Carpet Juniper	X	X	X		C	7	□□□
Lampranthus Spectabilis	Trailing Iceplant	X		X		H	1	□□□
Lantana Camara	Bush or Common Lantana	X				E	3	□□
Lantana Montevidensis	Trailing Lantana	X				E	3	□□
Lantana X 'New Gold'	New Gold Lantana	X				E	2	□□
Lippia Repens	Lippia	X		X		H	1	□□□
Lonicera	Honeysuckle*			X				
Lonicera Japonica	Japanese Honeysuckle	X	X	X		E	5	□□
Mentha Requierii	Jewel Mint of Corsica (Corsican Mint)	X	X	X		H	1	□□
Mentha Spp.	Mint	X	X	X		H	1	□□
Nierembergia Hippomanica Violaceae	Cupflower	X		X		H2	1	□□
Oenthera Ber Landieri	Evening Primrose			X				
Osteospermum Fruticosum	Trailing African Daisy, Freeway Daisy	X	X	X		H	1	□□
Pachysandra Terminalis	Japanese Spurge	X		X		H	1	□□
Phyla Nodiflora	Lippia	X		X		H1	1	□□
Potentilla Fruticosa	Cinquefoil	X		X		H	2	□
Potentilla Tabernaemontanii	Spring Cinquefoil	X		X		H	1	□
Potentilla Verna	Cinquefoil			X				
Rosmarinus 'Prostratus'	Creeping Rosemary*,**			X				
Sagina Subulata	Irish Moss	X		X		H	1	□
Sagina Subulata 'Aurea'	Scotch Moss	X		X		H	1	□
Santolina Virens	Green Cotton Lavender**			X				
Teucrium Chamaedrys 'Prostratum'	Dwarf Germander	X	X	X		E	2	□□
Thymus Citriodorus	Lemon Scented Thyme	X		X		H	1	□□□
Thymus Praecox Arcticus	Mother-Of-Thyme	X		X		H	1	□□□
Thymus Pseudolanuginosus	Woolly Thyme	X		X		H	1	□□□
Thymus Vulgaris	Common Thymus	X		X		H	1	□□□
Trachelospermum Asiaticum	Asian Star Jasmine	X	X	X		E	1	□□

Trachelospermum Jasinoides	Star Jasmine	X	X	X		E	1	□□
Trifolium Fragiferum O'Connor	O'Conner's Legume	X		X		E	1	□□
Verbena X Hybrida	Garden Verbena	X		X		H	2	□□
Vinca Major	Periwinkle	X	X	X		E	1	□□

Ornamental Grass

Festuca Glauca	Blue Fescue	X	X	X		H	1	□□
Festuca Ovina 'Glaucua'	Blue Fescue	X	X	X		H	1	□□□
Muhlenbergia Capillaris	Pink Muhly	X	X	X		H	3	□□□
Muhlenbergia Rigens	Deer Grass	X	X	X		H	3	□□□
Pennisetum Setaceum	Fountain Grass	X	X	X		H	3	□□
Sisyrinchium Bellum	Blue-Eyed Grass	X	X	X		H	1	□□□
Sisyrinchium California	Golden-Eyed Grass	X	X	X		H	1	□□□
Stipa Calamagrostos	NCN	X	X	X		H	3	□□
Stipa Gigantea	Giant Feather Grass	X	X	X		H	3	□□
Stipa Splendens	NCN	X	X	X		H	3	□□
Stipa Tenuissima	NCN	X	X	X		H	1	□□

Palms

Butia Capitata	Pindo Palm, Jelly Palm	X	X	X		E	10	□□□
Chamaerops Humilis	Mediterranean Fan Palm	X	X	X		E	8	□□□
Chamaerops Humilis V. Cerifera	Moroccan Blue Fan Palm	X	X	X		E	8	□□□
Cycas Revoluta	Sago Palm	X		X		E	4	□□
Dioon Spp.	Mexican Cycad	X		X		E	3	□□
Phoenix Canariensis	Canary Island Date Palm	N	N	X		E	20	□□□
Phoenix Dactylifera	Date Palm	X	X	X		E	20	□□□
Sabal Palmetto	Cabbage Palm	X	X	X		E	8	□□□
Trachycarpus Fortunei	Windmill Fan Palm	X	X	X		E	5	□□□
Trachycarpus Wagnerianus	Miniature Chusan Palm	X	X	X		E	5	□□□
Trithrinax Acanthocoma	Spiny Fiber Palm	X	X	X		H	8	□□□
Washingtonia Filifera	California Fan Palm	X	X	X		E	10	□□□□
Washingtonia Robusta	Mexican Fan Palm	X	X	X		E	10	□□□□

Perennials

Achillea Ageratifolia	Greek Yarrow	X	X	X		H	1	□□□
Achillea Filipendulina 'Cvs.'	Fernleaf Yarrow	X	X	X		H2	2	□□□
Achillea Filipendulina 'Gold Plate'	Yarrow	X	X	X		H	2	□□□
Achillea Filipendulina 'Moonshine'	Yarrow	X	X	X		H	2	□□□
Achillea Millefolium	Yarrow	X	X	X		H	2	□□□
Achillea Tomentosa	Wooly Yarrow	X	X	X		H2	2	□□□
Acornus Gramineus	Sweet Flag	X	X	X		H	1	□□
Agapanthus Orientalis	Lily-of-the-Nile	X	X	X		H2	2	□□
Agapanthus Orientalis 'Peter Pan'	Peter Pan Agapanthus	X	X	X		H2	<1	□□
Aquilegia X Hybrida	Columbine, Fairy Flower	X	X	X		H1	2	□□
Aurinia Saxatile	Basket of Gold	X		X		H	1	□□
Baileya Multiradiata	Desert Marigold	X		X		H	1	□□□□
Bergenia Cordifolia	Saxifraga	S	S	X		H	2	□
Bergenia Crassifolia	Winter Blooming Bergenia	S	S	X		H2	2	□
Callistephus Chinensis	China Aster	X		X		H	1	□□
Canna X Genneralis	Canna	X		X		H1	2	□□
Centaurea Ragusina	Dusty Miller	X	X	X		H2	1	□□□
Chrysanthemum X Superbum 'Cvs.'	Shasta Daisy	X		X		H2	1	□□
Coreopsis Auricuiata Nana	Dwarf Coreopsis	X	X	X		H	2	□□□
Coreopsis 'Early Sunrise'	Coreopsis	X	X	X		H	2	□□□
Coreopsis Lanceolata 'Grandiflora'	Bigflower Coreopsis	X	X	X		H	1	□□□
Coreopsis Tinctoria	Calliopsis	X	X	X		H	1	□□□
Coreopsis Verticilata Cvs.	Threadleaf Coreopsis	X	X	X		H	1	□□□
Coreopsis Verticilata 'Zagreb'	Zagreb Coreopsis	X	X	X		H	1	□□□
Cyperus Papyrus	Papyrus	X		X		H	3	□
Dietes Bicolor	Yellow Fortnight Lily	X	X	X		H2	2	□□□
Dietes Vegeta	Fortnight Lily	X	X	X		H2	2	□□□
Ephedra Viridis	Mormon Tea	X	X	X		E	2	□□□□
Erigeron Karvinskianus	Mexican Daisy	X	X	X		D	2	□□□
Eschscholzia Californica	California Poppy	X		X		H2	1	□□□□
Gaillardia X Grandiflora	Blanket Flower	X		X		H	1	□□
Gaura Lindheimeri	Gaura	X	X	X		H	1	□□□

Geranium Spp.	Cranesbill	X	X	X		H	1	□□
Helichrysum Bracteatum	Strawflower	X		X		H	1	□□
Helleborus Niger	Christmas Rose	X	X	X		H	1	□□
Helleborus Orientalis	Lenten-Rose	X	X	X		H	1	□□
Hemerocallis	Daylily	X	X	X		H2	2	□□
Heuchera Sanguinea	Coral Bells	X		X		H	<1	□□
Iris X Germanica	Bearded Iris	X	X	X		H	1	□□□
Kniphofia Uvaria	Red Hot Poker, Torch Lily, Poker Plant	X	X	X		H	2	□□□
Leucanthemum X Superbum	Shasta Daisy	X		X		H	2	□□
Liriope Muscari	Big Blue Lilyturf	X	X	X		H	1	□□
Marrubium Vulgare	Horehound	X		X		H	1	□□□□
Melampodium Leucanthum	Blackfoot Daisy	X		X		H	1	□□□
Ophiopogon Clarkii	Clark Lily Turf	X	X	X		H		□□
Ophiopogon Jaburan	Giant Lily Turf	X	X	X		H	1	□□
Ophiopogon Japonicus	Mondo Grass	X	X	X		H	1	□□
Ophiopogon Planiscapus Var. Nigrescens	Black Mondo Grass	X	X	X		H	1	□□
Oxalis Spp.	Woodsorrel	X		X		H	1	□□
Penstemon Gloxinioides	Border Penstemon	X	X	X		H1	1	□□□
Penstemon Heterophyllus	Beard Tongue	X	X	X		H1	1	□□□
Penstemon Hybrids	Penstemon (Hybrids)	X	X	X		H	1	□□□
Plecostachys Serpyllifolia	Dwarf Strawflower	X		X		H	1	□□
Psilostrophe Cooperi	Paper Flower	X	X	X		E	1	□□□□
Psilostrophe Tagetina	Woolly Paper Flower	X	X	X		E	1	□□□□
Saxifraga Spp	Saxifrage	S	S	X		H	1	□
Tradescantia Virginiana	Spiderwort	X		X		H1	1	□□
Tulbaghia Violacea	Society Garlic	X	X	X		H2	1	□□
Zantedeschia Aethiopica	Common Calla	X		X		H1	1	□□

