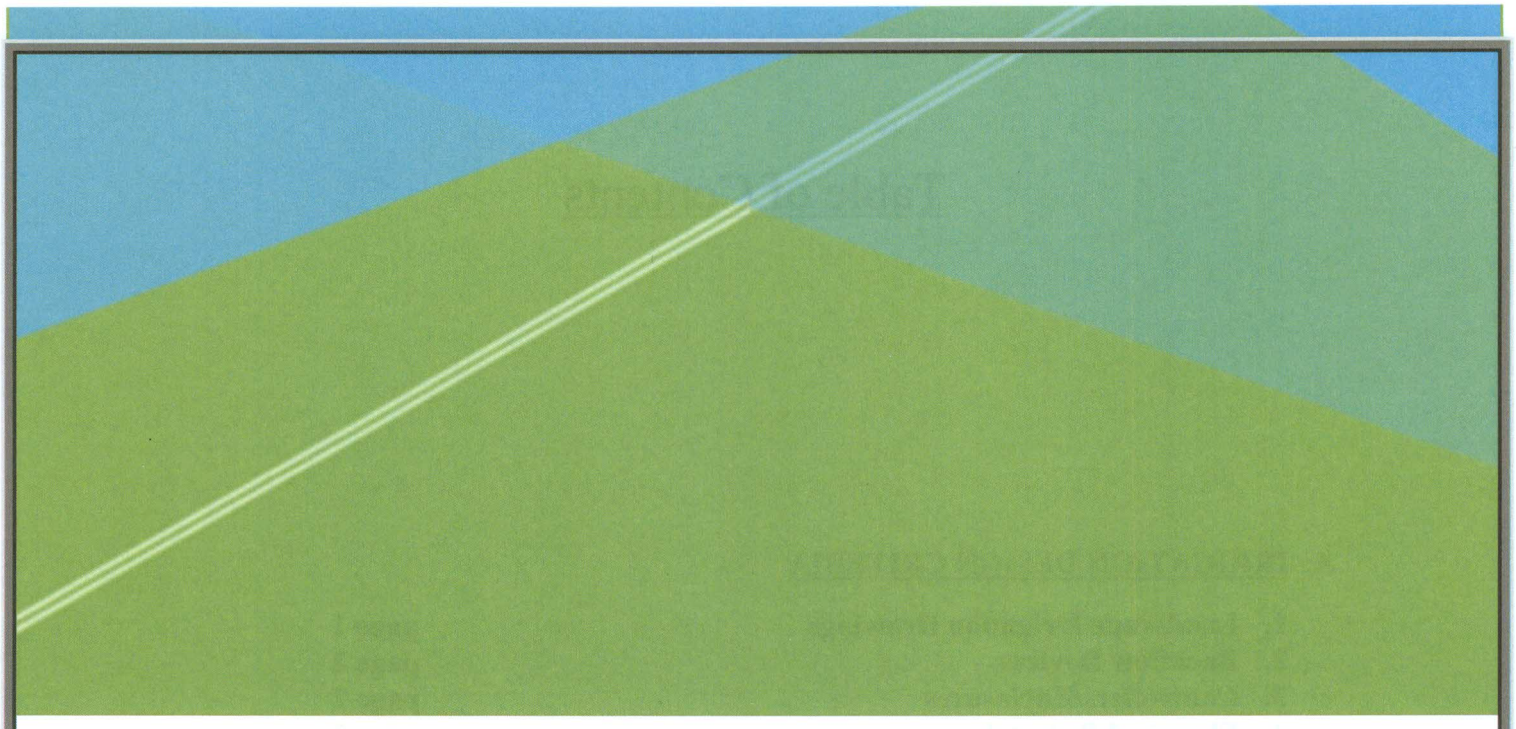

LANDSCAPE DESIGN CRITERIA

Special Districts, Department of Parks and Recreation

County of Los Angeles
May 2014

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Table of Contents

A. IRRIGATION DESIGN CRITERIA

1. **Landscape Irrigation Drawings** — **page 1**
2. **Backflow Devices** — **page 2**
3. **Controllers/Enclosures** — **page 2**
4. **Electrical Pedestal** — **page 3**
5. **Conductors and Conduit** — **page 3**
6. **Valves/Master Valves** — **page 3**
7. **Pipe** — **page 4**
8. **Irrigation Heads** — **page 5**
9. **Booster Pump / Fustigation System** — **page 6**

