

**CITY OF PALMDALE ENGINEERING DEPARTMENT
STANDARDS SECTION VI
LANDSCAPING AND IRRIGATION**

TABLE OF CONTENTS

CLICK ON [HYPERLINK BELOW](#) FOR DIRECT ACCESS

<u>ALL PLANS</u>	Page #
SECTION A: GENERAL REQUIREMENTS	3
SECTION B: LANDSCAPE DOCUMENTATION PACKAGE	6
SECTION C: PLAN PREPARATION	23
<u>SPECIFIC PROJECT REQUIREMENTS</u>	
SECTION D: CITY PROJECTS = PN # LANDSCAPE MAINTENANCE DISTRICT = LMD #	26
SECTION E: COMMERCIAL PROJECTS = LSP #	47
SECTION F: HOME OWNERS ASSOCIATION PROJECTS = LSP #	64
SECTION G: TRACT DEVELOPMENT & RESIDENTIAL HOUSING = LSP MODELS LSP # TYPICAL FRONT YARD/STREET TREE PLAN LSP # SLOPE AND EROSION CONTROL LSP #	82
SECTION H: SLOPE & EROSION CONTROL FOR ALL PROJECTS HYDROSEEDING SPECIFICATIONS	93
SECTION I: FUEL MODIFICATION PLANS = LSP #	100
SECTION J: APPROVED PLANT LIST	101
SECTION K: NOTICE OF SUBSTANDARD LANDSCAPING	102
SECTION L: DETAILS	103
Details are viewable as PDF and TIFF – TIFF files work better when downloaded into AutoCAD. All details are available in the downloadable zip folder as a group	
<ol style="list-style-type: none">1. Hardscape details2. Median details3. Irrigation details4. Planting details	

TABLE OF CONTENTS

[SECTION M – TITLE SHEETS](#) 107

Title sheets are viewable as PDF and DWG for AutoCAD – both are available in downloadable zip folder. Be sure and use Palmdale.1ctb files to make sure your AutoCAD looks like the PDF format

[SECTION N – APPENDIX](#) 108

[\(A\) - CIMIS Data for Palmdale](#)

[\(B\) – Landscape Documentation Package](#)

[\(C\) – Certificate of Completion](#)

[\(D\) – Effective Precipitation Statement](#)

[\(E\) – Conversion Factors and Calculations](#)

[\(F\) – Miscellaneous Items](#)

(1) [Landscape Maintenance District Map](#)

(2) [Landscape Maintenance District Map without tract map inserted.](#)

(3) [Landscape Maintenance District CCU Request Form](#)

(4) [Submittal Requirements](#)

(5) [Plan Check Sheets](#)

(6) [Declaration of Substandard Landscape Release checklist.](#)

(7) [Landscape Auditor Checklist and required paperwork](#)

(8) [Revisions](#)

SECTION A: General Requirements

- (1) **Electronic Plan checks submittal are now available through Project Dox** – if you are interested in processing your plans this way, please contact the Engineering Department at 661-267-5272 for further information. Please note that all submittal requirements are the same for electronic plan check as over the counter submittals.
- (2) **Plan check fees are due at submittal** – see Landscape Excel sheet on City of Palmdale Engineering Home Page under fees.
- (3) The guidelines, criteria and standards presented herein establish the minimum acceptable standard for design and preparation of all planting and irrigation plans submitted for review and approval by the City of Palmdale.
- (4) All landscape planting and irrigation plans shall require approval by the City Engineer, or designated representative.
- (5) Please refer to the following ordinances that could affect the preparation of landscape plans.
 - [#14.04 - Joshua Tree and Native Desert Vegetation Preservation](#)
 - [PC-2001-008 Zoning Ordinance Amendment - Landscape](#)
 - [# 1176 – Front Yard and Street Corner Side Yard Landscaping Within Single Family Residential Zones of the City](#)
 - [1259 – Street Tree Maintenance](#)
 - [#1362 – Water Efficient Landscape](#) (See power point below)
[Click here to view the power point demonstration for Water Efficient Landscape on what the city wants and doesn't want.](#)

GENERAL REQUIREMENTS FOR ALL PLANS – Additional notes for city projects and Landscape Maintenance Districts are in their individual sections.

- (1) The design shall be prepared in such a way as to minimize the amount of supplemental water required. Each sheet of the landscape design plan shall contain the following statement along with a licensed Landscape Architect's stamp and signature: "I have agreed to comply with the criteria and specifications of the water efficient landscape Ordinance # 1362, and I have applied them accordingly for the efficient use of water in the landscape design plan."
- (2) A water-conserving approach to landscape design can be implemented through a variety of techniques and practices including the use of appropriate plant material, the placement of plant material into compatible irrigation zones, irrigation techniques, irrigation products, irrigation management, evaporation-control, etc. Such techniques shall be addressed in the above-mentioned concept.

SECTION A: GENERAL REQUIREMENTS FOR ALL PLANS

- (3) General guidelines for water conservation will be expanded upon in the individual planting and irrigation sections. Each project will be required to meet the requirements of City Ordinance # 1362, Water Efficient Landscape; Engineering Section VI: Landscape Submittal Package; and to provide all required information to conform to the ordinance.

IRRIGATION

- (1) General: The irrigation system shall be a fully automatic system. Irrigation plans shall indicate location and size of irrigation water meters, points of connection, backflow devices, valves, pumps, master valves, flow sensors, controllers, sprinklers, emitters, mainline and lateral line pipe. An irrigation legend shall provide the sizes and models of equipment specified.
- (2) All irrigation systems will be designed with a minimum of 0.71 irrigation efficiency per Ordinance # 1362 – Water Efficient Landscape.
- (3) The ETAF factor utilized for all new and existing landscape irrigation systems is 0.8.
- (4) The following shall be placed next to the irrigation legend on all plans – See Detail I-35 located in Section L:
 - Name of Water Purveyor with contact name and phone number;
 - Size of water meter and service line;
 - Static water pressure;
 - Design water pressure;
 - Designed highest gpm/gph flow;
 - Worst-case pressure loss calculations. (See detail I-35 for more information)
- (5) All irrigation systems are to be designed for water movement within the system not to exceed five feet per second.
- (6) The irrigation system is to be designed to the lowest static water available, with an additional 20% cushion for future fluctuations.
- (7) Commercial projects will utilize commercial grade automatic ET based irrigation controllers that offer multiple programs for the system designed and are on the SWAT approved list located at <http://www.irrigation.org>. The City of Palmdale broadcasts daily Eto from City weather stations through Irrisoft using the Weather Reach Program, and is available at no charge to citizens of Palmdale for use with qualified irrigation controllers. More information is available at <http://www.irrisoft.net/buy/palmdale.htm> .
- (8) Residential Projects will utilize an active ET based irrigation controller designed for homeowner properties and will have enough stations to provide for future landscaping in the side and back yard. The controller shall be on the SWAT approved list located at <http://www.irrigation.org> and shall show active ET at the time of the certificate of occupancy inspection.

SECTION A: GENERAL REQUIREMENTS FOR ALL PLANS

- (9) Installation book, sheet number, and how to incorporate City specifications shall be indicated whenever possible. Installation shall conform to the City approved irrigation details included in Section L.
- (10) The spray, rotor, bubbler and drip irrigation system shall be organized into hydrozones based upon plant material selections and environmental considerations (i.e. sun exposure, slope aspect, soil conditions, etc.)
- (11) The system shall be designed to provide check valves and/or anti drain valves to prevent drainage of irrigation water from sprinkler systems due to elevation changes.
- (12) The selection of irrigation system components shall be based upon the overall design and upon water conservation principles. A minimum of 25% of each landscape shall be irrigated with low volume systems. The designer shall indicate on the irrigation plan the proposed water management principles.
- (13) The irrigation system must provide complete coverage for all areas. On commercial and residential projects where a spray system is utilized, a minimum of head to head coverage is required due to the steady wind conditions of the High Desert. On all city projects this is increased to 133% coverage.
- (14) No above ground UVR pipe to be specified on any projects within the City. All pipe to be buried with trenches compacted to adjacent grade.
- (15) All backflow devices will be insulated to a minimum of R-11 to prevent freeze damage, and a commercial device will be covered with an approved solid side backflow cage. Blankets do not replace the cage.
- (16) The size of the backflow device will be the size of the point of connection, or larger.
- (17) Where above ground irrigation components (such as automatic controllers and backflow devices) are placed on slopes, low retaining walls and/or curbing shall be required to be installed at the location to prevent erosion.
- (18) Per Ordinance #1362 – all water features and orchards are to be added to the MAWA calculations in the water budget formulas See Section B.3.E.

SECTION B: Landscape Documentation Package for all Submittals

- (1) The Landscape Documentation Package shall include all of the following elements. Each element is described in detail in Section B.3.
 - (A) Water Efficient Landscape Worksheet
 - (B) Project Information and Checklist
 - (C) Water Use Efficiency Statement
 - (D) Water Budget Calculation
 - (E) Maximum Applied Water Allowance (MAWA)
 - (F) Estimated Water Use (EWU) for Hydrozones and Estimated Total Water Use (ETWU)
 - (G) Hydrozone Information
 - Hydrozone Map
 - Hydrozone Table
 - Hydrozone Calculation Summary
 - (H) Soil Management Plan
 - (I) Soil Analysis Report
 - (J) On-Site Soil Assessment with Recommendations
 - (K) Landscape Design Plan
 - (L) Irrigation Design Plan
 - (M) Grading Design Plan
 - (N) Final Conditions of Approval
 - (O) Approved Tentative Tract Map or Approved Site Plan
 - (P) Plan check fees with print out of Landscape Excel Sheet
- (2) Subsequent submittals to the City shall include:
 - (A) Revised plans along with redline set.
 - (B) Any additional material requested by the plan checker
- (3) Each element of the Landscape Documentation Package is described below:
 - (A) 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.

 - (i) Section A shall contain general project information and a checklist of the required elements.

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

- (ii) 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.
- (iii) Section C shall contain a water budget calculation for the project. For the calculation of the Maximum Applied Water Allowance, a project applicant shall use the ETo values from the Reference Evapotranspiration 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 from the California Irrigation Management Information System (CIMIS) or other self-adjusting device (i.e., soil moisture sensor). The CIMIS data for the City of Palmdale is available in Appendix A.

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.

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

$$MAWA = (ET_o) (0.8) (LA) (0.62)$$

Where:

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

- (i.) Example MAWA calculation: A hypothetical landscape project in Palmdale, CA with an irrigated landscape area of 50,000 square feet. To calculate MAWA, the annual (ET_o) value for Palmdale is 66.4 inches as listed in the Reference Evapotranspiration (ET_o) Table in the Appendix

$$MAWA = (ET_o) (0.8) (LA) (0.62)$$

$$MAWA = (66.4 \text{ inches}) (0.8) (50,000 \text{ square feet}) (0.62)$$
$$= 1,646,720 \text{ gallons per year}$$

To convert from gallons per year to hundred-cubic-feet per year
 $1,646,720 / 748 = 2,201$ hundred-cubic-feet per year
(100 cubic feet = 748 gallons)

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

- (C.) Section C2 Estimated amount of water expected from Effective Precipitation (Eppt) has been eliminated because the City of Palmdale’s annual precipitation is not significant enough to count for this portion of the equation.
- (D.) Section C3 Estimated Water Use (EWU) for a hydrozone and Estimated Total Water use (ETWU). The landscape project’s Estimated Water Use for each hydrozone is calculated using the Following equation:

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

Where:

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

- (i) Example EWU calculations for three (3) hydrozones; the hypothetical Landscape project in Palmdale 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 0.8, landscape area is 16,667 square feet, and irrigation efficiency (IE) is 0.71

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Eto	2.0	2.6	4.6	6.2	7.3	8.9	9.8	9.0	6.5	4.7	2.7	2.1	66.4
PWR	1.6	2.08	3.68	4.96	5.84	7.12	7.84	7.2	5.2	3.76	2.16	1.68	53.12
IWR	2.25	2.95	5.18	6.98	8.22	10.02	11.04	10.14	7.32	5.3	3.04	2.37	74.81
Total for Hydrozone 1 (=74.81 X 16,667 square feet), inches													1,246,858.