Shrubs

Abelia Grandiflora 'Edward Goucher'	Pink Abelia	X	X	X		E	4	□□
Abelia Grandiflora Prostrata	Prostrate Abelia	X	X	X		D	4	□□
Abelia X Grandiflora	Glossy Abelia	X	X	X		E	4	□□□
Abutilon Hybrida	Flowering Maple	S	S	X		E	6	□□
Acanthus Mollis	Bear's Breech	S	S	X		H	3	□
Anisodontea Hypomandarium	Cape Mallow	X		X		E	3	□□
Arbutus Unedo	Strawberry Tree	X	X	X		E	6	□□□□
Arbutus Unedo 'Compacta'	Dwarf Strawberry Tree	X	X	X		E	3	□□□
Arctostaphylos Densiflorus 'Howard McMinn'	Howard McMinn Manzanita	X		X		E	3	□□□□
Arctostaphylos Standforiana	Standford Manzanita	X		X		E	3	□□□
Atriplex Canescens	Four Wing Saltbush	X	X	X X		E	4	□□□□
Atriplex Hymenelytra	Desert Holly	X	X	X		E	2	□□□□
Atriplex Lentiformis	Quail Bush	X	X	X		D	6	□□□□
Atriplex Spp.	Saltbush	X	X	X		E	?	□□□□
Aucuba Japonica	Japanese Aucuba	S	S	X X		E	5	□□
Aucuba Japonica 'Pictura'	Gold Spot Plant	S	S	X		E	5	□□
Aucuba Japonica 'Variegata'	Gold Dust Plant	X		X		E	5	□□
Baccharis Pilularis 'Twin Peaks'	Coyote Bush Prostrate	X	X	X		E	5	□□□
Baccharis Sarothroides	Desert Broom	X	X	X		E	5	□□□
Berberis Darwinii	Darwin Barberry	X	X	X		E	4	□□□
Berberis Thunbergii 'Atropurpurea'	Red-Leaf Japanese Barberry	X	X	X		D	4	□□□
Berberis Thunbergii 'Crimson Pygmy'	Crimson Pygmy Barberry	X	X	X		D	2	□□□
Berberis Thunbergii 'Cvs.'	Japanese Barberry	X	X	X		D	4	□□□
Berberis Thunbergii 'Rosy Glow'	Rosy Glow Barberry	X	X	X		D	4	□□□
Brunfelsia Pauciflora 'Floribunda'	Yesterday, Today, Tomorrow	S	S	X		E	5	□□
Buddleja Davidii	Butterfly Bush			X		E	6	□□
Buxus Microphylla Japonica	Japanese Boxwood	X	X	X		E	3	□□
Buxus Microphylla	Korean Boxwood	X	X	X		E	2	□□

'Koreana'								
Buxus Sempervirens	English Boxwood	X	X	X		E	6	□□
Caesalpinia Gilliesii	Desert Bird-of-Paradise	X	X	X		D	8	□□□□
Caesalpinia Pulcherrima	Red Bird of Paradize	X	X	X		D	5	□□□□
Calliandra Californica	Fairy Duster	X	X	X		E	4	□□□
Calliandra Eriophylla	Fairy Duster, False Mesquite	X	X	X		E	4	□□□
Calliandra Tweedii	Brazilian Flamebush	X	X	X		E	5	□□□
Callistemon Citrinus	Lemon Bottlebrush	X		X		E	6	□□□
Camellia Japonica 'Cvs.'	Shade Camellia	X		X		E	6	□□
Camellia Sansanqua 'Cvs.'	Sun Camellia	S	S	X		E	5	□□
Ceanothus Griseus Var. Horizontalis 'Cvs.'	Carmel Creeper, Yankee Point Ceanothus	X		X		E	4	□□
Chaenomeles Speciosa 'Cvs.'	Flowering Quince	X	X	X		D	4	□□□
Chrysothamnus Nauseosus Albicaulis	Rabbit Brush	X	X	X		H	3	□□□□
Cistus Ladanifer	Crimson Spot Rockrose	X	X	X		E	5	□□□
Cistus Salvifolius	Sageleaf Rockrose	X	X	X		E	5	□□□
Cistus Spp	Rockrose	X	X	X		E	5	□□□
Cistus X Hybridus	White Rockrose	X	X	X		E	5	□□□
Cistus X Purpureus	Orchid Rockrose	X	X	X		E	5	□□□
Coleonema Pulchrum	Pink Breath of Heaven, Pink Diosma	X		X		H	3	□□
Cordia Parivolia	Little Leaf Cordia	X	X	X		E	6	□□
Cordyline Australis	Giant Dracaena	X		X		E	8	□□
Corokia Cotoneaster	Corokia Cotoneaster	X		X		E	3	□□□
Cotoneaster Buxifolius (Glaucophylla)	Brightbead Cotoneaster	X	X	X		D	3	□□□
Cotoneaster Congestus	Cotoneaster	X	X	X		E	1	□□
Cotoneaster Conspicuous 'Decorus'	Neacklace Cotoneaster	X	X	X		E	3	□□
Cotoneaster Dammeri	Bearberry Cotoneaster	X	X	X		D	5	□□
Cotoneaster Divaricatus	Spreading Cotoneaster	X	X	X		D	5	□□
Cotoneaster Franchetii	Franchet Cotoneaster	X	X	X		E	5	□□
Cotoneaster Horizontalis	Rock Cotoneaster	X	X	X		D	4	□□
Cotoneaster Lactus (Parneyi)	Parney Cotoneaster, Red Clusterberry	X	X	X		E	6	□□□
Cotoneaster Microphyllus	Rockspray Cotoneaster	X	X	X		D	4	□□
Cotoneaster Pannosus	Silver-Leaf Cotoneaster	X	X	X		E	6	□□
Cotoneaster Saucifolius Floccosus	Willowleaf Cotoneaster	X	X	X		E	6	□□

Cotoneaster	Cotoneaster			X				
Cytisus Racemosus	Easter Broom			X				
Dalea Frutescens	Black Dalea	X	X	X		E	4	□□□
Dalea Greggii	Trailing Indigo Bush	X	X	X		E	2	□□□
Dalea Pulchra	Indigo Bush	X	X	X		E	4	□□□□
Elaeagnus Pungens	Silverberry	X	X	X		E	6	□□□
Elaeagnus Pungens 'Maculata'	Golden Silverberry	X	X	X		E	6	□□□
Elaeagnus Pungens 'Marginata'	Silver-Edged Silverberry	X	X	X		E	6	□□□
Elaeagnus Pungens 'Variegata'	Yellow-Edged Silverberry	X	X	X		E	6	□□□
Elaeagnus	Elaeagnus			X				
Elaeagnus X Ebbengei	Ebbinge's Silverberry	X	X	X		E	6	□□□
Encelia Farinosa	Encelia	X	X	X		D	2	□□□
Eriogonum Grande Pubescens	Buckwheat	X	X	X		H	4	□□□□
Eriogonum Fasciculatum	California Buckwheat	X	X	X		H	4	□□□□
Eriogonum Jamesii	James Buckwheat	X	X	X		H	4	□□□□
Escallonia Rubra	Red Escallonia	X	X	X		E	5	□□
Escallonia X Exoniensis	Pink Escallonia	X	X	X		E	4	□□
Euonymus Fortunei	Winter Creeper			X				
Euonymus Japonica 'Aureo-Marginata'	Golden Euonymus	X	X	X		E	6	□□
Euonymus Japonica 'Aureo-Variegata'	Gold Spot Euonymus	X	X	X		E	6	□□
Euonymus Japonica 'Grandiflora'	Evergreen Euonymus	X	X	X		E	6	□□
Euonymus Japonica 'Microphylla'	Boxleaf Euonymus	X	X	X		E	2	□□
Euonymus Japonica 'Microphylla Variegata'	Variegated Boxleaf Euonymus	X	X	X		E	2	□□
Euonymus Japonica 'Silver King'	Silver King Euonymus	X	X	X		E	6	□□
Euonymus Japonica 'Silver Queen'	Silver Queen Euonymus	X	X	X		E	6	□□
Euryops Pectinatus	Golden Shrub Daisy	X	X	X		H	3	□□
Euryops Pectinatus Viridis	Green Euryops	X	X	X		H	3	□□
Fallugia Paradoxa	Apache Plume	X	X	X		E	4	□□□□
Fatsia Japonica	Japanese Aralia	X	X	X		E	4	□□
Feijoa Sellowiana	Pineapple Guava	X	X	X		E	6	□□
Forsythia Spp.	Forsythia	X	X	X		D	6	□□□
Forsythia X Intermedia	Forsythia	X	X	X		D	6	□□

Fremontodendron 'California Glory'	Flannel Bush	X	X	X		E	6	□□□□
Fremontodendron Mexicanum	Mexican Flannel Bush	X	X	X		D	7	□□□□
Gardenia Jasminoides 'Cvs.'	Gardenia	X		X		E	5	□□
Gardenia Jasminoides 'Radicans'	Trailing Gardenia	X		X		E	1	□□
Grevillea 'Noellii'	Noel's Grevillea	X		X		C	5	□□□
Heteromeles Arbutifolia	Toyon, Christmas Berry, California Holly *,***	X	X	X		E	6	□□□□
Hibiscus Syriacus	Rose Of Sharon	X	X	X		D	4	□□
Hydrangea Arborescens 'Grandiflora'	Snowhill Hydrangea	S	S	X		D	6	□□
Hydrangea Macrophylla	Hydrangea	S	S	X		D	5	□□
Hydrangea Quercifolia	Oakleaf Hydrangea	S	S	X		D	6	□□
Ilex Aquifolium 'Cvs.'	English Holly	X	X	X		E	5	□□
Ilex Aquifolium 'San Gabriel'	English Holly (Christmas Holly)	X	X	X		E	5	□□

Ilex Aquifolium 'Silver Queen'	Silver Queen Holly	X	X	X		E	5	□□
Ilex Cornuta 'Burfordii'	Burford Holly	X	X	X		E	5	□□
Ilex Cornuta 'Cvs.'	Chinese Holly	X	X	X		E	5	□□
Ilex Cornuta 'Dwarf Burford'	Chinese Holly	X	X	X		E	4	□□
Ilex Vomitoria	Yaupon	X	X	X		E	8	□□
Ilex Vomitoria 'Nana'	Dwarf Yaupon	X	X	X		E	2	□□□
Ilex Vomitoria 'Stokes'	Dwarf Yaupon Holly			X				
Ilex X Altaclarensis 'Wilsonii'	Wilson Holly	X	X	X		E	7	□□
Jasminum Mesnyi	Primrose Jasmine			X				
Juniperus Californica	California Juniper	X	X	X		C	8	□□□□
Juniperus Chinensis 'Alba'	Variegated Prostrate Juniper	X	X	X		C	4	□□□
Juniperus Chinensis 'Armstrongii'	Armstrong Juniper	X	X	X		C	4	□□□
Juniperus Chinensis 'Columnaris'	Blue Point Juniper	X	X	X		C	4	□□□
Juniperus Chinensis 'Gold Coast'	Gold Coast Juniper	X	X	X		C	4	□□□
Juniperus Chinensis 'Golden Armstrong'	Golden Armstrong Juniper	X	X	X		C	4	□□□
Juniperus Chinensis 'Hetzi Glauca'	Hetzi Blue Juniper	X	X	X		C	8	□□□
Juniperus Chinensis 'Hetzii'	Hetz Juniper	X	X	X		C	5	□□□
Juniperus Chinensis 'Kaizuka'	Hollywood Twisted Juniper	X	X	X		C	10	□□□
Juniperus Chinensis 'Keteleeri'	Keteleer Juniper	X	X	X		C	5	□□□
Juniperus Chinensis 'Mint Julep'	MINT JULEP JUNIPER	X	X	X		C	5	□□□
Juniperus Chinensis 'Parsonii'	Prostata Juniper	X	X	X		C	5	□□□
Juniperus Chinensis 'Pfitzerana'	Pfitzer Juniper	X	X	X		C	8	□□□
Juniperus Chinensis 'Pfitzerana Aurea'	Golden Pfitzer Juniper	X	X	X		C	8	□□□
Juniperus Chinensis 'Pfitzerana Glauca'	Blue Pfitzer Juniper	X	X	X		C	8	□□□
Juniperus Chinensis Procumbens	Japanese Garden Juniper	X	X	X		C	8	□□□
Juniperus Chinensis Procumbens 'Nana'	Dwarf Japanese Garden Juniper	X	X	X		C	4	□□□