B. PLANTING DESIGN CRITERIA

1. **Plant Material** — **page 7-8**
2. **Landscape Drawings** — **page 9-10**

C. TURNOVER — **page 10- 11**

DESIGN CRITERIA
INSTALLATION REQUIREMENTS FOR ACCEPTANCE
BY LANDSCAPING AND LIGHTING ACT DISTRICTS (LLAD)
Special Districts, Department of Parks and Recreation
County of Los Angeles
2000 (Revised May 2014)

IRRIGATION
DESIGN CRITERIA

1. Landscape Irrigation Drawings

A. Title sheet shall include the zone number and provide a sufficiently large enough project map to graphically note LLAD maintained areas and location of master (HUB) and slave controllers.

B. Irrigation drawings shall show locations of each controller, designate the master (hub) and starting with the number 1, shall be sequence numerically. Additionally each controller shall list by square footage type of landscape (i.e. conventional overspray, point irrgation and brushed) and location of communication equipment.

C. Irrigation drawings shall list the name, address, and telephone number of the local water purveyor.

D. Provide all pad elevations for each lot and street names. Provide demarcation at point where the maintenance areas intersects.

E. All water and electrical stub-outs shall be in an enclosed plastic valve box and hot stenciled with 3" letters as such.

F. Graphically show on plans what is LMD and HOA . Provide demarcation at point where the maintenance areas intersects

G. Median Island to have a 18" from face of curb decorative stamped concrete header and incorporate sub-surface irrigation.

H. Landscape architect shall submit pressure loss calculations for the longest lateral line.

I. All recycled water irrigation systems to meet uniform Building Codes and County Health Department requirements

J. Construction Drawings shall include the following note: "Contractor shall notify LLAD Special Districts 48 hours prior to the required field observation. at (800) 636-3535 or fax (661) 294-3515 to arrange field observations of the following:"

i. Beginning of irrigation operations (field decision for location of backflow and controller/communication equipment).

ii. Installation of mainline prior to back fill.

iii. Mainline pressure test, including all valves.

iv. Final/ Coverage test.

2. Backflow Devices

A. Backflow devices shall be reduced pressure type with polymer corrosion resistant internal components and y-strainer, Watts Model 009PCQT.

B. Risers and all appurtenances for backflow devices shall be of bronze material.

C. Backflow devices shall be wrapped thermal "Polar Barrier R-19" insulation or approved equal, (909) 587-2230, to prevent freezing.

D. All backflow devices shall be mounted on a concrete pad *and secured with heavy duty hinges* stainless steel finish that can be locked.

E. If static pressure is 90 psi or greater, a pressure regulating device shall be installed upstream of the backflow device and on the assembly. No buried pressure regulators.

F. Locate equipment away from slope areas. If not possible, provide retaining wall to prevent soil creep into the equipment area.

3. Controllers/Enclosures

A. Calsense Model ET 2000e (GR Hub required), with Calsence enclosure.

B. The Calsence Hub/Master controller shall be identified on the plan and all communication auxilary equipment needed to support central communication shall be a part on the installation

C. A flow meter sensor, Calsence Data Industrial FM Brass series and a master control valve, Superior 950 DW (normally open) series with epoxy fused body shall be installed on the mainline.

D. Controller shall be located within 50' of SCE electrical source and all high voltage lines shall be trenched as per County of Los Angeles Public Works Department, Building and Safety Divison

E. Communication with Master Controller: Designer shall use local radio hub to the slave irrigation controllers

F. Controller enclosure to be Calsence stand up type.

G. Controller installations shall include a 5 year data service component to commence at time of turnover to the County.

4. Electrical Pedestal

A. The electrical pedestal may be a separate unit or combined with the master controller. If the electrical pedestal is a separate unit, it shall be mounted on a concrete pad and shall be enclosed in a anodized aluminum, stainless steel or marine grade finish steel lockable enclosure. Developer shall furnish LLAD Special Districts with two sets of locks and keys, the make and type designated and approved by Special Districts, for each enclosure.

B. No splices or junction boxes between the SCE high voltage electrical box and the controller.

C. All electrical work shall be reported and verified to the County that such improvements have been acknowledge and listed as part of DIG-ALERT notification list.