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

Where:

- ETo = Reference evapotranspiration Appendix A (inches/monthly)
- PWR = Plant water requirement = (ETo) (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 16,667 square feet; and irrigation efficiency (IE) is 0.71

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo	2.0	2.60	4.6	6.2	7.3	8.9	9.8	9.0	6.5	4.7	2.7	2.1	66.4
PWR	0.8	1.04	1.84	2.48	2.92	3.56	3.92	3.6	2.6	1.88	1.08	0.84	26.56
IWR	1.12	1.46	2.59	3.49	4.11	5.01	5.52	5.07	3.66	2.64	1.52	1.18	37.37
Total for Hydrozone 2 (=37.37X 16,667 square feet), inches													622,846

- 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 16,667 square feet, and irrigation efficiency (IE) is 0.71. 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	2.0	2.60	4.6	6.2	7.3	8.9	9.8	9.0	6.5	4.7	2.7	2.1	66.4
PWR	0.4	0.52	0.92	1.24	1.46	1.78	1.96	1.8	1.3	0.94	0.54	0.42	13.28
IWR	.56	.73	1.29	1.75	2.06	2.5	2.76	2.53	1.83	1.32	.76	.59	18.68
Total for Hydrozone 3 (= 18.68 X 16,667 square feet), inches													311,340

Where:

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

- (ii) Example calculation ETWU. The Estimated Total Water Use for the landscape is the sum total of estimated water uses for each hydrozone:

$$ETWU = \sum_{i=1 \text{ to } n} (EWU \ i)$$

Where:

i = hydrozone number

n = total number of hydrozones

$$ETWU = 1,246,858 \text{ inches} + 622,846 \text{ inches} + 311,340 \text{ inches} = 2,181,044 \text{ inches per year}$$

To convert from inches per year to gallons per year:

$$2,181,044 \times 0.62 = 1,352,247 \text{ gallons per year}$$

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

(E.) 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 Maximum Applied Water Allowance. 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 Maximum Applied Water Allowance. 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.

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.

- (1) 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:
 - (A) Soil texture (percent clay, silt, sand), indicating the percentage of organic matter;
 - (B) 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;
 - (C) PH;
 - (D) Total soluble salts; and
 - (E) 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).
- (2) 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.
- (3) 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:
 - (A) Identify planting or turf areas that may need amendment;

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

- (B) 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);
 - (C) Conduct a further analysis of soil conditions (i.e., soil profile, hardpan, bulk density, soil toxicity, salinity, etc.), where applicable; and
- (4) 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.

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.

(1). Criteria

(A) Plant Material

- (i.) 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:
 - (a) Protection and preservation of native species and natural vegetation.
 - (b) Selection of water conserving plant species and turf species.
 - (c) Selection of trees based on the City of Palmdale approved tree list.
- (ii.) 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:
 - (a) 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.).
 - (b) Consider the solar orientation for plant placement to maximize summer shade and winter solar gain.
- (iii.) 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.

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

- (iv.) 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.
- (v.) 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.

(B) Turf

(1) Living Turf

- (a) Turf areas shall be sized and shaped to minimize irrigation overspray and runoff.
- (b) Installation of turf on slopes greater than 4:1 (horizontal to vertical) shall not be permitted.
- (c) Installation of long, narrow, or irregularly shaped turf areas less than eight (8) feet in width in any direction shall be irrigated with subsurface irrigation or other low volume irrigation technology.
- (d) Irrigated areas (including turf) within 24 inches of non-permeable hardscape shall be irrigated with drip irrigation or subsurface irrigation technology.
- (e) No living turf will be specified on any new commercial or industrial project, or single-family residence front yard.

(2) Artificial Turf

- (a) Artificial turf may be utilized as an accent for any project. However, large areas of artificial turf are discouraged. The amount used will be subject to the approval of the City Engineer, or his designee.
- (b) High Quality Artificial turf will be specified, subject to approval of the City Engineer.
- (c) Lead levels will conform to the State of California Attorney General's specifications.
- (d) A water source to wash off the artificial turf will be located within one hose length of the turf.

(C) Water Features

- (1) Recirculating water shall be used for decorative water features.
- (2) Where available, recycled water shall be used as the source for water features.
- (3) Surface area of a water feature shall be included in the Maximum Applied Water Allowance (MAWA) calculation. The evaporation rate

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

for all water features shall be equivalent to the evapotranspiration rate of a high water use plant.

(4) Pool and spa covers are highly recommended.

(D) Aesthetic Features:

(1) The use of mounding, meandering drainage swales, pots, boulders, colored decomposed granite, colored rocks, cobbles, etc. is required to provide aesthetic appeal to each project.

(E) Mulch

(1) A minimum two-inch (2") 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 or point source irrigation is highly recommended.

(a) A porous fabric weed barrier will be specified beneath all mulch areas (except stabilized decomposed granite) to prevent weed growth. This is in addition to pre-treating the area with a contact herbicide.

(b) Bark mulch will not be allowed in the public right of way areas of any project.

(c) Bark mulch will only be allowed in planters directly adjacent to the house in any new development or substandard landscape renovation project – no bark mulch on any commercial or industrial project. The use of decomposed granite, rock and cobble is highly encouraged.

(2). 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. A base sheet of 24" x 36" with a 1"=20' bar scale is preferred:

(A). Site

(i) Location map with north arrow, bar scale, and legal description of the property

(ii) Project Name

(iii) Title block with name, license number, mailing address, email address, and telephone number of licensed landscape architect.

(iv) Total landscape area (square feet).

(v) Benchmark name, elevation, and location.

(vi) Topography with proposed contour lines and elevations.

(vii) Property lines and setbacks.

(viii) Street names.

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

- (ix) 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.
 - (x) 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.)
- (B) Hydrozone (See Section D of the Water Efficient Landscape Worksheet available in Appendix B.)
- (i) Delineate and label each hydrozone by number, letter, or other method.
 - (ii) Indicate the square footage of each hydrozone.
 - (iii) Identify each hydrozone as low, moderate, high water use, etc.
 - (iv) Identify recreational areas
 - (v) Identify areas permanently and solely dedicated to edible plants.
 - (vi) Identify any other pertinent factors (e.g., sun exposure, microclimate, etc.)
- (C) Plant
- (i) Location of all plant material (e.g., turf, annuals, perennials, groundcovers, shrubs, trees and other vegetation, etc.).
 - (ii) Detailed legend explaining all the symbols used in the landscape design plan including botanical names, common names, quantity, container size, etc.
- (D) Mulch
- (i.) Type of mulch and type of porous weed fabric placed beneath it
 - (ii.) Depth (inches)
- (E) Design Elements
- (i) Water features.
 - (ii) Hardscapes (pervious and non-pervious).
 - (iii) Existing natural features including, but not limited to, rock outcroppings, creeks or streams, wetlands, and plant materials that will remain.
- (F) Other
- (i.) Installation details for the landscape including soil preparation, plant material installation, tree planting and staking, and any other applicable details.

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

- (ii.) Location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Examples include, but not limited to:
 - (a.) Infiltration beds, swales, and basins that allow water to collect and soak into the ground.
 - (b.) Constructed wetlands and retention ponds that retain water, handle excess flows and filter pollutants.
 - (c.) The usage of pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff (volume and velocity).
- (iii.) Each sheet of the landscape design plan shall contain the following statement along with a licensed landscape architect's stamp and signature: " I have agreed to comply with the criteria and specifications of Ordinance # 1362 – Water Efficient Landscape, and I have applied them accordingly for the efficient use of water in the landscape design plan."

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 local agency code requirements. An irrigation system and it's 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.

(1) Criteria

(A.) System

- (i.) Dedicated (separate) landscape water meters shall be installed for all projects greater than 5,000 square feet, except for single-family residences (Authority Cited: Statues 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.
- (ii.) Active Weather-based 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. ET controllers must be on the approved SWAT list located at <http://www.irrigation.org>. ETo data is available at no cost to the citizens of Palmdale through Weather Reach. More information is available at <http://www.irisoft.net/>.
- (iii.) 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

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

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. Use the lowest static water pressure available minus 20 percent for future fluctuations.

- (iv.) 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.
- (v.) 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.
- (vi.) 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., mainline break) or repair.
- (vii.) Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system.
- (viii.) Long, narrow, or irregularly shaped areas less than eight (8) feet in width in any direction shall be irrigated with drip irrigation or low volume irrigation technology.
- (ix.) 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.
- (x.) 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.

(2.) 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:

(A) Site

- (i) Location map with north arrow, scale, and legal description of the property.
- (ii) Project name.
- (iii) Title block with name, license/certification number, mailing address, email address, and phone number of licensed landscape architect or certified irrigation designer, etc.

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

- (iv) Contact name for project owner along with telephone number and e-mail address, if available.
 - (v) Benchmark name, elevation, and location.
 - (vi) Topography with proposed contour lines and elevations.
 - (vii) Property lines and setbacks.
 - (viii) Street names.
 - (ix) Location of all utilities (i.e. telephone, electrical, gas, sewer, drainage, etc. The use of this information is limited to the landscape design and installation.
 - (x) Location and details of existing and proposed public improvements within right-of-way (i.e., curb, gutter, sidewalk, street lights, fire hydrants, driveways, other approaches, etc.).
- (B) Irrigation System
- (i) Layout of the irrigation system and all related components
 - (ii) Detailed legend explaining all the symbols used in the irrigation design plan.
 - (iii) Location, manufacturer, model, type and size of all components of the irrigation system such as:
 - (a) Water meters
 - (b) Controllers
 - (c) Valves
 - (d) Check valves
 - (e) Main lines and lateral lines (indicate size & depth)
 - (f) Swing joints or other riser-protection components
 - (g) Sprinkler heads, drip emitters and other emission devices
 - (h) Sensors (i.e., rain, freeze, wind, etc.)
 - (i) Soil moisture sensors
 - (j) Pressure regulators
 - (k) Pumps
 - (l) Backflow prevention devices
 - (m) Quick couplers
 - (n) Other related components
- (C) Hydrozone
- (i) Delineate and label each hydrozone by number, letter or other method.

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

- (ii) Indicate the square footage of each hydrozone.
 - (iii) Identify each hydrozone as low, moderate, or high water use, etc.
 - (iv) Identify recreational areas.
 - (v) Identify areas permanently and solely dedicated to edible plants.
 - (vi) Identify any other pertinent factors (e.g., sun exposure, microclimate, etc.).
- (D) Hydraulics
- (i) Worst Case Pressure Calculations – See Detail I-35 in Appendix
 - (ii) Recommended system operating pressure range (psi).
 - (iii) Acceptable system operating pressure range (psi), minimum and maximum.
 - (iv) Flow rate (gallons per minute, gpm) and application rate (inches per hour) for each valve.
- (E) Other
- (i) Details for recycled water irrigation, if appropriate.
 - (ii) Construction or installation details for irrigation system.
 - (iii) Each sheet of the irrigation design plan shall contain the following statement along with a licensed Landscape Architect's stamp and signature: " I have agreed to comply with the criteria and specifications of ordinance # 1362 – Water Efficient Landscape, and I have applied them accordingly for the efficient use of water in the irrigation design plan."
 - (iv) Apply best management practices for installation of irrigation systems.

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.

(1) Criteria

- (A) 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.

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

- (B) Grading of a project site shall avoid disturbing natural drainage patterns and avoid soil compaction in landscape areas.
- (C) Front yards of single-family and multi-family homes may have a grade differential such as mounding, short walls, recessed drainage swales, etc. to provide aesthetic appeal.

(2) Specifications

- (A) Site
 - (i) Location map with north arrow, scale, and legal description of the property.
 - (ii) Project name.
 - (iii) 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 Ordinance #1362 Water Efficient Landscape, and I have applied them accordingly for the efficient use of water in the grading design plan."