Juniperus Chinensis 'Robust Green'	Robust Juniper	X	X	X		C	4	□□□
Juniperus Chinensis 'San Jose'	San Jose Juniper	X	X	X		C	5	□□□
Juniperus Chinensis Sargentii	Sargent Juniper	X	X	X		C	5	□□□
Juniperus Chinensis 'Spartan'	Spartan Juniper	X	X	X		C	5	□□□
Juniperus Chinensis 'Torulosa'	Hollywood Twisted Juniper	X	X	X		C	15	□□□
Juniperus Chinensis 'Torulosa Variegata'	Variegated Hollywood Juniper	X	X	X		C	8	□□□
Juniperus Communis Depressa	Prostrate Juniper	X	X	X		C	4	□□□
Juniperus Communis 'Stricta'	Irish Juniper	X	X	X		C	3	□□□
Juniperus Conferta	Shore Juniper	X	X	X		C	5	□□□
Juniperus Occidentalis	Sierra Juniper	X	X	X		C	5	□□
Juniperus Sabina 'Arcadia'	Arcadia Juniper	X	X	X		C	8	□□□
Juniperus Sabina 'Blue Danube'	Blue Danube Juniper	X	X	X		C	4	□□□
Juniperus Sabina 'Broadmore'	Broadmore Juniper	X	X	X		C	8	□□□
Juniperus Sabina 'Buffalo'	Buffalo Juniper	X	X	X		C	6	□□□
Juniperus Sabina 'Cvs.'	Juniper	X	X	X		C		□□□
Juniperus Sabina 'Scandia'	Scandia Juniper	X	X	X		C	5	□□□
Juniperus Sabina 'Tamariscifolia'	Tam Juniper	X	X	X		C	12	□□□
Juniperus Scopulorum	Rocky Mountain Juniper	X	X	X		C		□□□
Juniperus Scopulorum 'Blue Heaven'	Blue Heaven Juniper	X	X	X		C	2	□□□
Juniperus Scopulorum 'Gray Gleam'	Gray Gleam Juniper	X	X	X		C	5	□□□
Juniperus Scopulorum 'Pathfinder'	Pathfinder Juniper	X	X	X		C	8	□□□
Juniperus Scopulorum 'Skyrocket'	Skyrocket Juniper	X	X	X		C	2	□□□
Juniperus Scopulorum 'Tolleson'	Tolleson's Juniper	X	X	X		C	6	□□□
Juniperus	Juniper			X				
Juniperus Squamata'meyeri'	Meyer Juniper	X	X	X		C	2	□□□
Juniperus Virginiana	Eastern Red Cedar	X	X	X		C	15	□□□
Juniperus Virginiana 'Silver Spreader'	Silver Spreader Juniper	X	X	X		C	5	□□□

Lagerstoemia Indica 'Cvs.'	Crape Myrtle	X	X	X		D	8	□□
Larrea Tridentata	Creosote Bush	X	X	X		E	8	□□□□
Lavandula Angustifolia	English Lavender	X		X		E	2	□□□
Lavandula Spp.	Lavender	X		X		E		□□
Leucophyllum Frutescen 'Alba'	Texas Ranger	X	X	X		E	5	□□□□
Leucophyllum Frutescen 'Compacta'	Texas Ranger	X	X	X		E	4	□□□□
Leucophyllum Frutescen 'Green Cloud'	Texas Ranger	X	X	X		E	5	□□□□
Leucophyllum Frutescen 'Silver Cloud'	Texas Ranger	X	X	X		E	5	□□□□
Leucophyllum Laevigatum	Chihuahuan Sage	X	X	X		E	4	□□□
Ligustrum Japonicum 'Cvs'	Japanese Privet	X	X	X		E		□□
Ligustrum Japonicum 'Rotundifolium'	Curlyleaf Ligustrum	X	X	X		E	2	□□
Ligustrum Japonicum 'Silver Star'	Silver Star Privet	X	X	X		E	6	□□
Ligustrum Japonicum 'Texanum'	Wax-Leaf Privet, Texas Privet	X	X	X		E	6	□□
Ligustrum Ovalifolium	California Privet	X	X	X		E	15	□□
Mahonia Aquifolium	Oregon Grape	X	X	X		E	5	□□□
Mahonia Aquifolium 'Compacta'	Dwarf Oregon Grape	X	X	X		E	3	□□
Mahonia Bealei	Leather Leaf Mahonia	X		X		E	3	□□□
Mahonia Lomarifolia	Chinese Holly Mahonia	X		X		E	3	□□□
Mahonia Nervosa	Longleaf Mahonia	X		X		E	2	□□
Mahonia Repens	Creeping Mahonia	X		X		E	2	□□
Myrtus Communis	Myrtle	X	X			E	5	□□□
Myrtus Communis 'Compacta'	Dwarf Myrtle	X	X	X		E	3	□□
Nandina Domestica 'Harbour Dwarf'	Harbour Dwarf Nandina	X	X	X		E	2	□□
Nandina Domestica 'Nana Purpurea'	Dwarf Heavenly Bamboo	X	X	X		E	2	□□
Nandina Domestica 'Royal Princess'	Royal Princess Nandina	X	X	X		E	2	□□
Olea Europaea 'Skylark Dwarf'	Dwarf Olive	X	X	X		E	10	□□□
Osmanthus Fragrans	Sweet Osmanthus	X	X	X		E	5	□□
Osmanthus Heterophyllus	Holly Olive, Holly Leaf Osmanthus, False Holly	X	X	X		E	5	□□
Osmanthus Heterophyllus 'Variegatus'	Variegated False Holly	X	X	X		E	5	□□

Pelargonium Hortorum	Geranium	X		X		H	1	□□
Perovskia Spp.	Russian Sage	X	X	X		E	3	□□□
Philadelphus Coronarius	Sweet Mockorange	X	X	X		D	4	□□
Philadelphus X Virginalis	Double Mock Orange	X	X	X		D	3	□□
Phormium Tenax 'Atropurpureum'	Purple New Zealand Flax	X	X	X		H	5	□□
Phormium Tenax 'Aureum'	Golden New Zealand Flax	X	X	X		H	5	□□
Phormium Tenax 'Bronze'	Bronze New Zealand Flax	X	X	X		H	5	□□
Phormium Tenax 'Cvs.'	New Zealand Flax	X	X	X		H	5	□□
Phormium Tenax 'Rubrum'	Red New Zealand Flax	X	X	X		H	5	□□
Phormium Tenax 'Tiny Tim'	Dwarf New Zealand Flax	X	X	X		H	2	□□
Phormium Tenax 'Variegatum'	Variegated New Zealand Flax	X	X	X		H	3	□□
Photinia Fraseri	Red Photinia			X				
Photinia Serrulata	Chinese Photinia	X	X	X		E	6	□□□
Photinia X Fraseri	Fraser Photinia	X	X	X		E	6	□□□
Phyllostachys Aurea	Golden Bamboo	X	X	X		H	3	□□
Phyllostachys Spp.	Bamboo	X		X		E		□□
Pinus Mugo Mugo	Mugho Pine	X	X	X		C	5	□□□
Pittosporum Tobira 'Mariposa'	Cream De Mint Pittosporum	X	X	X		E	4	□□□
Pittosporum Tobira 'Variegata'	Variegated Mock Orange	X	X	X		E	5	□□□
Pittosporum Tobira 'Wheeler's Dwarf'	Wheeler's Dwarf Pittosporum	X	X	X		E	4	□□□
Platycladus Orientalis 'Cvs.'	Arborvitae	X	X	X		C		□□□
Prunus Cistena	Dwarf Red-Leaf Plum	X	X	X		D	5	□□
Prunus Ilicifolia	Hollyleaf Cherry	X	X	X		E	6	□□□
Punica Granatum 'Nana'	Dwarf Pomegrante	X	X	X		D	2	□□□
Purshia Mexicana Stansburyana (Cowania Mexicana)	Cliff Rose	X	X	X		E	4	□□
Pyracantha Coccinea Lalandi	Firethorn	X	X	X		E	8	□□
Pyracantha 'Santa Cruz'	Santa Cruz Firethorn	X	X	X		E	5	□□
Rapheolpsis Indica 'Cvs.' – Dwarf Varieties	Indian Hawthorn	X	X	X		E	3	□□□
Rhamnus Alaternus	Italian Buckhorn	X	X	X		E	8	□□□
Rhamnus Californica	Coffeeberry	X	X	X		E	5	□□□

Rhaphiolepis Umbellata	NCN	X	X	X		E		□□
Rhus Lancea	African Sumac	X	X	X		E	8	□□□
Rhus Ovata	Sugar Bush*,***	X	X	X		E	5	□□□
Rhus Trilobata	Squawbush	X	X	X		E	5	□□□□
Romneya Coulteri	Matilija Poppy	X		X		H2	3	□□□
Rosa Damascene	Damask Rose	X	X	X		D	3	□□□
Rosa Hybrida	Climbing Rose	X	X	X		D		□□□
Rosa Minutifolia	Baja California Wild Rose	X	X	X		D	3	□□□
Rosa Multiflora	Japanese Rose	X	X	X		D	6	□□□
Rosa Rugosa	Japanese Rose	X	X	X		D	3	□□□
Rosa	Rose Bush	X	X	X		D	4	□□□
Rosmarinus Officinalis	Rosemary	X	X	X		E	4	□□□
Rosmarinus Officinalis 'Prostratus'	Trailing Rosemary	X	X	X		E	4	□□□
Salvia Clevelandii	Cleveland Sage	X		X		E	4	□□
Salvia Greggii	Autumn Sage	X	X	X		E	2	□□□
Santolina Chamaecyparissus	Lavender Cotton	X	X	X		E	4	□□□□
Santolina Virens	Green Lavender Cotton	X	X	X		E	4	□□□□
Simmondsia Chinensis	Jojoba	X	X	X		E	3	□□□□
Sophora Arizonica	Arizonia Laurel	X	X	X		E	4	□□□
Sophora Secundiflora	Texas Mountain Laurel	X	X	X		E	6	□□□
Spartium Junceum	Spanish Broom			X				
Spiraea Bumalda 'Anthony Waterer'	Dwarf Red Spirea	X	X	X		D	2	□□
Spiraea Cantoniensis	Reeves Spirea	X	X	X		D	5	□□
Spiraea X Vanhouttei	Bridal Spirea	X	X	X		D	5	□□
Syringa Chinensis	Chinese Lilac	X	X	X		D	5	□□□
Syringa Persica 'Cvs.'	Persian Lilac	X	X	X		D	5	□□□
Syringa Vulgaris 'Cvs.'	Common Lilac	X	X	X		D	7	□□□
Tecoma Capensis	Cape Honeysuckle	X		X		E	5	□□
Ternstroemia Gymnanthera	Japanese Ternstroemia	X		X		E	4	□□
Thuja Occidentalis	American Arborvitae	X	X	X		C	10	□□□
Thuja Orientalis "Westmont"	Oriental Arborvitae	X	X	X		C	3	□□□
Thuja Orientalis 'Aurea'	Dwarf Golden Arborvitae (Beckman Dwarf Arborvitae)	X	X	X		C	2	□□□
Thuja Platycladus Orientalis "Westmont"	Westmont Golden Arborvitae			X				
Verbena Peruviana	Peruvian Verbena	X		X		H	4	□□□