5. Conductors and Conduit

A. All control wire shall be 14 AWG wire and have a minimum of eight different color codes.

B. All control wire shall be continuous from controllers to valves (no field splices are allowed).

C. Control wire shall be connected to control valves with a moisture proof device Scotchlok seal pack and sealant or approved equal.

6. Valves/MasterValves

A. All control valves with static pressure less than 90 psi shall be Superior 950 DW Dirty Water Series normally open or approved equal.

B. Where possible, all mainline and control valves shall be located at the bottom of slopes. Control valves shall not be located in the middle of slope area.

C. Gate valves shall be located at all major intersections of the main line.

D. Remote control valves shall be manifold in a neat orderly manner. Said valves shall be located a maximum of 5' from hardscape edges in a location that provides convenient access for maintenance personnel.

E. All valves shall be installed in a valve box (one valve box shall be installed for each valve).

F. Valve boxes in landscaped areas shall be plastic valve boxes, Applied Engineering Series 1015 with hinged cover set on 2"x 4" redwood over 3" deep crushed aggregate foundation. A steel wire mesh shall separate the valve box and the foundation.

G. Valve boxes in hardscape areas shall be traffic loaded concrete valve boxes with lockable hinged steel cover, Brooks or approved equal.

H. Each valve cover shall identify the controller and valve number with 3" high numbers to the valve cover (hot stenciled for plastic covers and weld beads for steel covers).

I. Master valve to be in "Normally Open" and when energized shall be closed.

7. Pipe

A. All pipe and fittings shall be rigid ultra violet ray PVC. All PVC pipe 1 ½" and smaller shall be Schedule 40. All PVC pipe larger than 2 ½" shall be Class 315. The NSF seal and ASTM qualifying designation shall be stamped on each section of the PVC pipe.

B. All PVC pipe shall have solvent weld joints. Bell and gasket joints are not acceptable.

C. In non-sloped landscaped areas, all mainline pipe shall have a minimum cover of 18" and all lateral pipe shall have a minimum cover of 12". In areas where climate conditions warrant, all pipe shall be installed below the frost line. All trench back fill shall be compacted to a minimum relative compaction of 85%.

D. In travel ways (roads and highways), all PVC pipe shall be Schedule 80 and shall have a minimum cover of 42". In driveways and planters, all PVC pipe shall be Schedule 80 and have a minimum cover of 18". In both cases, pipe shall be placed on a sand bedding (4" minimum thickness). All trench back fill shall be compacted to a minimum relative compaction of 90%.

E. All PVC pipe located on slopes shall be secured with #4 steel reinforcement bar, j-hooks spaced at 5' on center.

F. Prior to solvent grey welding joints, Contractor shall use a "purple" primer.

G. Apply Weld-on Grey Glue ASTM D2564 on all pressure and not pressure pipe joints.

H. All pipe shall be sized to provide a maximum velocity of 5' per second at maximum flow.

I. Pipe shall be installed to maintain a minimum clearance of 3" from trench walls.

J. For mainline pipe, 90° fittings are not allowed. All 90° angle points shall be accomplished with two (2) 45° fittings.

K. All mainline pipe shall have concrete thrust block placed at angle points where a change in direction occurs. Concrete thrust blocks shall be located outside the solvent welded joints.

8. Irrigation Heads

A. All irrigation heads on slopes shall be trickle type heads on risers, Rainbird 1401 (full circle pattern, 0.25 gpm) pressure compensating flood nozzle. After final adjustment, each irrigation head shall be secured with a #4 steel reinforcement bar and two stainless steel adjustable clamps or riser and swivel joint.

B. For irrigation heads on slopes, one (1) trickle head shall be placed at each tree and shrub and shall drop directly into the upper side of the basin. Trickle heads for trees shall be operated by a separate control valve.

C. For irrigation delivery in median island Toro 2000 sub-surface system with pressure regulator, 200 mesh filter and flush outs be placed installed on a P.O.C.. The value box shall be elongated and installed to ensure sufficient area in order to maintain the filter and flush outs.

D. Irrigation heads for overhead irrigation shall be limited in use and be Rainbird 1800 SAM pop-up heads (with variable arc and pressure compensating nozzles) for lawn areas. For slope conditions at project entries and right-of-way areas, sprinkler heads shall be Hunter, Rainbird or Toro spray or rotor heads on risers. For all irrigation heads adjacent to hardscape areas (sidewalks, curbs, streets), irrigation heads shall be pop-up type heads.