Certificate of Completion

- (1.) See Appendix C for a sample of Certificate of Completion.
- (2.) The Certificate shall specifically indicate that:
 - (A) Plants were installed as specified;
 - (B) The irrigation system was installed as designed;
 - (C) An irrigation audit has been performed;
 - (D) Other criteria of the ordinance have been met along with a list of any observed deficiencies.
- (3.) The following shall be submitted with the Certificate of Completion;
 - (A) Irrigation Schedule (See next section for more information),
 - (B) Landscape and Irrigation Maintenance Schedule,
 - (C) Irrigation Audit Schedule, and
 - (D) Irrigation Audit Report.

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.

- (1) 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

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

monitoring systems to apply the appropriate levels of water for different climates. The CIMIS data for Palmdale area is available in Appendix A.

- (2) Overhead irrigation shall be scheduled between 10:00 PM and 10:00 AM unless weather conditions are unfavorable. City Projects must be designed for an 8-hour water window. If allowable hours of irrigation differ from the local retail purveyor, the stricter of the two shall apply.
- (3) For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device flow rates, 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.
- (4) Using an appropriate ET based controller, an annual irrigation program with monthly irrigation schedules shall be developed and submitted for each of the following:
 - (A) The plant establishment period;
 - (B) The established landscape; and
 - (C) Temporarily irrigated areas.
- (5) Each Irrigation schedule shall include for each station all that apply:
 - (A) Irrigation interval (days between irrigation);
 - (B) Irrigation run times (hours or minutes per irrigation event to avoid runoff);
 - (C) Number of cycle starts required for each irrigation event to avoid runoff;
 - (D) Amount of applied water scheduled to be applied on a monthly basis;
 - (E) Application rate setting;
 - (F) Root depth setting;
 - (G) Plant type setting;
 - (H) Soil type;
 - (I) Slope factor setting;
 - (J) Shade factor setting;
 - (K) Irrigation uniformity or efficiency setting – minimum of 0.71 efficiency

Landscape and Irrigation Maintenance Schedule

- (1) Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.
- (2) 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; and prescribing the amount of water applied per landscaped acre; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning and weeding in all landscape areas.

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

- (3) Repair of all irrigation equipment shall be done with the originally specified components or their equivalents.
- (4) A project applicant is encouraged to implement sustainable or environmentally friendly practices for overall landscape maintenance. Industry best management practices are to be implemented.

Irrigation Audits and Audit Schedules

- (1) 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.
- (2) A certified landscape irrigation auditor shall conduct all irrigation audits and produce the reports.
- (3) For new construction and rehabilitated landscape projects (except for home owner-installed, homeowner provided landscaping less than 2,500 square feet), the project applicant shall fulfill the following requirements for landscape irrigation audits:
 - (A) Submit a landscape irrigation audit report with the Certificate of Completion to the City;
 - (B) For landscapes equal to or greater than one acre submit a schedule of landscape irrigation audits with the Certificate of Completion to the City;
 - (C) Implement the recommendations from the landscape irrigation audit report; and
 - (D) For landscapes equal to or greater than one acre, submit a landscape irrigation audit report every 5 years to the City.
- (4) For new construction and rehabilitated construction, (except for home owner-installed, homeowner-provided landscape less than 2,500 square feet), the City shall fulfill the following requirements for landscape irrigation audits;
 - (A) 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.
 - (B) Annually conduct landscape irrigation audits on a minimum of 20% of the total customer landscapes identified in Ordinance # 1362 as the highest water users as identified by the local water purveyor.
 - (i) The City shall obtain permission from the project applicant to access the property for the purposes of conducting a landscape irrigation audit.
 - (ii) The City's cost of conducting the landscape irrigation audit shall be paid by the project applicant.

SECTION B: LANDSCAPE DOCUMENTATION PACKAGE FOR ALL SUBMITTALS

- (iii) The City is not the local retail water purveyor, but will make a good faith effort to obtain necessary water use information from the local retail water purveyor.

Irrigation Efficiency.

For the purpose of determining the maximum applied water allowance, irrigation efficiency is assumed to be 0.71. Irrigation systems shall be designed, maintained, and managed to meet or exceed 0.71 efficiency.

SECTION C: Plan Preparation Requirements for all Plans

- (1) Plan standard size is to be 24" x 36" blackline drawing.
- (2) All prints submitted shall be folded to a size no larger than 9" x 12".
- (3) All plans will be accurately drawn to scale with a 1"=20' minimum. Provide bar scale on the plan.
- (4) Prior to submittal, a California Licensed Landscape Architect must sign (wet signature) and stamp each sheet of the plans and indicate license number and expiration date. No mechanical signatures will be accepted. All plans must be original drawings.
- (5) Each sheet of the landscape design plan shall contain the following statement along with a licensed landscape architect's stamp and signature " I have agreed to comply with the criteria and specifications of Ordinance # 1362 Water Efficient Landscape, and I have applied them accordingly for the efficient use of water in the landscape design plan."
- (6) The first sheet shall be a Title Sheet - See Section M for samples for each category:
 - (A) Location map showing the following:
 - (i) Project Location
 - (ii) Major Cross Streets
 - (iii) North Arrow
 - (iv) Bar Scale
 - (B) Index map showing the following:
 - (i) Street configuration within the project
 - (ii) Lot configuration and numbers
 - (iii) Project boundaries
 - (iv) Landscape Maintenance Assessment District areas (i.e. streetscapes and detention basins)
 - (v) Street names
 - (vi) Index of Sheets
 - (vii) North Arrow
 - (viii) Bar Scale: 1" = 200'
 - (C) Title Block containing the tract number and the following numbers, if applicable: Tentative Tract and phase number; Landscape Maintenance Assessment District Area Number; City Project Number, or assigned LSP number. See below for plan number assignment criteria.
 - (i) Please utilize the following identifiers on your projects:

Commercial Project	LSP - grading plan number - COM
Fuel Modification Plan	LSP - grading plan number - FM
Typical Front Yard/Street Tree	LSP - grading plan number - FYS
Slope and Erosion Control	LSP - grading plan number - SLE
Models	LSP - grading plan number - MD

SECTION C: PLAN PREPARATION REQUIREMENTS FOR ALL PLANS

Medians LSP - grading plan number - MED
Joshua Report & Mitigation Plan LSP - grading plan number - JMP
Mitigation Plan LSP - grading plan number – MIT

HOA & City projects – see below

Homeowners Association Plans can have many subcategories and need to have each subcategory listed on the plans. The previous naming convention still applies. LSP – grading plan number – HOA and then the subcategory.

- Interior Slope and Erosion Control
- Exterior Slope and Erosion Control
- Street Tree Plan
- Pocket Park
- Community Park
- Fuel Modification Plan
- Open Space

An example: HOA grading plan 08-99 wants to submit an open space plan. It would be titled LSP 08-99 HOA Open Space

- (ii) The assignment of City project numbers is addressed in Section D and LMD numbers in Section E.
- (7) Landscape Architectural firm name, address, email address, telephone number, and date of plan preparation, stamp and original wet signature.
- (8) Name, address and telephone number of owner and developer with contact name, phone number, and e-mail address if available.
- (9) Revision block with revision number, date, initials of Landscape Architect, description of plan changes, and spaces for city approval and date. All revisions within the plan shall be referenced on the title sheet.
- (10) General Notes to be placed on the Title Sheet of all plans – Each type of plan will have a unique set of General Notes. See Section M for samples of title sheets that will have the general notes for each type of project already on the title sheet. Each section will also have the unique title notes included.
- (11) The sheets following the Title Sheet shall include the following:
- (A) Precise location of all utilities, structural elements (including walls), hardscape, existing vegetation to remain, and topographic conditions (expressed as slope gradients) within the landscaped areas.
 - (B) All existing and proposed easements for drainage devices, roadways, utilities, etc.
 - (C) Top and toe of all cut and fill slopes.

SECTION C: PLAN PREPARATION REQUIREMENTS FOR ALL PLANS

- (D) Signature block for plan checker (plan checker will sign all sheets, City Engineer, or designated representative will sign only the Title Sheet). Sample provided in Section M.
- (E) North arrow and scale, 1" = 20' scale minimum, include bar scale.

SECTION D: City Projects and Landscape Maintenance Districts

- (1) Public Works Project Management staff will assign a unique Project Number to be placed on the plans for all City Projects. The Project number will be listed on the title block and the side of the plan as follows: LSP – grading plan number – CP and then the # assigned by Project Management Staff. For example LSP-08-99 CP 567 would signify grading plan # 08-99 and City Project # 567.
- (2) City Project Submittal: Submit three (3) copies of landscape and irrigation plans to the Public Works Project Manager for distribution for plan check comments. Electronic plan checking is available. Please contact your Project Manager for further information.
- (3) LMD Number assignment. Engineering staff will assign the unique LMD number for each project upon receipt of the formation fee; a letter from the Developer requesting the formation of the LMD, and the LMD map exhibit. See Section L for LMD map exhibit template. The LMD identifier on the plans will be listed as follows – LSP – grading plan number – LMD and the number assigned by staff. For example – LSP 08-99 LMD 234 would be identifying grading plan # 08-99 with LMD 234 as the identifier of that particular plan.
- (4) LMD Project Submittal: Submit three (3) copies of the landscape and irrigation plans along with other submittal requirements as listed in Section B to the Engineering Department. Electronic plan checking is available. Please contact the Engineering Department at 661-267-5272 for further information.
- (5) The following GENERAL NOTES are to be placed on the title page of both plans. (Sample title sheets can be located in Section M.)
 - (A) All work shall be performed by a California Licensed Contractor holding a current C-27 License (Landscaping) or, under the appropriate circumstances, a current General “A” or “B” license, and maintaining a valid City of Palmdale Business License.
 - (B) The Contractor shall obtain a Landscape Permit from the Engineering Department prior to commencement of work.
 - (C) All work shall conform to Standard Specifications for Public Works Construction (SSPWC), latest edition, (published by Building News, 3055 Overland Avenue, Los Angeles, CA) for all work performed and not specifically mentioned herein. All work shall be done in accordance with the plans, specifications, and any special requirements of the permit. Any violation will result in the stoppage of all work until the violation is corrected.
 - (D) No work shall commence on any project until a pre-construction conference has been held with the appropriate City Inspection Department as listed below:
 - (E) The contractor shall be responsible for notifying the City Maintenance Department for all required site visits at 661-267-5346. The Public

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

Works Landscape Inspector will verify the static water pressure during the pre-construction conference. The Landscape Contractor will install a pressure gauge on the project water meter(s) in order to do so.

- Pre-construction conference 7 days Notice
- Street sleeving inspection 48 hr Notice
- Mainline inspection & pressure test 48 hrs. Notice
- Valves, wiring, laterals & bubblers 48 hrs. Notice
- Grounding rod installation 48 hrs. Notice
- Erosion netting & hydroseed 48 hrs. Notice
- Coverage test,
- Soil amendments,
plant material, & planting 48 hrs. Notice
- Maxicom Certification
through Kern Turf via email 2 weeks Notice
- Final walk-through for completion of
Improvements 7 days Notice
- Final walk-through for acceptance
of the project 7 days Notice

(F) Contractor shall become familiar with all underground utilities, pipes and structures. Contractor shall take sole responsibility for any cost incurred due to damage of said utilities. Prior to the commencement of work the contractor shall contact Underground Service Alert (800) 422-4133 for location of underground utilities.

(G) Do not willfully proceed with construction as designed when it is obvious that unknown obstructions, area discrepancies and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the Public Works Landscape Inspector and the Project Manager. The contractor shall assume full responsibility for all necessary revisions, due to failure to provide such notification.