Viburnum Japonicum	Japanese Viburnum	X	X	X		E	6	□□
Viburnum Odoratissimum	Sweet Viburnum	X	X	X		D	5	□□
Viburnum Opulus	European Cranberry Bush, Snowball Bush	X	X	X		D	6	□□
Viburnum Opulus'roseum'	Snow Ball	X	X	X		D	6	□□
Viburnum Rhytidophyllum	Leatherleaf Viburnum	X	X	X		E	6	□□
Viburnum Suspensum	Sandankwa Viburnum	X	X	X		E	6	□□
Viburnum Tinus	Roundleaf Viburnum	X	X	X		E	4	□□
Viburnum Tinus 'Spring Bouquet' ('Compactum')	(Compact) Spring Bouquet Viburnum	X	X	X		E	4	□□
Weigela Florida	Weigela	X	X	X		D	6	□□
X Fatshedera Lizei	Botanical Wonder	X	X	X		E	4	□□
Xylosma Congestum	Shiny Xylosma	X	X	X		E	6	□□□
Yucca	Yucca			X				

Trees

Acacia Stenophyll	Shoestring Acacia	X	X	X		E	20	□□□
Acer Palmatum 'cvs.'	Japanese Maple	X		X		D	15	□□
Acer Palmatum Dissectum	Laceleaf Japanese Maple	X		X		D	8	□□
Acer Palmatum 'Dissectum'	Red Cutleaf Maple	X		X		D	6	□
Acer Palmatum 'Dissectum Ever Red'	Dissectum Ever Red	X		X		D	5	□
Acer Palmatum 'Dissectum Viridis'	Japanese Green Lace	X		X		D	6	□□
Acer Palmatum 'Sangokaku'	Coral Bark Maple	X		X		D	8	□□
Aesculus X Carnea	Red Horse Chestnut	X		X		D	15	□□
Albizia Julibrissin	Silk Tree, Mimosa	X	X	X		D	25	□□□
Alnus Cordata	Italian Alder	X		X		D	20	□
Alnus Rhombifolia	White Alder	X		X		D	20	□
Betula Pendula	European White Birch	X	X	X		D	12	□
Brachychiton Populneus	Bottle Tree	X		X		E	20	□□□
Brahea Armata	Mexican Blue Palm	X	X	X		E	5	□□□
Brahea Edulis	Guadalupe Palm	X	X	X		E	5	□□□
Broussonetia Papyrifera	Paper Mulberry	X		X		D	25	□□
Calocedrus Decurrens	Incense Cedar	X	X			C	20	□□□
Carya Illinoensis	Pecan	X				D	25	□□
Catalpa Speciosa	Western Catalpa	X		X		D	30	□□
Cedrus Atlantica 'Cvs.'	Atlas Cedar	X	X	X		C	15	□□□
Cedrus Atlantica 'Glauca'	Blue Atlas Cedar	X	X	X		C	15	□□□
Cedrus Deodara 'Aurea'	Golden Deodar	X	X	X		C	20	□□□
Cedrus Deodara 'Cvs.'	Deodar Cedar	X	X	X		C	25	□□□□
Cedrus Libani	Cedar of Lebanon	X	X	X		C	30	□□□
Celtis Australis	European Hackberry	X	X	X		D	30	□□
Celtis Sinensis	Chinese Hackberry	X	X	X		D	25	□□
Cercidium 'Desert Museum'	Hybrid Palo Verde	X	X	X		D	15	□□□
Cercidium Floridum	Blue Palo Verde	X	X	X		D	15	□□□
Cercidium Microphyllum	Foothills Palo Verde	X	X	X		D	15	□□□
Cercis Canadensis	Eastern Redbud	X	X	X		D	20	□□
Cercis Occidentalis	Western Redbud	X	X	X		D	20	□□□□
Chilopsis Linearis	Desert Willow	X	X	X		D	15	□□□
Chitalpa Tasnkentensis	Hybrid Catalpa			X				
Cordia Boissieri	Texas Olive	X	X	X		E	6	□□
Cotinus Coggygria	Smoke Tree	X	X	X		D	12	□□□

Cotinus Coggygria 'Cvs'	Purple Smoke Tree	X	X	X		D	12	□□□
Crataegus Lavalley	Carriere Hawthorn	X	X	X		D	20	□□□
Crataegus Phaenopyrum	Washington Thorn	X	X	X		D	20	□□□
Crataegus Spp.	Hawthorn			X				
Cupressus Sempervirens 'Stricta'	Italian Cypress	X		X		C	5	□□□
Diospyros Kaki	Japanese Persimmon	X		X		D	10	□□
Elaeagnus Angustifolia	Russian Olive	N	N	X		D	20	□□□
Ficus Carica	Edible Fig	X		X		D	15	□□□
Fraxinus Oxycarpa 'Raywood'	Raywood Ash (Claret Ash)	X	X	X	X	D	20	□□
Fraxinus Pennsylvanica	Marshall Green Ash	X	X	X		D	30	□□
Fraxinus Spp.	Ashes	X	X	X		D		□□
Fraxinus Uhdei	Shamel Ash	X	X	X		D	30	□□
Fraxinus Velutina	Arizona Ash	X	X	X		D	30	□□
Fraxinus Velutina "Rio Grande"	Fantex Ash	X	X	X		D	20	□□
Fraxinus Velutina Glabra 'Modesto'	Modesto Ash	X	X	X		D	40	□□□
Geijera Parviflora	Australian Willow	X	X	X		E	15	□□□
Ginkgo Biloba	Maidenhair Tree	X	X	X		D	40	□□
Gleditsia Triacanthos 'Rubylace'	Red Honey Locust	X	X	X		D	20	□□
Gleditsia Tricanthos	Honey Locust	X	X	X		D	40	□□□
Gleditsia Tricanthos 'Moraine'	Moraine Locust	X	X	X		D	25	□□□
Gleditsia Tricanthos 'Shademaster'	Shademaster Locust	X	X	X	X	D	25	□□□
Gleditsia Tricanthos 'Sunburst'	Sunburst Honey Locust	X	X	X	X	D	30	□□□
Juniperus Californica	California Juniper			X				
Juniperus Occidentalis 'Glauc'	Sierra Juniper			X				
Juniperus Virginiana	Red Cedar Juniper			X				
Koelreuteria Bipinnata	Chinese Flame Tree			X	X			
Koelreuteria Paniculata	Golden Rain Tree	X	X	X	X	D	20	□□□
Laurus Nobilis	Bay Laurel, Sweet Bay Laurel, Grecian Laurel	X		X		E	10	□□□
Ligustrum Lucidum	Glossy Privet	X	X	X		E	15	□□
Liquidambar Styraciflua	American Sweet Gum			X				
Liriodendron Tulipifera	Tulip Tree	X	X	X		D	25	□□
Magnolia (Deciduous Varieties)	Tulip Trees	X	X	X		D	20	□□

Magnolia 'Stellata'	Star Magnolia	X	X	X		D	10	□□
Malus Floribunda 'cvs.'	Flowering Crabapple	X	X	X		D	20	□□
Malus Hybrids	Crabapple	X	X	X		D	20	□□□
Malus spp. (edible)	Apple	X	X			D	20	□□□
Malus X Arnoldiana	Arnold's Crabapple	X	X	X		D	20	□□□
Morus Alba 'Pendula'	Weeping White Mulberry	N	N	X		D	8	□□
Olea Europaea 'Swan Hill'	Swan Hill Olive	X	X	X		E	15	□□□□
Parkinsonia Aculeata	Mexican Palo Verde	X	X	X		D	15	□□□
Paulownia Tomentosa	Sapphire Dragon Tree	X		X		D	25	□□
Picea Pungens	Spruce	X	X	X		C	15	□□
Picea Pungens 'Glauca'	Colorado Blue Spruce	X	X	X		C	15	□□
Pinus Brutia	Brutia Pine	X	X	X		C	20	□□□
Pinus Canariensis	Canary Island Pine	N	N			C	15	□□□
Pinus Cembroides	Mexican Pinon Pine	X	X	X		C	20	□□□□
Pinus Coulteri	Coulter Pine	X	X	X		C	25	□□□
Pinus Edulis	Pinon Pine	X	X	X		C	10	□□□
Pinus Eldarica	Eldarica Pine	X	X	X		C	20	□□□
Pinus Halepensis	Aleppo Pine	X	X	X		C	20	□□□
Pinus Halepensis 'Brutia'	Calabrian Pine			X				
Pinus Monophylla	Single Leaf Pinon Pine	X	X	X		C	10	□□□□
Pinus Nigra	Austrian Black Pine	X	X	X		C	20	□□□
Pinus Pinea	Italian Stone Pine	X	X	X		C	25	□□□
Pinus Roxburghii	Chir Pine, Indian Longleaf Pine	X	X	X		C	20	□□□
Pinus Sabiniana	Digger Pine	X	X	X		C	20	□□□□
Pinus Thunbergiana	Japanese Black Pine	X	X	X		C	10	□□□
Pinus Torreyana	Torry Pine	X		X		C	15	□□□
Pistacia Atlantica	Mt Atlas Pistache	X	X	X		D	30	□□□
Pistacia Chinensis	Chinese Pistache	X	X	X	X	D	30	□□□
Pithecellobium Flexicaule	Texas Ebony	X	X	X		D	20	□□□
Plantanus Acerifolia 'Yardwood' Or 'Bloodgood'	London Plane Tree			X	X			
Platanus Racemosa 'Yardwood', Bloodgood'	California Sycamore	X	X	X		D	35	□□
Platanus Wrightii	Arizona Sycamore	X	X	X		D	35	□□
Platanus X Acerifolia	London Plane Tree	X	X	X		D	35	□□
Podocarpus Macrophyllus	Yew Pine	X		X		D	8	□□
Prosopis Alba	Argentine Mesquite	X	X	X		D	30	□□□
Prosopis Chilensis	Chilean Mesquite	X	X	X		D	30	□□□
Prosopis Glandulosa	Texas Mesquite	X	X	X		D	30	□□□