E. Irrigation heads for non-recreational lawn areas shall have double swing riser assemblies. Irrigation heads for recreational lawn areas shall have triple swing riser assemblies.

F. Location of check valves other than in head type shall be shown on irrigation drawings.

G. List precipitation rate for each irrigation nozzle on the irrigation legend.

9. Booster Pump / Fertigation System

A. If an irrigation booster pumping unit is required, the architect shall supply pressure calculations and specify all equipment including manufacturer's name and model number for approval prior to ordering same. Said irrigation booster pumping unit shall be mounted on a concrete pad and shall be enclosed in a stainless steel or marine grade finish steel lockable enclosure.

B. Install fertilizer injector system EZ_Flow (866) 393-5601.

PLANTING
DESIGN CRITERIA

1. Plant Material

A. Selection of plant material shall identify the basic sustainable plant communities with respect to the difference among plants adapted to inland valley/desert areas. Non-native plant material shall be indigenous to the climate, soil type, and plant community.

B. The designer should utilize soil maps to locate cut and fill conditions and make selection adjustments to the plant pallette.

C. Plant material shall be deep rooted, drought tolerant, pest and disease resistant, fast growing, fire retardant, and acclimated to climate Zone 18 (Inland Valley, High Desert). Incorporate California Friendly landscape plant material design concepts that enhance native plant material where possible. All shrubs and ground covers should have roots with a depth of 2' to 4'. Grasses, lupine, gazania, and other non-deep rooting plants are not permitted to be used in large mass plantings i.e. slopes.

D. Plant materials for slope areas shall be a spreading type shrub ground cover with a minimum size of one gallon and a maximum spacing of 8' o.c. Selection of ground cover shall place emphasis on low growing plants in accordance with the fuel modification guidelines, i.e. Acacia r. 'Dessert Carpet', Cotoneaster h., Rock Ccotoneaster, Myoporum parvifolium 'Putah Creek, Rosmarinus O. protrutus

E. All slope areas shall have tree plantings in accordance with the Uniform Building Code, chapter 70 and 71. Shrubs not to exceed 8 feet on center and trees shall be a minimum size of five gallons and shall be double staked. Tree selection (canopy cascading type trees) and location (place at lower third of slope) shall not encroach on skyline or views. Trees shall not be massed, but arranged in small clusters in accordance with the Fuel Modification Guidelines of the Los Angeles County Fire Department, Prevention Services Bureau.

F. Plant materials for slope areas shall consist of two to six plant genus; however, the plant palette shall not be overly diversified.

G. Slopes will require erosion control netting (jute net), blankets, fabrics, or other devices and shall be installed between shrubs and trees. Said materials shall have a minimum overlap of 6" and shall be secured with stakes at 5' center. Depending on slope size, LLAD Special Districts will allow the first tier (defined by drainage) to be planted from flats with rotor irrigation. Maximum height of the

area to be planted with flats and shrubs shall not exceed 10' in height and will vary depending on total slope height.

H. At arterial streets and entry corridors where rotor head irrigation systems are used, ground cover plantings at a maximum spacing of 12" from flatted cuttings shall be in addition to erosion control netting.

I. In areas that exceed the second up or down slope drainage channel, planting abutting to the outside perimeter of wilderness areas may use a native grass and shrub hydroseed mix. This landscape shall use a temporary overhead irrigation system. All landscape irrigation outside the second drainage channel shall be point type unless noted on plan review.

J. Decompose granite walkways to have concrete header and application of Stabilizer as per manufactures specifications. 800-336-2468

K. 3 post vinyl ranch post fencing.

L. The landscape architect shall specify the minimum size of the plant material as follows:

1 Gallon Plants	7" – 9" crown
5 Gallon Plants	12" – 15" crown
15 Gallon Trees	(7' - 8') 24" crown

M. The agronomist report shall include the option of applying mycorrhizal inoculum at the following application rates for backfill.

Flatted material..... 1/8 cup per rooting
1 - gallon container..... 1 cup
5 - gallon container..... 2 cups
15 - gallon container..... 3 cups
24" box ..... 4 cups

N. Soil conditioner and mycorrhizal inoculum at the following application rates per planting pit. Install as per manufactures instructions.