(H) Temporary Erosion Control:

- (i) The surface of all slopes more than (3) feet in vertical height and steeper than 5:1 shall be covered with City of Palmdale approved erosion control blankets – North American S-150. No jute netting is allowed. Installation shall conform to manufacturer's specifications. Deviations from this requirement shall be submitted in writing with an alternate plan for temporary erosion control (water and dust). The City Engineer shall approve this plan.
- (ii) Installation of the erosion control blankets shall be installed to the satisfaction of the City Engineer prior to the acceptance of rough grading.

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

- (I) Permanent Erosion Control:
 - (i) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be covered with City of Palmdale approved erosion control blankets. Installation shall conform to manufacturer's specifications.
 - (ii) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be protected against damage by erosion by planting with ground cover plants. Slopes exceeding fifteen (15) feet in vertical height shall also be planted with trees spaced at no more than twenty (20) feet on center or shrubs spaced at no more than ten (10) feet on center or a combination of both to equal the intent. All plant material shall be triangularly spaced.
- (J) Slopes requiring permanent stabilization shall be provided with an approved system of irrigation.
- (K) All planting and irrigation shall be installed to the satisfaction of the City Engineer, or designated representative, prior to acceptance of final grading approval. Contact the Public Works Landscape Inspection line at 661-267-5346 for inspection of all City Projects.
- (L) The Landscape Architect signing these plans is responsible for meeting all applicable Conditions of Approval pertaining to Landscape Architecture for this project, and for assuring the accuracy and adequacy of the work hereon. In the event of discrepancies arising during installation of landscape improvements, the Landscape Architect signing these plans shall be responsible for determining an acceptable solution, and revising the plans for review and approval by the City prior to installation of landscape improvements.
- (M) The Landscape Architect signing these plans has agreed to comply with the criteria and specifications of Ordinance # 1362 – Water Efficient Landscape, and has applied them accordingly for the efficient use of water in the landscape design plan.

GENERAL DESIGN REQUIREMENTS FOR CITY PROJECTS & LMD'S:

- (1) Landscaping design shall conform to Standard Specifications for Public Works Construction (SSPWC), latest edition, (published by Building News, 3055 Overland Avenue, Los Angeles, CA) for all work performed and not specifically mentioned herein. In case of a discrepancy, the following criteria shall govern.
- (2) The design shall be prepared in such a way as to minimize the amount of supplemental water required. Each sheet of the landscape design plan shall contain the following statement along with a licensed Landscape Architect's stamp and signature: " I have agreed to comply with the criteria and specifications of Ordinance # 1362 – Water Efficient Landscape, and I have applied them accordingly for the efficient use of water in the landscape design plan."

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

- (3) A water-conserving approach to landscape design can be implemented through a variety of techniques and practices, including the use of appropriate plant material, the placement of plant material into compatible irrigation zones, irrigation techniques, irrigation products, irrigation management, evaporation control, etc. Such techniques shall be addressed in the above-mentioned concept.
- (4) General guidelines for water conservation will be expanded upon in the individual planting and irrigation sections. Each project will be required to meet the requirements of Ordinance # 1362, Water Efficient Landscape, and provide the completed ordinance work sheets as outlined in Section B.

Irrigation General Design Requirements:

- (1) The irrigation system shall be a fully automatic system. Irrigation plans shall indicate location of irrigation water meters, points of connection, backflow devices, valves, pumps, master valves, flow sensors, controllers, sprinklers, emitters, mainline and lateral line pipes and their sizes, models and sizes of equipment specified. The irrigation valve sequencing should be numbered in the direction of traffic flow. See Detail I-21 located in Section L.
- (2) The City of Palmdale utilizes the Rain Bird Maxicom Central Irrigation Control System. All components of the irrigation system will utilize Rain Bird Products including: pumps, master valves, controllers, flow sensors, quick couplers, etc. on these projects. Please process the CCU request form located in Section L for obtaining the requirement information to be placed on the plans for pumps, CCU location and frequency numbers. All Contractors who install this system must hold current Rain Bird Maxicom Installer Certification.
- (3) The design water window for City Projects and Landscape Maintenance Districts is eight (8) hours. All projects are required to provide a schedule on the plans clearly showing that all plant material can be watered during this time period. No exceptions.
- (4) Spray irrigation coverage for all City Projects shall provide 133% overlap coverage. See detail I-26 located in Section L for spacing clarification.
- (5) All City Projects and Landscape Maintenance District irrigation system enclosures shall be consolidated into a designated area approved by the Public Works Landscape Inspector. The irrigation system shall be designed to omit any irrigation or irrigation over spray into the enclosure zone. The enclosure zone will be separated from the landscape by 6" concrete mow curbs and will have stabilized decomposed granite as the groundcover. See detail I-21 located Section L.
- (6) Installation book, sheet and how to incorporate City specifications shall be indicated whenever possible. Installation shall conform to the City approved irrigation details included in Section L.
- (7) The selection of irrigation systems components shall be based upon the overall design and upon water conservation principles. A minimum of 25%

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

of each landscape shall be irrigation with low volume systems. No drip irrigation shall be specified for City Projects or Landscape Maintenance Districts. Low flow systems for City Projects and LMD's will utilize Rain Bird Pressure Compensating Bubblers on a Schedule 80 riser. See detail I-27 located in Section L. The designer shall indicate on the irrigation plan the proposed best water management principles.

- (8) The spray, rotor, and bubbler irrigation systems shall be organized into hydrozones based upon plant material selections and environmental considerations (i.e. sun exposure, slope aspect, soil conditions, plant water needs, etc.).
- (9) No above ground UVR pipe to be specified on any projects within the City. All pipe to be buried with trenches compacted to adjacent grade.
- (10) No net-film or underground seeping irrigation pipe to be specified on any City Projects or Landscape Maintenance Districts.
- (11) Where above ground irrigation components (such as automatic controllers and backflow devices) are placed on slopes, low retaining walls and/or curbing shall be required to be installed at the location to prevent erosion.

(12) **Provide the following information on the plan by the irrigation legend:**

- Name of Water Purveyor and contact name and phone number
- Size of water meter and service line
- Static water pressure
- Design water pressure
- Design highest gpm/gph flow
- Design lowest gpm/gph flow
- Worst-case pressure loss calculations – See detail I-35 in section L.
- Place irrigation schedule on plans showing how all irrigation can run during the 8-hour water window.
- Maxicom Central Irrigation Control Specifications to include:
CCU location, radio frequency, channel number

(13) **Backflow Device:**

- (A) The backflow prevention device shall be a reduced pressure Febco 825 YA backflow installed at least twelve (12) inches above grade, measuring from the bottom of the device.
- (B) The backflow device shall be winterized/wrapped with a Thermo-cell insulation tape to R-11 protection, or covered with an equivalent R-rated insulated blanket.
- (C) The backflow shall be enclosed in a locked solid side stainless steel LeMeur single swing with insulation enclosure to match the size of the backflow specified. The backflow shall be placed on a concrete pad, and the risers shall be brass. See detail I-7 located in Section L.

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

- (D) The contractor shall provide a padlock for each enclosure to the Maintenance Department once the maintenance period has been completed.

(14) PVC Pipe and Fittings:

- (A) Pressure supply lines downstream of the backflow prevention device shall be Class 315 PVC in sizes 2" and larger and Schedule 40 PVC in sizes 1 - ½" or smaller. All PVC 6" or larger shall be gasketed with cast iron fittings. Non-pressure lines shall be schedule 40 PVC on City Capital Improvement projects and Landscape Maintenance Districts.
- (B) All fittings shall be standard weight Schedule 40 PVC.
- (C) All threaded nipples shall be standard weight Schedule 80 with molded threads. Solvent cement joints shall be made as prescribed by the manufacturer. An aggressive primer shall be used in conjunction with a solvent primer designed for the fit of the pipe and fittings of each size range specified.
- (D) Provide a minimum of 24" cover for all pressure lines.
- (E) Provide a minimum of 6" separation between lines. Parallel lines shall not be installed directly over one another. Installation of lines for other trades shall not be laid in irrigation trenches, but shall be installed in a separate trench. See detail I-14 located in Section L.
- (F) Concrete thrust blocks shall be installed on all pressure line changes of direction and pipes exceeding 2" in diameter. See detail I-37 located in Section L.

(15) Sprinkler Heads:

- (A) Double ell swing joints shall be installed on all riser assemblies along with a Marlex break joint. Refer to details I-10 through I-13 located in Section L.
- (B) All sprinklers shall be Rain Bird pop-up, and shall utilize the SAM-PRS feature to prevent low head drainage issues. A separate check valve may be required if the Landscape Architect determines that low head drainage is excessive.
- (C) 12" low angle pop-ups for shrubs and 6" low-angle pop-ups for lawn are required on all projects.
- (D) Stream rotors shall have stainless steel bodies, whenever possible. No impact rotors allowed.
- (E) All nozzles are to be Rain Bird U nozzles whenever possible. Rotary nozzles are acceptable.
- (F) Spray heads shall have a screw adjustment.
- (G) Riser nipples for all sprinkler heads shall be the same size as the riser opening of the sprinkler body.

(16) Bubblers:

- (A) A pressure compensating tree bubbler system comprised of two bubblers attached separately to the lateral line shall be installed to each tree. See detail I-8 located in Section L.
- (B) All tree bubblers shall be installed on valves separate from the other planting.
- (C) A pressure compensating bubbler shall be installed to each shrub on a raised riser, unless the planter shall be irrigated with flat spray heads on 12" high pop-up sprinklers. See detail I-27 located in Section L.

(17) Valves: Gate , Quick Coupler and Flush valves

- (A) Gate valves up to 3" shall be of brass construction designated for a working pressure of not less than 150 PSI or the maximum PSI available on-site, whichever is greater. Gate valves 4" or above shall be cast. If designing to site pressure, indicate the minimum PSI available on the irrigation plan.
- (B) Quick coupling valves shall be installed on the mainline a minimum of every one hundred (100) feet. Quick coupling valves shall be of red brass with a wall thickness guaranteed to withstand normal working pressure of 150 PSI without leakage.
 - (i) City Projects – The 1" locking cap quick coupling valve shall be staked with a 3 foot section of 1 ½" Schedule 40 PVC fastened with a stainless steel hose clamp. See detail I-5 located in Section L.
 - (ii) Landscape Maintenance Districts – the ¾" locking cap quick coupling valves shall be staked with a 3 foot section of 1 ½" Schedule 40 PVC fastened with a stainless steel hose clamp. See detail I-5 located in Section L.
- (C) Flush valves will be specified at the end of all drip irrigation lateral lines.
- (D) All irrigation systems will have a pressure relief and/or air relief valve at the end of the mainline if the system does not utilize a looped mainline system.

(18) Irrigation Remote Control Valves:

- (A) Irrigation master valves must be a Rain Bird normally closed valve. See detail I-23 located in Section L.
- (B) City Capital Improvement Projects: Rain Bird PEB - PRS valves.
- (C) Landscape Maintenance Districts: Rain Bird GB – PRS valves.
- (D) All remote control valves will have Christy tags, or equivalent markers for each valve attached to the valve stem and will be easily visible when the valve box is opened.

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

- (E) All valve sequencing shall follow the flow of traffic to aid in inspection and maintenance duties.

(19) Valve boxes:

- (A) All gate valves and quick coupling valves shall be constructed of commercial grade materials, and be sized appropriately for the location. All will have bolt down lids. If located in a vehicle traffic zone, concrete boxes will be specified.
- (B) All irrigation valve boxes, when appropriate, will be the Rain Bird brand made with 100% recycled materials. The lid will be green (which is not 100% recycled).
- (C) All valve boxes will be branded with 2" letters on the top of the valve box with the letter of the POC and the valve number clearly legible.
- (D) All valves, quick couplers and utility boxes shall be installed a minimum of 8 feet away from all trees.
- (E) Valve boxes for all electrical control valves shall be constructed of commercial quality materials appropriate for the location. They shall be a minimum of 12" by 18" in size, with a bolt-down lid. If located in an area where vehicle traffic might occur, a concrete box shall be specified.