Prosopis Glandulosa Glandulosa	Honey Mesquite	X	X			D	30	□□□
Prosopis Glandulosa torreyana	Mesquite	X	X			D	30	□□□
Prunus Ambygdalus	Almond	X				3	15	□□□
Prunus Blireiana	Flowering Plum	X	X	X		D	15	□□
Prunus Caroliniana	Carolina Cherry Laurel	X	X	X		E	15	□□
Prunus Cerasifera 'Atropurpurea'	Purple Leaf Plum	X	X	X		D	20	□□
Prunus Cerasifera 'Thundercloud'	Thundercloud Flowering Plum	X	X	X		D	20	□□
Prunus Persica'double Pink'	Peach	X		X		D	10	□□
Punica Granatum	Common Pomegranate	X	X	X		D	6	□□□
Pyrus Calleryana 'Aristocrat'	Aristocrat Pear	X	X	X		D	15	□□
Pyrus Calleryana 'Bradford'	Bradford Pear	X	X	X	X	D	15	□□
Pyrus Kawkamii	Evergreen Pear	X	X	X		D	15	□□
Quercus Agrifolia	Coast Live Oak, California Live Oak	X	X	X		E	25	□□□
Quercus Buckleyi	Spanish Oak			X		D	20	□□□
Quercus Chrysolepis	Canyon Live Oak			X		E	20	□□□
Quercus Douglasii	Blue Oak			X		D	25	□□□
Quercus Emoryi	Emoryi Oak	X		X		E	25	□□□
Quercus Frainetto	Italian Oak			X		D	30	□□□
Quercus Fusiformis	Escarpment Live Oak			X		D	20	□□□
Quercus Ilex	Holly Oak	X	X	X		E	20	□□□
Quercus Lobata	Valley Oak	X		X		E	20	□□□
Quercus Macrocarpa	Burr Oak			X		D	30	□□□
Quercus Myrsinifolia	Chinquapin Oak			X		D	25	□□□
Quercus Palustris	Pin Oak	X		X		D	20	□□
Quercus Virginiana	Southern Live Oak	X	X	X		D	20	□□
Robina 'Purple Robe'	Purple Robe Locust	X	X	X		D	25	□□□
Robinia Ambigua 'Idahoensis'	Idaho Locust	X	X	X	X	D	25	□□□
Robinia Pseudoacacia	Black Locust	X	X	X		D	25	□□□
Sequoia Sempervirens	Coastal Redwood	X		X		C	15	□□
Sequoiadendron Giganteum	Giant Sequoia	X	X	X		C	20	□□□
Sophora Japonica	Japanese Pagoda Tree	X	X	X		D	30	□□
Ulmus Parvifolia	Chinese Elm	X	X	X		D	35	□□
Vitex Angus-Castus	Chaste Tree	X	X	X		D	20	□□
X Chitalpa Tashkentensis	Chitalpa	X	X	X		D	20	□□□

Zelkova Serrata	Japanese Zelkova	X	X	X	X	D	20	□□
Zizyphis Jujuba	Chinese Jujuba	X	X	X		D	20	□□□

Vines

Campsis Radicans	Trumpet Vine	X	X	X		D	5	□□
Campsis Spp.	Trumpet Creeper	X	X	X		D	5	□□
Campsis Tagliabuana "Madam Galen"	Trumpet Creeper	X	X	X		D	5	□□
Clematis Armandii	Evergreen Clematis	X		X		E	5	□□
Clematis Hybrids	Deciduous Clematis	X		X		D	5	□□
Clytostoma Callistegioides	Lavender Trumpet Vine	X		X		E	8	□□
Distictis Buccinatoria	Blood-Red Trumpet Vine	X	X	X		E	8	□□
Fallopia Aubertii	Silver Lace Vine	X		X		D	NA	□□
Ficus Pumila	Creeping Fig	X	X	X		E	1	□□
Gelsemium Sempervirens	Carolina Jessamine	X	X	X		D	8	□□
Hardenbergia Violacea	Hardenbergia			X				
Helix Hedra	English Ivy			X				
Jasminum Mesneyi	Primrose Jasmine	X		X		E	5	□□
Loniceria Japonica 'Halliana'	Hall's Honeysuckle	X	X	X		E	5	□□
Macfadyena Unguis-Cati	Cat's Claw	X		X		E	5	□□
Parthenocissus Quinquefolia	Virginia Creeper	X	X	X		D	5	□□
Parthenocissus Tricuspidata	Boston Ivy	X	X	X		D	5	□□
Rosa Banksiae	Bank's Rose, Lady Bank's Rose	X	X	X		D	8	□□
Rosa 'Cecile Brunner'	Cecile Brunner Rose	X	X	X		D	5	□□□
Rosa Wichuraiana	Memorial Rose	X	X	X		D	6	□□□
Tecomaria Capensis	Cape Honeysuckle			X				
Wisteria	Wisteria			X				
Wisteria Floribunda	Japanese Wisteria	X	X	X		D	12	□□
Wisteria Sinensis	Chinese Wisteria	X	X	X		D	12	□□

* Tolerant of Shale Soil

** Fire Retardant

*** California Native

-----End of STANDARDS-----

Chapter 14.05

WATER EFFICIENT LANDSCAPE

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14.05.240 Water waste prevention.

Prior legislation: Ord. U-992.

14.05.010 Purpose and intent.

In accordance with the Water Conservation in Landscaping Act (Government Code Sections 65591 et seq.) the purpose and intent of this chapter is to:

- (A) Promote the values and benefits of landscaping while recognizing the need to utilize water and other resources as efficiently as possible;
- (B) Use water efficiently without waste by setting a maximum applied water allowance as an upper limit for water use and reduce water use to the lowest practical amount;
- (C) Establish a structure for planning, designing, installing, maintaining, and managing water efficient landscapes in new construction and rehabilitated projects;
- (D) Establish provisions for water management practices and water waste prevention for existing landscapes; and
- (E) Implement water conservation policies contained in the City's General Plan. (Ord. 1362 § 1, 2008)

14.05.020 Definitions.

(A) For the purpose of carrying out the intent of this chapter, the words, phrases and terms included herein have the meaning ascribed to them in this section.

- (1) "Application rate" means the depth of water applied to a given area, measured in inches per minute, inches per hour, or gallons per hour.
- (2) "Applied water" means the portion of water supplied by the irrigation system to the landscape.
- (3) "Backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.
- (4) "Best management practices for water waste" means those practices contained within the City of Palmdale Engineering Design Standards, Section VI: Landscape and Irrigation, that reduce or prevent water waste and promote water conservation.
- (5) "Check valve" or "anti-drain valve" means a valve located under a sprinkler head to hold water in the system to prevent drainage from sprinkler heads when the system is off.
- (6) "Conversion factor" (.62) means the number that converts the maximum applied water allowance from acre-inches per acre per year to gallons per square foot per year.
- (7) "Certificate of completion" means the document required under PMC 14.05.060. Sample provided in the City of Palmdale Engineering Standards, Section VI Appendix.
- (8) "Certified landscape irrigation auditor" means a person certified to perform landscape irrigation audits by a professional trade organization or other educational organization.

- (9) “Certified irrigation designer” means a person certified to design irrigation systems by a professional trade organization or other educational organization.
- (10) “Common interest developments” means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1353.8.
- (11) “Controller” means an automatic timing device used to remotely control valves or heads to set an irrigation schedule. A weather-based controller is a controller that uses evapotranspiration or weather data. A self-adjusting irrigation controller is a controller that uses sensor data (i.e., soil moisture sensor).
- (12) “Development proposal” shall mean an application for approval of a specific plan, subdivision, conditional use permit, site plan review, tentative tract map, parcel map or any other discretionary development permit or entitlement application which has been filed with and is pending consideration by the City.
- (13) “Drip irrigation” means any non-spray low volume irrigation system utilizing emission devices with a flow rate equal to or less than two gallons per hour.
- (14) “Ecological restoration project” means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
- (15) “Effective precipitation” or “usable rainfall” means the portion of total precipitation that is used by the plants.
- (16) “Emitter” means a drip irrigation emission device that delivers water slowly from the system to the soil measured as gallons per hour.
- (17) “Established landscape” means the point at which plants in the landscape have developed significant root growth into the site. Typically, most plants are established after one or two years of growth.
- (18) “Establishment period of the plants” means the first year after installing the plant in the landscape, or the first two years if irrigation will be terminated after establishment.
- (19) “Estimated applied water use” means the portion of the estimated total water use that is derived from applied water, as described in PMC 14.05.110. Formulas provided in Engineering Design Standards Section VI.
- (20) “Estimated total water use” means the annual total amount of estimated water needed to keep the plants in the landscaped area healthy. It is based upon such factors as the local evapotranspiration rate, the size of the landscaped area, the types of plants, and the efficiency of the irrigation system, as described in PMC 14.05.110. Formulas provided in Engineering Design Standards, Section VI.
- (21) “ET adjustment factor” means a factor that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. The ET adjustment factor and calculation formula is listed in the City of Palmdale Engineering Design Standards, Section VI.
- (22) “Evapotranspiration rate” means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specific time.
- (23) “Flow rate” means the rate at which water flows through pipes, valves, or emission devices,

measured in gallons per minute, gallons per hour, or cubic feet per second.

(24) “Hardscape” means any durable surface material (pervious and nonpervious).

(25) “Hydrozone” shall mean a portion of the landscaped area having plants with similar water needs that are served by a valve or set of valves with the same schedule. A hydrozone may be irrigated or nonirrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a nonirrigated hydrozone.

(26) “Infiltration rate” means the rate of water entry into the soil expressed as a depth of water per unit of time (i.e., inches per hour).

(27) “Irrigation efficiency” means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum irrigation efficiency for purposes of this chapter is listed in the Engineering Design Standards, Section VI.

(28) “Landscape documentation package” means the documents required under PMC 14.05.080.

(29) “Landscape area” means all of the irrigated planting and turf areas, water features, and up to 10 percent of the square footage of pervious nonirrigated planting areas in a landscape design plan subject to the maximum applied water allowance (MAWA) calculation. The 10 percent of nonirrigated planting area shall be added to the low water use hydrozone area, used in the landscape documentation package. The following is not included in the landscaped area: footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or nonpervious hardscape, and other nonirrigated areas designated for nondevelopment (i.e., open spaces). Designated recreation areas and areas permanently and solely dedicated to edible plants such as orchards and vegetable gardens are subject to the MAWA with an ET adjustment factor not to exceed 1.0.

(30) “Landscape architect” means a person who holds a license to practice landscape architecture in the State under the authority of Government Code Section 5615 (Landscape Architects Practice Act).

(31) “Landscape contractor” means a person licensed (i.e., C-27 license) by the State to construct, maintain, repair, install, or subcontract the development of landscape systems and facilities per Business and Professions Code, Section 7058 and 7059.