1 - gallon container..... 3 tablets
5 - gallon container..... 8 tablets
15 - gallon container..... 12 tablets
24" box ..... 15 tablets

O. The report shall include high grade organic humus such as Kellogg's Nitrohumus or an approved equal and Gypsum.

P. A 2" layer of Forest fine grade mulch or equal shall be placed over the top 1" crown of the shrub or tree to provide nutriants. No compost or large tree bark shall be considered mulch.

2. Landscape Drawings

A. A landscape planting legend listing the size of all plant material and maximun spacing along with plant count for each genus/species shall be provided. List quanity of all trees and shrubs.

B. A copy of the soil map shall be submitted for reference. This map will only be used for LLAD review.

C. 200 foot fuel modification shall be graphically indicated on the palnting plans along with noted acreage.

D. Pad elevation for each lot

E. Coordinate fencing plans and topography allowing a level service for landscape maintenance access. Provide a minimum of 2 feet leeway from fence at both the top and bottom of slope.

F. Provide 6' high PVC bollard marker separating LLAD from home owner associations

G. Contractor shall submit a copy of the agronomic soil report to LLAD Special Districts. The report shall acknowledge how many log samples were utilize and shall note the locations of the sample. Recommendations, as set forth in the agronomic soil report, shall be a part of the plans and specifications

H. Where planting occurs along edges of hardscape, the center of the planting pit shall be located a minimum of one-half the diameter of the plant size (at mature growth) from said edge.

I. Landscape drawings shall provide a demarcation (i.e.concrete border, fence, wall etc.) between LLAD Special Districts planting areas and adjacent areas.

J. Note maintenance access points to slopes on fencing or planting plans. Maintain a minimum width of 2' clearance between backyard fence and top/bottom of slope. Conditions where access points are between two houses, provide a masonry or tubular steel fence wall and gate with location. Maintain all access points until turnover to the County.

K. Provide controller map showing the master/slave relationship, square footage of each controller itemize by landscape type i.e. conventional irrigation, point irrigation, and brushed irrigation.

L. Plant material shall be acclimated to climate Zone 18 Inland Valley/High Desert.

M. One out of every ten plants shall have a plant identification tag attached to the plant and shall be field verified by the project landscape architect and removed thereafter.

N. The developers landscape maintenance specifications shall address a minimun of materials, execution and quality of delivery as related to i.e. fertilizing, water basin care, pruning, pre and post emergent applications, weeding, and rodent eradication

O. Contractor shall maintain an approved set of Construction Drawings at the job trailer/site at all times until completion of project.

P. Contractor shall notify. LLAD Special Districts 48 hours prior to inspection at (661) 294-3515 to arrange field observations of the following:

i. Excavation of plant pits prior to back fill.

ii. Arrival of plant material and amendments prior to planting.

iii. Completion of landscape construction, beginning of maintenance. The project landscape architect shall be present during this meeting and prepare the punch list.

iv. Completion of maintenance period.

3. Turnover

A. At project build out, a colored master composite drawing (11"x17") showing all phases of the LMD shall indicate each controller, water meter and electrical point of connection along with its identification number shall be provided.

B. Provide certification letter from manufacturer that the controller be activated and precipitation rates installed along with the learned flow procedure for all control valves. Addiitonally, the controller shall be programed as per the approval of Special Districts and verified operational at the central controller. Certification shall have the service representative and Special Districts signature prior to final turnover that total operation and delievery of data to the central controller is operational.

C. Prior to immediate turn over to the County, the contractor/developer shall develop a punch list of landscape installation.

D. Landscape Contractor shall prepare and submit "As-Built Drawings" to the landscape architect of record. The landscape architect of record shall inspect the site for conformity and provide sealed record drawings to LLAD, Special

Districts. Turnover shall include 2 sets of reduced scale irrigation plans (Record Drawings) hermetically sealed between plastic sheets. One set shall be permanently affixed in each project controller.

E. Developer shall furnish LLAD Special Districts with two sets of locks and keys, the make and type designated and approved by Special Districts, for each, hub, controller and backflow device.

F. The location of the booster pumping unit shall be approved in advance by LLAD Special Districts.

G. Provide electrical meter number assigned by SCE to each station

H. Certification of installation shall be performed by the Calsence to include programming all necessary calibration to meet manufacturers warranty and demostrate data operation to the centreal controller to the satisfaction of the County.

I. Prior to turn over, plans approved by Parks and Recreation department shall also be approved by PWD.