(20) Wiring:

- (A) Wire shall occupy the same trench and shall be installed along the same route as the pressure supply lines whenever possible, and placed under the main lines. When more than one wire is placed in trench, the wiring shall be taped or zip-tied together at intervals of ten (10) feet.
- (B) Use continuous wire between remote control valves and the controller/timer.
- (C) All wire of exposed runs to be inside conduit.
- (D) Sizing of wire shall be according to manufacturer's recommendations, but not smaller than 14 gauge in size.
- (E) All control wire shall be black in color. All common ground wire (14g) shall be white in color.
- (F) A red wire shall be looped (24" loop) from the controller through every valve and quick coupler. A separate red wire shall be provided for each mainline run.
- (G) Size expansion loops of eighteen inches shall be provided at each wire connection and/or directional turn. Use one splice per connector sealing pack.
- (H) Flow Sensors shall utilize Scotch Lock Wire Connectors per Rain Bird standards.

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

- (I) All other wire connections shall be made using Scotch 3M DBY-6, DBR or other connections as approved by the City Public Works Landscape Inspector.

(21) Central Irrigation Control System:

- (A) The entire irrigation system shall be Rain Bird Maxicom Central Irrigation Control compatible. The Landscape Architect of each project will utilize the CCU form provided by the City – see Section N Appendix F - to provide the pertinent information necessary for the City and vendor to properly specify: controllers; control cluster unit locations with radio frequency assignments and channel numbers; Site SATS; booster pumps; flow sensors; rain gauges; remote control valves, etc.
- (B) Automatic controllers shall be installed in a solid stainless steel top loading V.I.T Strongbox pedestal locking enclosure. The automatic controller shall be placed in such enclosure apart from the backflow prevention device, and next to the tract boundary wall whenever possible. See detail Section L. All Maxicom controllers will be grounded utilizing the grounding plate design. See detail Section L. The Public Works Landscape Inspector shall witness grounding rod installation and all required Cadweld connections.
- (C) All installations with a supplemental grounding grid need to connect back to the power source (pedestal or breaker panel ground) per NEC standards. See detail I-17 located in Section L.
- (D) The Landscape Contractor must be a “Rain Bird Maxicom Central Irrigation Control Certified Installer”.
- (E) The contractor shall provide a City approved padlock for each enclosure and access gate.

(22) Booster Pumps:

- (A) Landscapes designed with Rain Bird Irrigation Booster pumps shall utilize galvanized or brass risers extending from the mainline to the pump on both inlet and outlet sides of the pump. PVC risers will not be accepted.
- (B) A cooling and heating system with ventilation fan will be provided for each specified pump.
- (C) A 1 ½” conduit must be installed from the electric meter pedestal pad, through the pump enclosure pad, to the booster pump electrical panel for the electrical supply to the pump. A separate 1” conduit must be installed from the controller enclosure pad, through the pump enclosure pad, to the booster pump electrical panel with three (3) 14 gauge wires (1 black, 1 white, 1 red). A Rain Bird authorized pump technician will connect these additional wires during the initial pump start up sequence. See detail I-22 in Section L for pump details.

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

- (D) All Landscape Maintenance Districts with booster pumps require a minimum of a 1 ½" point of connection. The Maxicom committee will review all plans specifying booster pumps before the plans are approved by the City Engineer.
- (E) The irrigation system will be evaluated at the end of the one-year maintenance period to make sure the irrigation system and booster pump are still compatible before final acceptance of the irrigation system. If the system needs to be modified to keep the irrigation booster pump working correctly, the Developer will be responsible for all associated costs.

(23) Detention/Retention Basins

- (A) All landscaping at or within the basins shall be on valves separate from the streetscape landscaping.
- (B) All trees at or within the basins shall be irrigated with tree bubblers (two per tree) on valves separate from the rest of the system. See tree bubbler detail Section L. Trees will be selected from the approved trees for slope and erosion control listed in Section H with the exception of the Elderica Pine trees. No Elderica Pine trees will be permitted in detention basins or within the Landscape Maintenance District.
- (C) Rotor sprays are recommended for large areas; impact heads are not allowed. MP rotator nozzles are acceptable.
- (D) No sprinklers shall be installed at the toe of the slope or in the bottom of the basin. Start the sprinkler lateral lines at least 3 feet up from the bottom of the basin and provide 133% coverage for basins located within City Projects and the Landscape Maintenance District. See detail I-26 in Section L explaining the 133% coverage sprinkler spacing.
- (E) To prevent erosion, irrigation nearest the toe of the slope will be on a separate valve, and the scheduled irrigation run time should be 1/3 that of the top of slope.
- (F) On all City Projects and Landscape Maintenance District basins, the Contractor shall provide a City keyed "Master" padlock for each gate.

(24) Medians:

- (A) All landscaped medians will require a separate water and electrical connection from any other system. The median landscape and irrigation system will be designed to Landscape Maintenance District Standards and will utilize Rain Bird Maxicom Central Irrigation Control Systems information.
- (B) A reference to the street improvement plans will be included on the landscape plans to coordinate the installation of the approved

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

hardscape. A cross section of the median will be included on the landscape plans. See details LC-3A thru LC-3C in Section L.

(25) Irrigation Notes – (to be placed on the irrigation plan):

- (A) The contractor shall obtain and pay for any and all permits and all inspections required, including, but not limited to:
 - (i) City of Palmdale plumbing permit through Building & Safety;
 - (ii) Backflow test and certification;
 - (iii) City of Palmdale electrical permit through Building & Safety;
 - (iv) City of Palmdale Landscape permit through Engineering;
 - (v) Maxicom Certification through Kern Turf Supply.
 - (vi) Irrigation audit by a Certified Irrigation Auditor
- (B) The manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of articles used in this installation furnishes directions concerning points not shown in the drawings and specifications.
- (C) A complete material list shall be submitted to the City Maintenance Department prior to performing any work for items specified on the plan. Material list shall include the manufacturer, model number and description of all materials and equipment to be used. Equipment or materials installed or furnished without prior approval of the City Engineer, or his representative, may be rejected and the Contractor required to remove such materials from the site at his own expense.
- (D) Record Drawings and Controller Charts for City Capital Improvement Projects and Landscape Maintenance Districts. Contractor to have current and correct as-built drawings on site while working. If the Contractor does not have the as-built drawings on-site, or has not adjusted the drawings from a previous inspection, no inspection will be conducted until the drawings are updated and made available again.
- (E) The Contractor shall dimension from two permanent points of reference (building corners, sidewalks, road intersections, etc.) The location of the following items:
 - Connection to existing electrical power;
 - Gate valves;
 - Meter and connection to existing water lines;
 - Backflow;
 - Booster pump;
 - Master valve and flow sensor;
 - Supplemental grounding grid;
 - Light standards;
 - Routing of sprinkler pressure lines;
 - Sprinkler control valves;
 - Quick coupling valves.
 - Controller (s)

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

- (F) On or before the final inspection, the Contractor shall deliver the completed set of mylars to the City Public Works Landscape Inspector, plus two blue-line copies of the as-built drawings. Delivery of the mylars will not relieve the Contractor of the responsibility of furnishing required information that may be omitted from the prints.
 - (G) The contractor shall also turn over a digital copy of the as-built drawings and a digital copy of the Maxicom information on the project in a format acceptable to the City.
 - (H) The City Public Works Landscape Inspector shall approve record drawings before controller charts are prepared.
 - (I) Provide two (2) controller charts for each controller supplied. The chart shall indicate the area controlled by the automatic controller and shall be the maximum size that can be stored within the controller cabinet door without folding.
 - (J) The controller chart shall be a blackline or blue line ozalid print. A different color shall be used to indicate the area of coverage for each valve station.
 - (K) When completed and approved, the controller charts shall be hermetically sealed between two pieces of plastic, each piece being a minimum of 10 mils thick.
 - (L) These controller charts shall be completed and approved prior to final inspection of the irrigation system.
 - (M) The backflow prevention device shall be tested and certified by a Los Angeles County Certified backflow tester and proof submitted to the City of Palmdale on all projects with testable devices. This shall be done before the start of maintenance of all City Projects and Landscape Maintenance Districts, and yearly until the project is accepted.
 - (N) The irrigation system shall be flushed prior to installation of irrigation heads.
 - (O) The City Public Works Landscape Inspector shall approve the final location of the automatic controller prior to installation. The installation will be coordinated with the Building and Safety Inspector, who will provide inspection and approval for Edison connection.
 - (P) The irrigation trenches shall only be center-loaded with all joints & separation of lines exposed until all required tests are performed.
- (26) Adjustment of the System:
- (A) The Contractor shall flush and adjust all irrigation emission devices for optimum performance and to prevent over spray onto walks, roadways, and buildings as much as possible.

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

- (B) If it is determined that minor adjustments in the irrigation equipment will provide proper and more adequate coverage, the Contractor shall make such adjustments prior to planting. Adjustments may also include changes in sizes and degrees of arc as required.
 - (C) Any alteration to the hydraulics of the irrigation system must be approved by the Landscape Architect of Record and approved by the City before any changes are made. Minor sprinkler adjustment is not the same as altering the hydraulics by adding sprinklers, or eliminating or adding valves.
 - (D) Lowering or raising sprinkler heads by the Contractor shall be accomplished within 10 days after notification by the City through a written notice provided by the Public Works Landscape Inspector.
 - (E) All sprinkler heads and bubblers shall be set perpendicular to finished grades unless otherwise designated on the plans.
- (27) Testing of the Irrigation System:
- (A) The contractor shall request the presence of the City Public Works Landscape Inspector at least 48 hours in advance of testing by calling 661-267-5346.
 - (B) The contractor will have a 'Certified Irrigation Auditor' present during all major irrigation installation and testing.. The auditor will provide a final report to the Project Manager once the system has been installed and tested. All system defects will be immediately repaired to make sure the irrigation system passes the minimum of 71% efficiency.
 - (C) Backflow, booster pump (if specified), master valve, all remote control valves, and quick coupler valves are to be installed on the mainline before calling for a mainline test. Provide blowouts at the end of all mainline runs to eliminate all air from the lines.
 - (D) Utilizing a hydrostatic pressure pump, pressurize the mainline to 150 psi, and sustain pressure in lines for not less than two (2) hours. If leaks develop, replace and repeat test until entire system is proven watertight.
 - (E) Test all lateral lines with all swing joints installed, but without irrigation devices attached, under hydrostatic pressure of 125 psi for 15 minutes and prove watertight.
 - (F) All hydrostatic tests shall be made in the presence of the City Public Works Landscape Inspector and the Certified Irrigation Auditor. No piping shall be fully backfilled (center loading is acceptable) until it has been inspected, tested and approved in writing.
 - (G) Coverage Test: When the sprinkler irrigation system is completed, perform an automatic coverage test in the presence of the City Public Works Landscape Inspector to determine if the water coverage for planting areas is complete and adequate. Furnish all materials and

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

perform all work required to correct any inadequacies of coverage. Do not install the system as specified on the plans when it is obviously inadequate without bringing this to the attention of the Landscape Architect. This test shall be accomplished before any plant material is planted.

- (H) The Landscape Contractor must have a current "Rain Bird Maxicom Central Irrigation Control Installer" certificate from Rain Bird. The certified individual must be present when the Central Control system is installed and certified.
- (I) The Contractor must turn over all invoices for the purchase of Rain Bird Products to the City:
 - i. For all Landscape Maintenance Districts, these receipts shall be provided to the Public Works Landscape Inspector at the time of the coverage test, as the entire irrigation system should be installed at that time.
 - ii. All Capital Improvement projects will turn over the receipts before the start of maintenance can commence.
- (J) The installation of the Maxicom system-grounding rod and Cadweld connections shall be made in the presence of the City Public Works Landscape Inspector. A minimum of 24-hour notice is required.
- (K) Install no multiple assemblies on plastic lines. Provide each assembly with its own outlet. No doglegging of mainline valve installation will be permitted.
- (L) All PVC pipe and fittings will be handled with care to prevent cracking or splitting, and shall not be stored in the sun. No sun-damaged pipe is to be used. All sun-damaged pipe will be removed and replaced immediately when the Public Works Landscape Inspector provides written notice.
- (M) The entire irrigation system shall be under full automatic operation for a period of seven (7) days prior to any planting. The City reserves the right to waive or shorten the operation period.
- (N) The Contractor will provide the inspector with a copy of the completed 'Certificate of Compliance, Irrigation Schedule, Landscape and Irrigation Maintenance Schedule, Landscape Irrigation Audit Schedule, and the Irrigation Audit Report as required by Ordinance #1362 – Water Efficient Landscape.