(32) “Landscape irrigation audit” shall mean a process to perform site inspections, evaluate irrigation systems, and develop efficient irrigation systems. At a minimum, the audit shall be in accordance with the California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook, the entire document that is hereby incorporated by reference. (See Landscape Irrigation Auditor Handbook, Department of Water Resources, Water Conservation Office, 2004.)

(33) “Landscape project” means a project, for the purposes of this chapter, meeting the requirements under PMC 14.05.030.

(34) “Lateral line” means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

(35) “Low volume irrigation” means any irrigation system with a flow rate equal to or less than 0.75 inches per hour, including drip irrigation, subsurface drip, micro-sprinklers and similar irrigation types.

(36) “Low water use plant material” shall mean trees, shrubs and ground covers that survive with a

limited amount of supplemental water, as recommended by the City of Palmdale Landscape Standards, or as identified in the most recent edition of the following publication: Sunset Western Garden Book, Sunset Books, Lane Publishing Co., Menlo Park, CA.

(37) “Main line” means the pressurized pipeline that delivers water from the water source to the valve or outlet.

(38) “Maximum applied water allowance” means, for design purposes, the upper limit of annual applied water for the established landscaped area as specified in the water efficient landscape worksheet located in the City of Palmdale Engineering Standards, Section VI. It is based upon the area’s reference evapotranspiration, the ET adjustment factor, and the size of the landscaped area. The estimated applied water use shall not exceed the maximum applied water allowance. Formulas available in the Engineering Design Standards, Section VI.

(39) “Microclimate” means the climate of a small, specific area that may contrast with the climate of the overall landscape area due to wind, sun exposure, plant density, proximity to reflective surfaces, etc.

(40) “Mined-land reclamation projects” means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.

(41) “Mulch” means any organic material such as leaves, bark, and straw, or inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation and suppressing weeds.

(42) “Operating pressure” means the pressure at which an irrigation system is designed by the manufacturer to operate.

(43) “Overhead sprinkler irrigation systems” means systems that deliver water through the air (i.e., spray heads and rotors, etc.).

(44) “Overspray” means the water that is delivered beyond the target area, wetting pavements, walks, structures, or other nontargeted areas.

(45) “Plant factor” means a factor that, in combination with irrigation efficiency, when multiplied by reference evapotranspiration, estimates the amount of water used by plants. For purposes of this chapter, the plant factor of low water use plants ranges from zero to 0.3, the plant factor of moderate water use plants ranges from 0.4 to 0.6, and the plant factor of high water use plants ranges from 0.7 to 1.0.

(46) “Precipitation rate” means the rate of application of water measured in inches per hour.

(47) “Project applicant” means the individual or entity submitting a landscape documentation package required under PMC 14.05.030 to request a permit, plan check, or design review from the City. A project applicant may be the property owner or his/her designee.

(48) “Rain sensor” or “rain sensing shutoff device” means a component that automatically suspends the irrigation event when it rains.

(49) “Record drawing” or “as-builts” means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.

(50) “Recreational area” means portions of parks, playgrounds, sports fields, golf course, or schoolyards

in public and private projects where turf provides a playing surface or serves other high use recreational purposes.

(51) “Recycled water,” “reclaimed water,” or “treated sewage effluent water” means treated or recycled waste water of a quality suitable for nonpotable uses such as landscape irrigation and water features. This water is not intended for human consumption.

(52) “Reference evapotranspiration” or “ET_o” means a standard measurement of environmental parameters that affect the water use of plants. ET_o is given in inches per day, month, or year; and is an estimate of the evapotranspiration of a large field of four-to-seven-inch tall, cool-season turf that is well watered. Reference evapotranspiration is used as the basis of determining the maximum applied water allowances so that regional differences in climate can be accommodated. CIMIS data is provided in the City of Palmdale Engineering Design Standards, Section VI Appendix.

(53) “Rehabilitated landscapes” means any modification to existing landscape that requires a permit, plan check, or design review and meets the requirements of PMC 14.05.030.

(54) “Runoff” means water that is not absorbed by the soil or landscape to which it is applied and flows from the landscape area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a slope.

(55) “Soil moisture sensor or sensing device” means a device that measures the amount of water in the soil.

(56) “Soil texture” means the classification of soil based on its percentage of sand, silt, and clay.

(57) “Sprinkler head” means a device that delivers water through a nozzle.

(58) “Static water pressure” means the pipeline or municipal water supply pressure when water is not flowing.

(59) “Station” means an area served by one valve or by a set of valves that operate simultaneously.

(60) “Swing joint” means an irrigation component that provides a flexible, leak-free connection between the sprinkler and lateral pipeline to allow movement in any direction and to prevent equipment damage.

(61) “Turf” means a groundcover surface of mowed grass. Annual bluegrass, Kentucky bluegrass, perennial ryegrass, red fescue, and tall fescue are common cool-season grasses. Bermudagrass, kikyo grass, seashore paspalum, St. Augustinegrass, zoysiagrass, and buffalo grass are common warm-season grasses.

(62) “Valve” means a device used to control the flow of water in the irrigation system. It may also mean all of the sprinklers or emitters in a line controlled by the valve.

(63) “Water use efficiency statement” means a narrative summary of the water use efficiency practices to be applied in the landscape project.

(64) “Water conserving plant species” means a plant species identified as using less water than plants in the same water use category.

(65) “Water efficient landscape worksheet” means the document required as part of the documentation package and is available in Engineering Design Standards, Section VI. (Ord. 1362 § 1, 2008)

14.05.030 Applicability.

(A) Except as provided in subsection (B) of this section, this chapter shall apply to the following:

(1) General. All new construction and rehabilitated landscaping for public agency (including city projects) and private development projects requiring a permit, plan check, or design review.

(2) Single-Family Residences. This chapter applies to all new construction of front yards of single-family residences. It also applies to that portion of street side yards located between the back of curb and any perimeter fence, wall or structure, and visible from the right-of-way of single-family residences for new construction only. It does not apply to back yards, non-street side yards, or other portions of street side yards.

(3) Exception for Cemeteries. Cemeteries have special landscape management needs. Therefore new cemeteries need only comply with PMC 14.05.140, 14.05.150, 14.05.190, and the water efficiency landscape work sheet (available in Engineering Standards Section VI). Existing cemeteries need only to comply with PMC 14.05.210.

(B) This chapter shall not apply to:

(1) Registered historical sites;

(2) Ecological restoration projects that do not require permanent irrigation systems;

(3) Mined-land reclamation projects that do not require a permanent irrigation system. (Ord. 1444 § 1, 2013; Ord. 1362 § 1, 2008)

14.05.040 Required approval for projects.

(A) No development proposal shall be approved unless the person or entity authorized to grant approval therefor finds that the project complies with the criteria set forth in this chapter.

(B) Processing Procedures and Submittal Requirements. As a condition of approval for any development proposal, the applicant shall submit landscape plans meeting the requirements of this chapter to the Engineering and Planning Departments for review. (Ord. 1362 § 1, 2008)

14.05.050 Landscape application documentation package.

Prior to construction, the project applicant shall submit a landscape documentation package to the City Engineering and Planning Departments that meets all the criteria and specifications of this chapter. The specific format of the documentation package shall comply with the City of Palmdale Engineering Department Design Standards for Landscape and Irrigation, Section VI. (Ord. 1362 § 1, 2008)

14.05.060 Eligibility for a certificate of completion.

(A) The project applicant shall:

(1) Prior to backfilling, have a licensed landscape architect, certified irrigation auditor, or licensed landscape contractor conduct a preliminary field observation of the irrigation system;

- (2) Upon project installation, have a licensed landscape architect or licensed landscape contractor conduct a final field observation for the approval of the certificate;
 - (3) Upon project installation, have a certified irrigation auditor conduct a landscape irrigation audit as required under PMC 14.05.150;
 - (4) Submit the signed certificate of completion to the City for approval.
- (B) No certificate of completion shall be approved by the City unless it specifies the following:
- (1) Plants were installed as specified;
 - (2) The irrigation system was installed as designed;
 - (3) An irrigation audit has been performed;
 - (4) Other criteria of this chapter have been met along with a list of any observed deficiencies.
- (C) No certificate will be approved unless the following are submitted with the certificate of completion;
- (1) Irrigation schedule, see PMC 14.05.130;
 - (2) Landscape and irrigation maintenance schedule, see PMC 14.05.140;
 - (3) Landscape irrigation audit schedule, see PMC 14.05.150; and
 - (4) Irrigation audit report.
- (D) Upon receipt of the certificate of completion, the City will:
- (1) Conduct a field inspection of the project for compliance with this chapter. If the project complies, then:
 - (2) Stamp the certificate of completion approved; and
 - (3) Issue a certificate of occupancy, or equivalent, to the project applicant.
- (E) The applicant shall submit copies of the approved certificate of completion to the local retail water purveyor and the property owner or his/her designee.
- (F) A sample of a certificate of completion is available in the City of Palmdale Engineering Design Standards, Section VI. (Ord. 1362 § 1, 2008)

14.05.070 Waivers and variances.

The City may administratively waive or modify one or more requirements of this chapter when unusual difficulties make their strict application impossible, and upon determination that the waiver or variance is consistent with the purpose and intent of this chapter. (Ord. 1362 § 1, 2008)

14.05.080 Landscape documentation package.

All applications for landscape approval shall include the landscape documentation package, which shall

include those documents required by the current City of Palmdale Engineering Design Standards, Section VI: Landscape and Irrigation. (Ord. 1362 § 1, 2008)

14.05.090 Soil management plan.

All applications for landscape approval shall include a soil management plan that addresses the soil attributes of the project site and shall include a laboratory soil analysis and an on-site assessment with a statement of recommendations by a qualified soil specialist. A soil management plan meeting the following criteria shall be submitted as part of the landscape documentation package:

(A) A laboratory soil analysis of soil samples from the project site, prior to installation, that evaluates physical and chemical properties shall be required. At a minimum, the soil analysis report shall include:

(1) Soil texture (percent clay, silt, sand), indicating the percentage of organic matter;

(2) Approximate soil infiltration rate (either measured or derived from the soil texture infiltration rate tables). A range of infiltration rates shall be noted where appropriate;

(3) PH;

(4) Total soluble salts; and

(5) Other soil physical or chemical properties relevant to improving water use efficiency and maintaining plant health (e.g., conductivity, nitrogen, phosphorus, potassium, calcium, magnesium, sodium, sulfur, etc.).

(B) A laboratory soil analysis may be excluded if a qualified soil specialist or scientist provides a certified statement addressing reasons for not completing such a soil analysis.

(C) Prior to installation, an on-site soil assessment by a qualified soil specialist that identifies soil attributes or conditions that may minimize water use efficiency or limit plant growth shall be required. The on-site soil assessment shall:

(1) Identify planting or turf areas that may need amendment;

(2) Provide a statement of recommendations to correct or improve soil conditions (i.e., applying organic compost as a soil amendment in planting and turf areas);

(3) Conduct a further analysis of soil conditions (i.e., soil profile, hardpan, bulk density, soil toxicity, salinity, etc.), where applicable.