End of Section to be placed on plan

(28) Planting General Requirements:

- (A) The planting design shall be based upon the principles of water conservation: groupings of plant material based upon like water

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

requirements, ecological requirements, climatic conditions, selection of drought tolerant plant material, etc.

- (B) All plants shall be selected from the City of Palmdale recommended Plant List available in Section J. Requests for deviations from this list should be submitted in writing with information provided on the selected material, including growth habit, diseases and pests, root patterns, general characteristics, drought tolerance and compatibility with Sunset Zone 11 climate (High Desert).
 - (C) No turf grass is allowed within LMD areas. The only exception to this rule would be recreational areas in City Projects such as parks. (The plans shall indicate the total square footage of area, planted in ground cover and turf).
 - (D) Planting plans shall have a plant legend with symbols indicating the genus and species, quantities and sizes of all plant material. Symbols representing the plant material will show the plant material at 75% of maturity.
 - (E) Planting details and specifications shall also be provided – City details provided in Section L. Planting details shall encompass the specifications provided herein and conform to the American Public Works Association Standard Plans. All specifications provided herein shall take precedence over the standard plans where discrepancies exist.
 - (F) No planting will be allowed on City Projects or Landscape Maintenance Districts until the electrical meter has been installed, the irrigation system has functioned automatically for seven days, and the coverage test has been performed in the presence of the City Public Works Landscape Inspector. The City reserves the right to modify or eliminate this requirement.
- (29) Plant material
- (N) All trees shall be a minimum of 15-gallon size.
 - (O) A minimum of 20% of all trees shall be 24” box size or larger on City Projects and Landscape Maintenance Districts.
 - (P) The quantity and species of trees shall require approval from the City Engineer or designated representative. Any substitutions of species will require the approval of both the Maintenance and Engineering Departments.
 - (Q) All street trees shall be selected from the approved plant list for street trees. There will be no pinus eldarica “Mondell” trees specified on any Landscape Maintenance District project in the basins or on the street. Eldarica Pine trees will only be allowed on very large slopes and within City Parks. City street tree and easement-approved trees are located in Section J.

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

(R) All trees shall be planted not less than:

- Seven (7) feet from adjacent property lines;
- Fifty (50) feet from the beginning of curb return on an exit side of curb return;
- Twenty (20) feet from lamp standards;
- Ten (10) feet from fire hydrants and driveways;
- Five (5) feet from all sidewalks, service walks;
- Eight (8) feet away from water meters, sewer pipes, drain pipes, irrigation valves, and irrigation controllers;
- Under no circumstances should a tree be planted that will create an obvious line-of-sight traffic safety issue. The Contractor is responsible for notifying the private Landscape Architect of the issue, and the Architect is responsible for rectifying the situation. Plan changes shall be approved by the City Engineering Department before implementation;
- All trees in lawn areas require arbor guards.

(F) Shrubs shall be a minimum of five-gallon size. Deviations from this requirement shall be submitted in writing and shall be based upon species, site conditions, climatic conditions, etc.

(G) On City Capital Improvement Projects and Landscape Maintenance Districts, shrubs shall be located a minimum of 36" from all sidewalks with some consideration given for site conditions and plant species.

(H) Ground cover shall be prostrate shrubs or flatted ground cover, or a combination of both. Spacing for ground cover shall be 12" O.C. for flatted ground cover. Spacing for prostrate shrubs shall be dependent upon species characteristics.

(I) A mulch (organic or inorganic) can be substituted for ground cover in certain design situations. Approval by the City Engineer or his designated representative is required. Bark mulch is highly discouraged on any City project. Stabilized decomposed granite or rock mulch is preferred.

(J) Vines shall be a minimum of five (5) gallon size.

(30) Related Landscaping Material:

(A) Organic Soil amendment shall be Type 1 as described in the Standard Specifications for Public Works Construction. Bark mulch shall comply with the same requirements.

(B) Planting tablets for trees and shrubs shall be 21-gram Agriform 20-15-5 two-year timed release or approved equal. If one-gallon ground cover plants are used, then a 5-gram tablet shall be used.

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

(C) Staking materials shall be as follows:

- Wood tree stakes shall be lodge pole pine, fully treated with an approved wood preservative, 2" (minimum nominal size) diameter;
- Wood tree stakes shall be 12 feet long for 24" box trees and 10 feet long for 15 gallon trees;
- Tree ties shall be cinch ties – 4 per tree;

(D) Guying hardware: See details P-3 and P-4 in Section L

- (i) Guy wire: zinc-coated # 10 steel wire guy, minimum 3 foot
- (ii) ½" 2-ply hose cover wire loop
- (iii) Turnbuckles: galvanized or dip painted, size as required
- (iv) Safety sleeve: ½" white PVC full length of wire
- (v) "Maxwell" or equal tree anchors with 4" minimum cover

(E) Mulch shall be 65/35 mix, or approved equal when bark mulch is specified; however stabilized decomposed granite or rock mulch is preferred. A porous weed fabric shall be specified beneath all mulch except stabilized decomposed granite.

(F) Erosion control matting shall be as specified in the standards for slope planting North American Green S150 – No jute netting. See Section H for more information.

(G) Root barriers shall be 24" Universal Root Barrier by Deep Root Corporation, or approved equal. All root barriers will be installed on a linear basis, no root circling, and must extend a minimum of five (5) feet in each direction from the center of the tree. See detail LC-5 located in Section L.

(H) Arbor Guards shall be by Deep Root Corporation, or approved equal, and shall be installed on trees in turf areas immediately after planting and staking.

(31) Fine Grading and Headers

(A) Installation of all landscaping shall conform to the Standard Specifications for Public Works Construction.

(B) No slopes in the Landscape Assessment District shall exceed 3:1.

(C) All slopes steeper than 5:1 shall be installed per the City's Standards for Slope Landscaping. See Section H.

(D) Final grade shall insure positive drainage of the site. Drainage in planting areas is to be smooth and uniform with a minimum gradient of 2%.

(E) A minimum of eighteen inches of level planting area shall be provided at the toe of all slopes. If possible, a 3-foot flat area on the top of the slope is requested.

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

(F) 6" concrete headers shall be installed between shrub beds and turf areas and at all limits of work not already defined by walls, curbing, sidewalks, etc. on City Projects and Landscape Maintenance Districts. See detail LC-1 located in Section L.

(32) Tree, Shrub and Vine Planting

(A) All excavated holes shall be twice the diameter and one and one half the depth of the root ball.

(B) Container plants shall be backfilled with (unless the soils report differs):

- 6 parts by volume on-site soil
- 4 parts by volume organic amendments
- 3 lbs. of commercial fertilizer per cubic yard of mix

(C) Planting tablets shall be placed in the upper third of the excavated planting holes in the following quantities (unless the soils report differs):

- 1 tablet per one gallon container
- 2 tablets per five gallon container
- 3 tablets per 15 gallon container
- 8 tablets per 24" box
- 12 tablets per 36" box

(D) An earthen basin shall be constructed around each plant. 2" for shrubs, 4" for trees at the base of the plant pit, not root ball.

(E) Vines shall be removed from nursery stakes and securely attached to walls or fencing. See detail P-7 located in Section L.

(33) Staking and Guying:

(A) All 15 gallon and 24" box size trees shall be staked with two (2) tree stakes placed perpendicular to the prevailing winds. On City Projects and Landscape Maintenance Districts the Public Works Landscape Inspector must be contacted for clarification, if necessary. See details P-1 and P-2 located in Section L.

(B) The tree stakes shall not penetrate the root ball. Tree stakes will be spaced far enough from the tree so branches do not come into contact with stakes under normal movement.

(C) All 36" box size and larger trees shall be guyed. In small areas where guying is impractical, three (3) 2" galvanized poles will be utilized for stakes. See detail P-3 located in Section L.

(34) Miscellaneous Planting Requirements:

(A) Install arbor guard trunk protectors or approved equal at the base of all trees located in turf areas.

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

- (B) Install deep root barriers on all trees planted within five (5) feet of sidewalk, curb, or walls, or as directed by Public Works Landscape Inspector. Root barriers to be linear only and should never encircle the roots of the tree. See detail LC-5 in Section L.
- (35) Decomposed Granite – All decomposed granite will be required to be stabilized in place. See detail Section LC-2 in Section L.
- (36) Detention/Retention Basins
- (A) Landscape and irrigation plans are required for all basins, unless exempted by Conditions of Approval, or the City Engineer.
- (B) The basins are to be enclosed with walls or as directed in the Conditions of Approval for the project. Wall details shall be placed on the grading plan.
- (C) A landscape buffer between the sidewalk and the basin enclosure (minimum of 5' width) is to be irrigated on valves separate from the interior of the basin, and planted with trees, shrubs and groundcover.
- (D) Trees (with the exception of Pinus eldarica "Mondell") on the approved slope and erosion control list in Section H shall be planted at 25' O.C. at the top of the slope inside the basin enclosure. See Section J for other tree planting specifications.
- (E) The slopes of the basin (inside the enclosure) are to be hydroseeded with a drought tolerant mix as approved by the City Engineer, or his designated representative.
- (F) See Section H for Hydroseeding specifications.
- (37) Planting Notes (to be added to the planting plans):
- (A) Deliver all plant material with legible identification tags.
- (B) On All City Capital Improvement Projects and Landscape Maintenance Districts an agronomic analysis shall be performed to determine the needs of the soil. The soil sample shall be taken from areas designated by the Public Works Landscape Inspector at the preconstruction meeting, and sent to an approved soils laboratory for processing. The soils analysis report will be provided to the Public Works Landscape Inspector prior to any soil amending, or planting. The recommendations of the soils analysis will take precedence over the following:
- (C) Fertilizer shall be a commercial fertilizer consisting of the following percents by weight: (on Landscape Maintenance Districts and Capital Improvement projects a soils analysis is required and the results may modify the following– see # 2 above):
- 5 - Nitrogen
 - 3 - Phosphoric Acid
 - 1 - Potash

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

- 50 - Humus
 - 15 - Humic Acids
- (D) The following amendments shall be uniformly spread and thoroughly cultivated by means of mechanical tiller (wherever possible) into the top six (6) inches of soil. (The required soils analysis results for City Projects and LMD's may alter the following amendments – see # 2 above).
- (E) Application rate is per 1,000 square feet
- Nitrogen stabilized organic amendment - 4 Cu. Yd.
 - Commercial fertilizer - 2 lbs.
 - Agricultural gypsum - 100 lbs.
 - Soil sulfur - 2 lbs.
 - Elemental zinc – 2 lbs.
 - Iron sulfate - 2 lbs.
- (F) Container plants shall be backfilled with:
- 6 parts by volume on-site soil
 - 4 parts by volume organic amendment
 - 3 lbs. of commercial fertilizer per cubic yard of mix
- (G) A pre-emergent herbicide shall be applied in all appropriate planting areas after planting, as approved by a state licensed Pest Control Advisor. All pre-emergent applications shall be made in the presence of the City Public Works Landscape Inspector, or an authorized representative.
- (H) Planting tablets (21 gram tablet for trees and shrubs and 5 gram tablet for ground cover and 1 gallon plants) shall be placed in the top third of the excavated planting holes in the following quantities (unless the soils report indicates otherwise):
- 1 tablet per one gallon container
 - 2 tablets per five gallon container
 - 3 tablets per 15 gallon container
 - 8 tablets per 24" box
 - 12 tablets per 36" box
- (L) Staking and guying of trees shall be completed immediately upon planting.
- (M) Install arbor guard trunk protectors or approved equal at the base of all trees located in turf areas.
- (N) All trees shall be planted not less than: (place entire section on plan)
- Seven (7) feet from adjacent property lines;
 - Fifty (50) feet from the beginning of curb return on an exit side of curb return;

SECTION D: CITY PROJECTS AND LANDSCAPE MAINTENANCE DISTRICTS

- Twenty (20) feet from lamp standards;
- Ten (10) feet from fire hydrants and driveways;
- Five (5) feet from all sidewalks, service walks;
- Eight (8) feet away from water meters, sewer pipes, drain pipes, irrigation valves, and irrigation controllers;
- Under no circumstances should a tree be planted that will create an obvious line-of-sight traffic safety issue. The Contractor is responsible for notifying the private Landscape Architect of the issue, and the Architect is responsible for rectifying the situation. Plan changes shall be approved by the City Engineering Department before implementation;
- All trees in lawn areas require arbor guards;
- Install deep root barriers on all trees within five feet of the back of sidewalk, walls or curb, or as directed by the Public Works Landscape Inspector. All root barriers will be linear – no circling of roots – See detail LC-5 in Section L.

(38) Maintenance by developer/landscape contractor for City Capital Improvement Projects and Landscape Maintenance Districts:

- (A) After installation, the contractor shall schedule an inspection with the City Public Works Landscape Inspector (661-267-5346) to approve the installation.
- (B) After approval of the installation, the developer shall maintain the landscaping in a thriving condition for a period of one year, or as specified in the City Contract for Capital Improvement Projects, prior to acceptance of this work by the City. Failure to adequately maintain such work throughout the maintenance period shall result in the time extension of the developer's maintenance period.
- (C) For Landscape Maintenance Districts only, all utilities and other fees must be fully paid and proof of payment submitted to the City prior to acceptance and takeover by the City of Palmdale.
- (D) For Landscape Maintenance Districts and City Projects – the Contractor is to provide a current Los Angeles County Cross Connection backflow certification, and a current Maxicom Central Irrigation system certification before the City will accept the system. The Contractor will also provide the inspector with a copy of the completed 'Certificate of Compliance, Irrigation Schedule, Landscape and Irrigation Maintenance Schedule, Landscape Irrigation Audit Schedule, and the Irrigation Audit Report as required by Ordinance #1362 – Water Efficient Landscape.
- (E) Slope Erosion Control Standards – All projects must comply with the City of Palmdale Slope and Erosion Standards. See Section H for specific information required for all plans.

End of Section to be placed on Plan

SECTION E: COMMERCIAL PROJECTS

- (I) Release pressure to show pressure gauge drop at the end of the test.
- (3) Final inspection for Certificate of Occupancy:
- (A) Inspection will be for full conformance to approved plans.
 - (B) The Contractor will run the irrigation system from the controller to prove basic functionality.
 - (C) The Contractor will provide the City of Palmdale Engineering Office with a copy of the Certified Backflow test.
 - (D) The Contractor will provide the City of Palmdale Engineering Office with a copy of the completed 'Certificate of Compliance, Irrigation Schedule, Landscape and Irrigation Maintenance Schedule, Landscape Irrigation Audit Schedule, and the Irrigation Audit Report as required by Ordinance #1362 – Water Efficient Landscape.
- (4) Contractor shall make himself familiar with all underground utilities, pipes and structures. Contractor shall take sole responsibility for any cost incurred due to damage of said utilities. Prior to the commencement of work the contractor shall contact Underground Service Alert (800) 422-4133 for location of underground utilities.
- (5) Do not willfully proceed with construction as designed when it is obvious that unknown obstructions, area discrepancies and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the Public Works Inspector and the Developer. The contractor shall assume full responsibility for all necessary revisions due to failure to give such notification.
- (6) Temporary Erosion Control:
- (A) The surface of all slopes more than (3) feet in vertical height and steeper than 5:1 shall be covered with City of Palmdale approved erosion control blankets, North American S-150. Installation shall conform to manufacturer's specifications. Deviations from this requirement shall be submitted in writing with an alternate plan for temporary erosion control (water and dust). The City Engineer shall approve this plan.
 - (B) Installation of the erosion control blankets shall be installed to the satisfaction of the City Engineer's designated representative prior to the acceptance of rough grading.
- (7) Permanent Erosion Control:
- (A) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be covered with City of Palmdale approved erosion control blankets, North American S-150. No jute netting allowed. Installation shall conform to manufacturer's specifications.

SECTION E: COMMERCIAL PROJECTS

- (B) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be protected against damage by erosion by planting with ground cover plants. Slopes exceeding fifteen (15) feet in vertical height shall also be planted with trees spaced at no more than twenty (20) feet on center or shrubs spaced at no more than ten (10) feet on center or a combination of both to equal the intent. All plant material shall be triangularly spaced.
- (C) Slopes requiring permanent stabilization shall be provided with an approved system of irrigation.
- (D) All planting and irrigation shall be installed to the satisfaction of the City Engineer, or designated representative, prior to acceptance of final grading approval. Contact the Public Works Inspection Line at 661-267-5255 for inspection.
- (E) The Landscape Architect signing these plans is responsible for meeting all applicable Conditions of Approval pertaining to Landscape Architecture for this project, and for assuring the accuracy and adequacy of the work hereon. In the event of discrepancies arising during installation of landscape improvements, the Landscape Architect signing these plans shall be responsible for determining an acceptable solution, and revising the plans for review and approval by the City prior to installation of landscape improvements.
- (F) The Landscape Architect signing these plans has agreed to comply with the criteria and specifications of Ordinance #1362 – Water Efficient Landscape, and has applied them accordingly for the efficient use of water in the landscape design plan.

End of Section to be placed on Title Sheet

General Requirements for Irrigation System:

- (A) The design shall be prepared in such a way as to minimize the amount of supplemental water required. All plans will comply with Ordinance # 1362, Water Efficient Landscape.
- (B) Each sheet of the landscape design plan shall contain the following statement along with a licensed Landscape Architect's stamp and signature: " I have agreed to comply with the criteria and specifications of Ordinance # 1362 – Water Efficient Landscape, and I have applied them accordingly for the efficient use of water in the landscape design plan."
- (C) A water-conserving approach to landscape design can be implemented through a variety of techniques and practices including the use of appropriate plan material, the placement of plant material into compatible irrigation zones, irrigation techniques, irrigation products, irrigation management, evaporation control, etc. Such techniques shall be addressed in the above-mentioned concept

Irrigation:

- (1) The irrigation system shall be a fully automatic system. Irrigation plans shall indicate location and size of irrigation water meters, points of connection, backflow devices, valves, pumps, master valves, flow sensors, controllers, sprinklers, emitters, mainline and lateral line pipe. An irrigation legend shall provide the sizes and models of equipment specified.
- (2) The following shall be placed next to the irrigation legend on all plans:
 - Name of Water Purveyor with contact name and phone number:
 - Size of water meter and service line:
 - Static water pressure:
 - Design water pressure:
 - Designed highest gpm/gph flow
 - Worst-case pressure loss calculations – See detail I-35 in Section L for more information.
- (3) Installation book, sheet and how to incorporate City specifications shall be indicated whenever possible. Installation shall conform to the City approved irrigation details included in Section L.
- (4) The spray, rotor, bubbler and drip irrigation system shall be organized into zones based upon plant material selections and environmental considerations (i.e. sun exposure, slope aspect, soil conditions, etc.)
- (5) The selection of irrigation systems components shall be based upon the overall design and upon water conservation principles. A minimum of 25% of each landscape shall be irrigation with low volume systems. The designer shall indicate on the irrigation plan the proposed water management principles.
- (6) The irrigation system must provide complete coverage for all areas. On commercial and residential projects a minimum of head to head coverage is required due to the steady wind conditions of the High Desert.
- (7) No above ground UVR pipe to be specified on any projects within the City. All pipe to be buried with trenches compacted to adjacent grade.
- (8) Where above ground irrigation components (such as automatic controllers and backflow devices) are placed on slopes, low retaining walls and/or curbing shall be required to be installed at the location to prevent erosion.
- (9) Controllers for Commercial. Commercial projects will specify a commercial grade active ET/SMART controller listed at <http://www.irrigation.org>, which provides multiple programming options for hydrozone watering; cycle and soak programs, etc. The ET data will be active at the time of certificate of occupancy inspection is done.
- (10) Backflow Device. Commercial projects will utilize the current backflow type as specified by Los Angeles County Department of Cross Connection and

SECTION E: COMMERCIAL PROJECTS

Pollution Control for the hazard involved. The backflow will be insulated to R-11 and covered with an approved type of backflow enclosure. See Conditions of Approval for specific type of cover and whether a block wall is required. A Los Angeles County certified backflow tester will test and certify the backflow, and the results provided to the City of Palmdale Engineering Department Office before the project is released for occupancy. See detail I-7 located in Section L.

(11) PVC Pipe and Fittings

- (a) Pressure supply lines downstream of the backflow prevention device shall be Class 315 PVC in sizes 2" and larger and Schedule 40 PVC in sizes 1 - ½" and smaller. All PVC 6" or larger shall be gasketed with cast iron fittings. On commercial jobs class 200 pipe is acceptable for lateral lines.
- (b) All fittings shall be standard weight Schedule 40 PVC.
- (c) All threaded nipples shall be standard weight Schedule 80 with molded threads. Solvent cement joints shall be made as prescribed by the manufacturer. An aggressive primer shall be used in conjunction with solvent cement designed for the fit of the pipe and fittings of each size range specified.
- (d) Provide a minimum of 24" cover for all pressure lines.
- (e) Provide a minimum of 12" cover for all non-pressure lines.
- (f) Provide a minimum of 6" separation between lines. Parallel lines shall not be installed directly over one another. Installation of lines for other trades shall not be laid in irrigation trenches, but shall be installed in a separate trench. See detail I-14 located in Section L.
- (g) Concrete thrust blocks shall be installed on all pressure line changes of direction and pipes exceeding 2" in diameter. See detail I-37 located in Section L.

(12) Sprinkler Heads

- (a) All sprinklers are to be pop-up when near a walkway, or at the base of a slope.
- (b) Raised risers with spray head are allowed only in areas not adjacent to walkways or at the base of a slope, to prevent trip hazards.
- (c) 12" low angle pop-ups required for shrubs, and slope and erosion control planting. A 'u' nozzle is recommended for optimum coverage.
- (d) Head to head coverage is required.
- (e) Sprinklers located at the base of a slope or in areas with potential for low head run-off, will require a SAM-PRS feature, or check valve to prevent low area drainage run off.
- (f) Spray heads shall have a screw adjustment.