(D) A project applicant shall implement the recommendations from the on-site soil assessment and apply any relevant information from the on-site soil assessment to the design plans. (Ord. 1362 § 1, 2008)

14.05.100 Landscape design plan.

For the efficient use of water, a landscape shall be carefully designed and planned for the intended function of the project. A landscape design plan meeting the following design criteria and specifications shall be submitted as part of the landscape documentation package.

(A) Criteria.

(1) Plant Material.

(a) Any plant may be selected from the City of Palmdale approved plant list for the landscape, providing the estimated applied water use recommended for the project site does not exceed the maximum applied water allowance. To encourage the efficient use of water, the following is highly recommended:

(i) Protection and preservation of native species and natural vegetation.

(ii) Selection of water conserving plant species and turf species.

(iii) Selection of trees based on the City of Palmdale approved tree list.

(iv) Plants shall be selected and planted appropriately based upon their adaptability to the climate, geologic, and topographical conditions of the project site. To encourage the efficient use of water, the following is highly recommended:

(v) Use the Sunset Western Climate Zone System, which lists the City of Palmdale as Zone 11.

(vi) Recognize the horticulture attributes of plants (i.e., mature plant size, invasive surface roots, etc.) to minimize damage to property or infrastructures (e.g., buildings, sidewalks, power lines, etc.).

(vii) Consider the solar orientation for plant placement to maximize summer shade and winter solar gain.

(b) A landscape design plan for projects in fire-prone areas shall address fire safety and prevention. A defensible space or zone around a building or structure is required per California Public Resources Code 4291(a) and (b). Avoid fire-prone plant materials and mulches.

(c) Invasive species of plants shall be avoided, especially near parks, buffers, greenbelts, water bodies, and open spaces because of their potential to cause harm in sensitive areas.

(d) The architectural guidelines of a common interest development, which includes community apartment projects, condominium projects, planned developments, and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low water use plants as a group.

(2) Turf.

(a) There will be no turf permitted in any single-family residential front yard. There will be no turf permitted in that portion of street side yards located between the back of curb and any perimeter fence, wall or structure, and visible from the right-of-way of single-family residences, whether new construction or rehabilitated landscaping.

(b) No turf permitted on any multifamily project, except for designated active recreational areas.

(c) No turf permitted on any commercial or industrial project, unless specifically approved by the Director of Planning and/or City Engineer on designated recreational areas only.

(d) Turf areas shall be sized and shaped to minimize irrigation overspray and runoff.

(e) Installation of turf on slopes greater than 4:1 (horizontal to vertical) shall not be permitted.

(f) Installation of long, narrow, or irregularly shaped turf areas less than eight feet in width in any direction shall be irrigated with subsurface irrigation or other low volume irrigation technology.

(g) Irrigated areas (including turf) within 24 inches of nonpermeable hardscape shall be irrigated with drip irrigation or subsurface irrigation technology unless waived by the Public Works Director, Director of Planning, or City Engineer.

(3) Water Features.

(a) Recirculating water shall be used for decorative water features.

(b) Where available, recycled water shall be used as the source for water features.

(c) Surface area of a water feature shall be included in the maximum applied water allowance (MAWA) calculation. The evaporation rate for all water features shall be equivalent to the evapotranspiration rate of a high water use plant.

(d) Pool and spa covers are highly recommended.

(4) Mulch. A minimum two-inch layer of mulch shall be applied on all exposed surfaces of planting areas except in turf areas, and creeping or rooting groundcovers. In mulched planting areas, the use of drip irrigation is highly recommended.

(B) Specifications. The landscape design plan shall be drawn on project base sheets at a scale that accurately and clearly identifies the following specifications, where applicable:

(1) Site.

(a) Location map with north arrow, scale, and legal description of the property.

(b) Project name.

(c) Title block with name, license number, mailing address, email address, and telephone number of licensed landscape architect.

(d) Total landscape area (square feet).

(e) Benchmark name, elevation, and location.

(f) Topography with proposed contour lines and elevations.

(g) Property lines and setbacks.

(h) Street names.

(i) Location of all utilities (e.g., telephone, electrical, gas, sewer, drainage, etc.). The use of this information is limited to the landscape design and installation.

(j) Location and details of existing and proposed public improvements within right-of-way (e.g., curb, gutter, sidewalk, street light, fire hydrants, driveways, or approaches, etc.).

(2) Hydrozone.

(a) Delineate and label each hydrozone by number, letter, or other method.

(b) Indicate the square footage of each hydrozone.

- (c) Identify each hydrozone as low, moderate, high water use, etc.
 - (d) Identify recreational areas (see PMC 14.05.020(A)(50)).
 - (e) Identify areas permanently and solely dedicated to edible plants.
 - (f) Identify any other pertinent factors (e.g., sun exposure, microclimate, etc.).
- (3) Plant.
- (a) Location of all plant material (e.g., turf, annuals, perennials, groundcovers, shrubs, trees and other vegetation, etc.).
 - (b) Detailed legend explaining all the symbols used in the landscape design plan including botanical names, common names, quantity, container size, etc.
- (c) Mulch.
- (i) Type of mulch.
 - (ii) Depth (inches).
- (4) Design Elements.
- (a) Water features.
 - (b) Hardscapes (pervious and nonpervious).
 - (c) Existing natural features including, but not limited to, rock outcroppings, creeks or streams, wetlands, and plant materials that will remain.
 - (d) Other.
 - (i) Installation details for the landscape including soil preparation, plant material installation, tree planting and staking, and any other applicable details.
 - (ii) Location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Examples include, but are not limited to:
 - (iii) Infiltration beds, swales, and basins that allow water to collect and soak into the ground.
 - (iv) Constructed wetlands and retention ponds that retain water, handle excess flows and filter pollutants.
 - (v) Pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff (volume and velocity).
 - (vi) Each sheet of the landscape design plan shall contain the following statement along with a licensed landscape architect's or licensed landscape contractor's stamp and signature: "I have agreed to comply with the criteria and specifications of the ordinance and I have applied them accordingly for the efficient use of water in the landscape design plan." (Ord. 1362 § 1, 2008)

14.05.110 Irrigation design plan.

For the efficient use of water, an irrigation system shall meet all irrigation design criteria and specifications, manufacturer's specifications, and any City of Palmdale code requirements. An irrigation system and its related components shall be planned and designed to allow for proper installation, management and maintenance. An irrigation design plan meeting the following design criteria and specifications shall be submitted as part of the landscape documentation package:

(A) Criteria.

(1) System.

(a) Dedicated (separate) landscape water meters shall be installed for all projects greater than 5,000 square feet, except for single-family residences (authority cited: Statutes of 2006, AB 1881, Chapter 559, Article 44.5, Section 535). Dedicated landscape water meters are highly recommended on landscape areas less than 5,000 square feet to facilitate water management.

(b) Weather-based irrigation controllers, soil-moisture-based controllers or other self-adjusting irrigation controllers shall be required for all irrigation systems. The controller must be able to accommodate all aspects of the landscape and irrigation design plans.

(c) All irrigation systems shall be designed to avoid excessive pressure. Static water pressure, dynamic or operating pressure and flow reading of the water supply shall be measured at the time of day the system will operate. These pressure and flow measurements shall be conducted at the design phase, if available, or prior to installation, if not available at the design phase.

(d) If the static pressure is above or below the required dynamic pressure of the irrigation system, pressure regulators, booster pumps or other devices shall be installed to meet the required dynamic pressure of the irrigation system.

(e) Sensors (e.g., rain, freeze, wind, etc.), either integral or auxiliary, that suspend irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions.

(f) Ball valves (i.e., gate valve or butterfly valve) shall be required, as close as possible to the point of connection of the water supply, to minimize water loss due to an emergency (i.e., main line break) or repair.

(g) Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the City of Palmdale code (i.e., public health) for additional backflow prevention requirements.

(h) Long, narrow, or irregularly shaped areas less than eight feet in width in any direction shall be irrigated with drip irrigation or low volume irrigation technology.

(i) The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto nontargeted areas, such as adjacent property, nonirrigated areas, hardscapes, roadways or structures.

(j) Individual hydrozones that mix plants of moderate and low water use plants or moderate and high water use plants may be allowed if the EWU calculation is based on the proportions of the respective plant water uses and their plant factors. Individual hydrozones that mix high and low water use plants shall not be permitted.

(B) Specifications. The irrigation design plan shall be drawn on separate project base sheets at a scale identical to the landscape design plan to accurately and clearly identify the following specifications, where applicable:

(1) Site.

(a) Location map with north arrow, scale, and legal description of the property.

(b) Project name.

(c) Title block with name, license/certification number, mailing address, email address, and phone number of licensed landscape architect or certified irrigation designer, etc.

(d) Benchmark name, elevation, and location.

(e) Topography with proposed contour lines and elevations.

(f) Property lines and setbacks.

(g) Street names.

(h) Location of all utilities (e.g., telephone, electrical, gas, sewer, drainage, etc.). The use of this information is limited to the landscape design and installation.

(i) Location and details of existing and proposed public improvements within right-of-way (e.g., curb, gutter, sidewalk, street lights, fire hydrants, driveways, other approaches, etc.).

(2) Irrigation System.

(a) Layout of the irrigation system and all related components.

(b) Detailed legend explaining all the symbols used in the irrigation design plan.

(c) Location, manufacturer, model, type and size of all components of the irrigation system such as:

(d) Water meters.

(e) Controllers.

(f) Valves.

(g) Check valves.

(h) Main lines and lateral lines (indicate depth).

(i) Swing joints or other riser-protection components.

(j) Sprinkler heads, drip emitters and other emission devices.

(k) Sensors (e.g., rain, freeze, wind, etc.).

(l) Soil moisture sensors.

- (m) Pressure regulators.
- (n) Pumps.
- (o) Backflow prevention devices.
- (p) Quick couplers.
- (q) Other related components.
- (3) Hydrozone. Delineate and label each hydrozone by number, letter or other method.
 - (a) Indicate the square footage of each hydrozone.
 - (b) Identify each hydrozone as low, moderate, or high water use, etc.
 - (c) Identify recreational areas (see PMC 14.05.020(A)(50)).
 - (d) Identify areas permanently and solely dedicated to edible plants.
 - (e) Identify any other pertinent factors (e.g., sun exposure, microclimate, etc.).
- (4) Hydraulics.
 - (a) Static water pressure (pounds per square inch, psi).
 - (b) Recommended system operating pressure range (psi).
 - (c) Acceptable system operating pressure range (psi), minimum and maximum.
 - (d) Flow rate (gallons per minute, gpm) and application rate (inches per hour) for each valve.
- (5) Other.
 - (a) Details for recycled water irrigation systems as specified in PMC 14.05.170.
 - (b) Construction or installation details for irrigation system.
 - (c) Each sheet of the irrigation design plan shall contain the following statement along with a licensed landscape architect's, certified irrigation designer's, or licensed landscape contractor's stamp and signature: "I have agreed to comply with the criteria and specifications of the ordinance and I have applied them accordingly for the efficient use of water in the irrigation design plan."
 - (d) Apply best management practices for installation of irrigation systems. (Ord. 1362 § 1, 2008)

14.05.120 Grading design plan.

For the efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff, and water waste. A grading design plan meeting the following design criteria and specifications shall be submitted as part of the landscape documentation package.

- (A) Criteria.

- (1) The grading design plan shall delineate configurations and elevations of all the landscaped areas, including the height of graded slopes, drainage patterns, pad elevations, and finished grade.
 - (2) Grading of a project site shall avoid disturbing natural drainage patterns and avoid soil compaction in landscape areas.
- (B) Specifications.
- (1) Site.
 - (a) Location map with north arrow, scale, and legal description of the property.
 - (b) Project name.
 - (c) Title block with name, license number, address, and phone number of registered civil engineer, licensed landscape architect's or licensed landscape contractor's stamp and signature: "I have agreed to comply with the criteria and specifications of the ordinance and I have applied them accordingly for the efficient use of water in the grading design plan." (Ord. 1362 § 1, 2008)

14.05.130 Irrigation scheduling.

For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules meeting the following criteria shall be submitted with the certificate of completion:

- (A) Irrigation scheduling shall incorporate the use of evapotranspiration data such as those from the California Irrigation Management Information System (CIMIS) weather stations or other validated weather data or soil moisture monitoring systems to apply the appropriate levels of water for different climates. CIMIS data for Palmdale is available in the Engineering Design Standards for Landscape and Irrigation, Section VI.
- (B) Overhead irrigation should be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions are unfavorable. If allowable hours of irrigation differ from the local retail purveyor, the stricter of the two shall apply. Exceptions for large projects are subject to approval by the Director of Public Works, City Engineer or Director of Planning.
- (C) For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current ETo, so that applied water meets the estimated applied water use. Total annual applied water shall be less than or equal to MAWA.
- (D) Using an appropriate controller, an annual irrigation program with monthly irrigation schedules shall be developed and submitted for each of the following:
 - (1) The plant establishment period;
 - (2) The established landscape; and
 - (3) Temporarily irrigated areas.
- (E) Each irrigation schedule shall include for each station all that apply:
 - (1) Irrigation interval (days between irrigation);

- (2) Irrigation run times (hours or minutes per irrigation event) to avoid runoff;
- (3) Number of cycle starts required for each irrigation event to avoid runoff;
- (4) Amount of applied water scheduled to be applied on a monthly basis;
- (5) Application rate setting;
- (6) Root depth setting;
- (7) Plant type setting;
- (8) Soil type;
- (9) Slope factor setting;
- (10) Shade factor setting;
- (11) Irrigation uniformity or efficiency setting. (Ord. 1362 § 1, 2008)

14.05.140 Landscape and irrigation maintenance schedule.

(A) Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the certificate of completion.

(B) A regular maintenance schedule shall include, but not be limited to, routine inspection, adjustment, and repair of the irrigation system and its components; conducting water audits; prescribing the amount of water applied per landscaped acre; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning and weeding in all landscape areas.

(C) Repair of all irrigation equipment shall be done with the originally specified components or their equivalents.

(D) A project applicant is encouraged to implement sustainable or environmentally friendly practices for overall landscape maintenance. (Ord. 1362 § 1, 2008)

14.05.150 Irrigation audits and audit schedules.

(A) At a minimum, all landscape irrigation audits shall be in accordance with the Irrigation Association Certified Landscape Irrigation Auditor Training Manual (2004), the entire document, which is hereby incorporated by reference.

(B) A certified landscape irrigation auditor shall conduct the audits and produce the audit reports.

(C) For new construction and rehabilitated landscape projects installed subsequent to the effective date of the ordinance codified in this chapter, the project applicant shall fulfill the following requirements for landscape irrigation audits:

- (1) Submit a landscape irrigation audit report with the certificate of completion to the City;
- (2) For landscapes equal to or greater than one acre, submit a schedule of landscape irrigation audits with the certificate of completion to the City;

(3) Implement the recommendations from the landscape irrigation audit report; and

(4) For landscapes equal to or greater than one acre, submit a landscape irrigation audit report every five years to the City.

(D) For new construction and rehabilitated landscape projects installed after the effective date of the ordinance codified in this chapter, except for homeowner-installed, homeowner-provided landscape less than 2,500 square feet, the City shall fulfill the following requirements for landscape irrigation audits:

(1) Annually compare customers' maximum applied water allowances, which are found in the water efficient landscape worksheet (Section C) submitted as part of the landscape documentation package, to customer's water use and identify customers whose landscapes exceed the maximum applied water allowance for at least one year, to the extent that customer water use information is available to the City.

(2) Annually conduct landscape irrigation audits on a minimum of 20 percent of the total customer landscapes identified in subsection (D)(1) of this section.

(a) The City shall obtain permission from the project applicant to access the property for the purposes of conducting a landscape irrigation audit.

(b) The City's cost of conducting the landscape irrigation audit shall be paid by the project applicant.

(c) The City of Palmdale shall make a good faith effort to obtain necessary water use information from the local retail water purveyor. (Ord. 1362 § 1, 2008)

14.05.160 Irrigation efficiency.

For the purpose of determining the maximum applied water allowance, the irrigation efficiency statistics are available in the Engineering Design Standards, Section VI. (Ord. 1362 § 1, 2008)

14.05.170 Recycled water.

(A) The installation of recycled water irrigation systems (i.e., dual distribution systems) shall be required to allow for the current and future use of recycled water, unless a written exemption has been granted as described in subsection (B) of this section.

(B) Irrigation systems shall make use of recycled water unless a written exemption has been granted by the local water agency, stating that recycled water meeting all public health codes and standards is not available and will not be available in the foreseeable future.

(C) All recycled water irrigation systems shall be designed and operated in accordance with all City of Palmdale and State codes.

(D) If the irrigation water (recycled water or blended water) has electrical conductivity equal to or greater than three deciSeimens per meter (dS/m) or three millimhos per centimeter (mmh/cm) or 2,000 mg per liter total dissolved solids (TDS), a leaching fraction of up to 10 percent may be included in the MAWA calculation. The leaching fraction shall not exceed 10 percent of MAWA.

(E) For more information on recycled water, see the University of California Agriculture and Natural Resources Landscape Plant Salt Tolerance Selection Guide for Recycled Water Irrigation (2005), the entire document, which is hereby incorporated by reference. (Ord. 1362 § 1, 2008)

14.05.180 Stormwater management.

(A) Stormwater management combines practices to minimize runoff and water waste to recharge groundwater and to improve water quality. Implementing stormwater best management practices into the landscape, irrigation, and grading design plans to minimize runoff and increase on-site retention and infiltration are highly recommended.

(B) Project applicants shall refer to the City or Regional Water Quality Control Board for information on any stormwater ordinances and stormwater management plans. (Ord. 1362 § 1, 2008)

14.05.190 Public education.

(A) Publications. The City of Palmdale will provide information to owners of new, single-family residential homes regarding the design, installation, management, and maintenance of water efficient landscapes.

(B) Model Homes.

(1) All model homes that are landscaped shall demonstrate via signs and information provided by the developer showing the principles of water efficient landscapes described in this chapter.

(2) Signs shall be used to identify the model as an example of a water efficient landscape and featuring elements such as hydrozones, water efficient irrigation equipment and other elements which contribute to the overall water efficient theme.

(3) Information shall be provided to prospective homeowners about designing, installing and maintaining water efficient landscapes. The information provided should also include potential cost savings associated with water conservation techniques. (Ord. 1362 § 1, 2008)

14.05.200 Provisions for existing landscapes.

Existing landscaping shall comply with PMC 14.05.210. (Ord. 1362 § 1, 2008)

14.05.210 Landscape irrigation audits.

For existing landscapes installed before the effective date of the ordinance codified in this chapter, the following shall apply:

(A) At a minimum, all landscape irrigation audits shall be in accordance with the Irrigation Association Certified Landscape Irrigation Auditor Training Manual (2004).

(B) A certified landscape irrigation auditor shall conduct all irrigation audits.

(C) For existing landscapes equal to or greater than one acre (43,560 square feet), the property owner or his/her designee of the landscape project shall fulfill the following requirements for landscape irrigation audits:

(1) Submit a landscape irrigation audit report every five years to the City.

(2) Implement the water management and maintenance recommendations from the landscape irrigation

audit report.

(D) For existing landscapes equal to or greater than 2,500 square feet, the City will fulfill the following irrigation audit requirements:

(1) Annually survey and compare customer's landscape water use to local reference evapotranspiration and identify customers whose landscapes exceed 80 percent of local reference evapotranspiration for at least one year, to the extent that customer water use information is available to the City.

(2) Annually conduct landscape irrigation audits on a minimum of 20 percent of the total customer landscapes identified in subsection (D)(1) of this section.

(a) The City shall obtain permission from the property owner or his/her designee to access the property for the purposes of conducting a landscape irrigation audit.

(b) The property owner or his/her designee shall pay the City's cost of conducting the landscape irrigation audit.

(c) The City shall make a good faith effort to obtain necessary water use information from the local retail water purveyor. (Ord. 1362 § 1, 2008)

14.05.220 Compliance for new landscaping.

The City shall not issue a certificate of occupancy or equivalent until the project is in full compliance with this chapter. (Ord. 1362 § 1, 2008)

14.05.230 Enforcement.

(A) It is unlawful for any person to violate any provision or to fail to comply with any of the mandatory requirements of this chapter. This chapter is enforceable as set forth in PMC Title 1 and violations of this chapter are punishable as set forth therein.

(B) It shall constitute a new and separate offense for each and every day during any portion of which a violation of, or failure to comply with, any provision or requirement of this code is committed, continued, or permitted by any person, and such person shall be punished accordingly as provided in PMC Title 1. (Ord. 1362 § 1, 2008)

14.05.240 Water waste prevention.

(A) The City of Palmdale shall encourage the reduction of water waste resulting from inefficient landscape irrigation by prohibiting runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, nonirrigated areas, walks, roadways, or structures through the adherence with best management practices as contained in the City of Palmdale Engineering Design Standards, Section VI: Landscape and Irrigation. The City may, at the discretion of the Director of Public Works, require the property owner to conduct a landscape irrigation audit and make corrections to the landscape based on the findings of the water audit. At a minimum, the audit shall be in accordance with the California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook published in 2004.

(B) Failure to comply with the direction of the Director of Public Works within a period of 30 days after

receipt of such notice shall be deemed a violation of this chapter. (Ord. 1362 § 1, 2008)

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