SECTION E: COMMERCIAL PROJECTS

- (g) Riser nipples for all sprinkler heads shall be the same size as the riser opening of the sprinkler body.
- (13) Bubblers
- (a) A pressure compensating tree bubbler system shall be installed to each tree as per detail I-8 located in Section L. All tree bubblers shall be installed on valves separate from the other planting.
 - (b) A pressure compensating bubbler shall be installed to each shrub unless the planter is irrigated with flat spray heads on 12" high pop-up sprinklers. See detail I-27 located in Section L
- (14) Drip Irrigation - Point Source Drip Irrigation Systems (Details I-32 thru I-34 located in Section L):
- (i) All drip irrigation systems using emitters or emission devices shall be installed with hard piped using pipe as specified in PVC pipe and fittings in this section. Polyethylene tubing on grade is not allowed.
 - (ii) All emitter bodies are to be constructed of ultraviolet and chemical resistant, non-corrosive material.
 - (iii) Emitters shall be pressure compensating and self-flushing. Emitters may be barbed or threaded depending on use and manufacturer.
 - (iv) One piece, multi-port manifold or single emission devices with built-in emitters shall be threaded, pressure compensating and self-flushing. These emitters are to be constructed of UV resistant and chemical resistant non-corrosive material.
 - (v) Low-flow/volume nozzles comparable and equal to drip applications may be submitted for approval. However such nozzles shall have threads adaptable to Pop-up bodies/nozzles and for installation on Schedule 80 risers. Microspray systems are not allowed.
 - (vi) Tubing if used from emitters, emission devices and manifolds to plant source shall be ¼" extruded polyethylene.
 - (i) All tubing extending from emitter, emission device or manifold shall be buried at a minimum 9" from final finish grade. Omit hard 90-degree turns and provide tubing to be installed in a sweeping manner to avoid kinks.
 - (ii) The tubing shall fit onto the outlet barbs of all emitters made by the same manufacturer.
 - (vii) Emitter assemblies may consist of the following:
 - (a) Barbed or threaded emitters may be installed on flexible risers with adapters to buried PVC Hard pipe.
 - (b) Emitters, manifolds and emission devices are to be installed on Schedule 80 Risers located inside emitter boxes.

SECTION E: COMMERCIAL PROJECTS

- (c) All fittings and adapters shall be of the same manufacturer as emitters that are specified.
 - (d) Manufacturer's stakes and bug caps shall be installed at ends at all points of discharge when tubing from emitters is used. Discharge shall be at the plant source in the watering basin as noted in City of Palmdale Standard Details.
 - (e) Filter screens for emitter system shall be of the type recommended by the manufacturer of the emitter, manifold or emission device.
- (15) In-line emitter tubing and subsurface emitter systems detail I-34 located in Section L:
- (a) In-line emitter tubing shall be constructed of UV resistant and chemical resistant non-corrosive material.
 - (b) Emitters shall be pressure compensating and self-flushing.
 - (c) Install flush valves at the ends in each direction of each valve system. If multiple directions of lateral terminate in various directions, then a flush valve is required at each end of lateral run. These flush valves are intended to be at the very low point of the system. Multiple flush valves may be required.
 - (d) Air relief valves shall be installed at an end of all systems in accordance with manufacturers recommendations. See detail I-15 located in Section L.
 - (e) All fittings and adapters shall be of the same manufacturer as emitters that are specified.
 - (f) Filter screens for each system shall be of the type recommended by the manufacturer of the drip line.
- (16) Valves – Gate valves, master valves, remote control valves,
- (a) Gate valves up to 3" shall be of brass construction designated for a minimum working pressure of not less than 150 psi or the maximum psi available on site, whichever is greater. Gates valves 4" or above shall be cast. If designing to site pressure, indicate the minimum psi available on the irrigation plan.
 - (b) If desired by the Landscape Architect, quick-coupling valves shall be installed on the mainline every 100 feet. Quick-coupling valves shall be of red brass with a wall thickness guaranteed to withstand normal working pressure of 150 psi without leakage. See detail I-5 located in Section L.
 - (c) Remote Control Valve: Must specify an automatic commercial grade valve – see Details I-3 and I-4 in Section L

SECTION E: COMMERCIAL PROJECTS

- (d) Master Valve: Must specify an automatic commercial grade valve to eliminate excess run off.
- (17) Drip Irrigation Valves, Regulators, Filters and related components:
- (a) Remote control valves shall have the capability of operating at a minimum of .2 gpm.
 - (b) All drip remote control valves shall be in-line buried valves. All in-line valves shall be installed in a valve box as shown on Detail I-28 in section L. Valves may be of other material such as plastic or brass.
 - (c) All drip systems shall have inline pressure regulators when friction loss calculations require pressure regulation for the emitters and related specified. Pressure regulation shall be required when the operating pressure exceeds the operating range of emitters, manifolds or emission devices downstream of the valve.
 - (d) All drip systems shall have filters. These filters shall be either a Wye type filter with 150 or 200 mesh screen or basket filters with 150 or 200 mesh screen. Numerous types of filters are available. The City of Palmdale encourages self-flushing or easy monitoring type of filters.
 - (e) Filter screens for emitter system shall be of the type recommended by the manufacturer of the emitter, manifold or emission device.
 - (f) Install flush valves at the ends in each direction of each valve system. If multiple directions of lateral terminate in various directions, then a flush valve is required at each end of lateral run. These flush valves are intended to be at the very low point of the system. Multiple flush valves may be required.
 - (g) Valve boxes for all gate valves and quick coupling valves shall be constructed of commercial grade materials, and be sized appropriately for the location. All will have bolt down lids. If located in a vehicle traffic zone, concrete boxes will be specified.
 - (h) All valve boxes will be branded with 2" letters on the top of the valve box with the letter of the POC and the valve number clearly legible.
 - (i) All valves will have Christy tags, or equivalent markers for each valve.
 - (j) All valves, quick couplers and utility boxes shall be installed a minimum of 8 feet away from all trees.
 - (k) Valve boxes for all electrical control valves shall be constructed of commercial quality materials appropriate for the location. They shall be a minimum of 12" by 18" in size, with a bolt-down lid. If located in an area where vehicle traffic might occur, a concrete box shall be

SECTION E: COMMERCIAL PROJECTS

specified. If a drip valve with strainer is specified, a jumbo box must be utilized.

(18) Wiring

- (a) Wire shall occupy the same trench and shall be installed along the same route as the pressure supply lines whenever possible, and placed under the main line. When more than one wire is placed in trench, the wiring shall be taped together at intervals of ten feet.
- (b) Wire connections shall be made using Scotch 3M DBY, DBR or equal. Size expansion loops of a minimum of twelve inches shall be provided at each wire connection and/or directional turn. Use one splice per connector sealing pack.
- (c) Sizing of wire shall be according to manufacturer's recommendations, but not smaller than 14 gauge in size.
- (d) Use continuous wire between remote control valves and the controller/timer. All wire of exposed runs to be in conduit.

(19) Detention/Retention Basins

- (a) All landscaping at or within the basins shall be on valves separate from the streetscape landscaping.
- (b) All trees at or within the basins shall be irrigation with tree bubblers (two per tree) on valves separate from the rest of the system. See tree bubbler detail Section L.
- (c) Rotor sprays are recommended for large areas; impact heads are not allowed.
- (d) No sprinklers shall be installed at the toe of the slope or in the bottom of the basin. Start the sprinkler lateral lines at least 3 feet up from the bottom of the basin and provide head to head coverage for basins.
- (e) To prevent erosion, irrigation nearest the toe of the slope will be on a separate valve and the scheduled irrigation run time should be 1/3 that of the top of slope.
- (f) All commercial and private basins require head to head irrigation coverage.

(20) Irrigation Notes (to be placed on the irrigation plan):

- (a) The contractor shall obtain and pay for any and all permits and all inspections required, including, but not limited to:
 - (i) City of Palmdale Landscape Permit through Engineering Department;
 - (ii) Backflow certification testing by a LA County Health Department Cross Connection Control certified tester and copy of test results provided to the City of Palmdale

SECTION E: COMMERCIAL PROJECTS

Engineering Office before Certificate of Occupancy will be granted.

- (iii) Certified Irrigation Auditor inspection and certification of the entire irrigation system per the requirements of Ordinance # 1362 – Water Efficient Landscape.
 - (b) The manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of articles used in this installation furnishes directions concerning points not shown in the drawings and specifications.
 - (c) Landscape Contractor to provide as-built irrigation plans and controller charts to owner of the project.
 - (d) The irrigation system shall be flushed prior to installation of irrigation heads.
 - (e) The irrigation trenches shall be only center loaded with all joints exposed & separation of lines exposed until all required tests are performed.
- (21) Field Quality Control and adjustment of the system
- (a) Mainline test: Irrigation mainline inspection and pressure test. Contractor to perform hydrostatic pressure test in the presence of the City Public Works Inspector and 'Certified Landscape Irrigation Auditor'. No remote control valves need to be installed on the line for the pressure test.
 - (i) Provide a blow out valve set up to remove excess air from the line before the test is started.
 - (ii) Utilizing a hydrostatic pressure pump, raise pressure to 150 psi, and hold steady with no leaks for 2 hours.
 - (iii) Release pressure to show pressure gauge drop at the end of the test.
 - (iv) Prior to backfilling, have the Licensed Landscape Architect and Certified Irrigation Auditor conduct a preliminary field observation of the irrigation system;
 - (b) The Contractor shall flush and adjust all irrigation emission devices for optimum performance and to prevent over spray onto walks, roadways, and buildings as much as possible.
 - (c) If it is determined that minor adjustments in the irrigation equipment will provide proper and more adequate coverage, the Contractor shall make such adjustments prior to planting. Adjustments may also include changes in sizes and degrees of arc as required. Any alteration to the hydraulics of the irrigation system must be approved by the Landscape Architect of Record and approved by the City before any changes are made. Minor sprinkler

SECTION E: COMMERCIAL PROJECTS

adjustments are not the same as altering the hydraulics by adding sprinklers, or eliminating or adding valves.

- (d) Lowering or raising of sprinkler heads by the Contractor shall be accomplished within 10 days after notification by the City through a written notice provided by the Public Works Inspector.
- (e) All sprinkler heads and emitters shall be set perpendicular to finished grades unless otherwise designated on the plans.
- (f) All PVC pipe and fittings will be handled with care to prevent cracking or splitting, and shall not be stored in the sun. No sun-damaged pipe is to be used. All sun-damaged pipe will be removed and replaced immediately when the Public Works Inspector provides written notice.
- (g) Upon project installation, have a licensed Landscape Architect or licensed Landscape Contractor and a 'Certified Water Auditor' conduct a final field observation for the approval of the installation.
- (h) The Contractor will provide the City of Palmdale Engineering Office with a copy of the completed 'Certificate of Compliance', Irrigation Schedule, Landscape and Irrigation Maintenance Schedule, Landscape Irrigation Audit Schedule, and the Irrigation Audit Report as required by Ordinance 1362 – Water Efficient Landscape.
- (i) This must be completed, reviewed and approved before the inspector releases the property for Certificate of Occupancy.

End of section to be placed on plan

(22) Plant Material General Requirements

- (a) The planting design shall be based upon the principles of water conservation: groupings of plant material based upon like water requirements, ecological requirements, climatic conditions, selection of drought tolerant plant material, etc.
- (b) All plants shall be selected from the City of Palmdale Recommended Plant List available in Section J. Requests for deviations from this list should be submitted in writing with information provided on the selected material, including growth habit, diseases and pests, root patterns, general characteristics, drought tolerance and compatibility with Sunset Zone 11 climate (High Desert). If deviation is approved, an asterisk must be placed on the plan legend acknowledging the plant material is not on the City of Palmdale approved plant list.
- (c) No turf grass is allowed within commercial areas.
- (d) The plans shall indicate the total square footage of area that is landscaped.

SECTION E: COMMERCIAL PROJECTS

- (e) Planting plans shall have a plant legend with symbols indicating the genus and species, quantities and sizes of all plant material. Symbols representing the plant material will show the plant material at 75% of maturity.
- (f) Trees will meet the sizing requirements as listed in the Conditions of Approval. No tree shall be smaller than 15 gallon. Trees shall be chosen from the City of Palmdale Approved Tree lists located in Section J. Requests for deviations from the list should be submitted in writing with information provided on the selected material including growth habit, disease and pests, root patterns, general characteristics, drought tolerance and compatibility with Sunset Zone 11 climate (High Desert). If approved, an asterisk must be placed on the plan legend with the notation that the tree is not listed on the City of Palmdale approved tree list.
- (g) The quantity and species of trees shall require approval from the City Engineer or designated representative.
- (h) Planting details and specifications shall also be provided – See details provided in Section L. Planting details shall encompass the specifications provided herein and conform to the American Public Works Association Standard Plans. All specifications provided herein shall take precedence over the standard plans where discrepancies exist.
- (i) Plans should be designed with the following criteria – place the following tree location specifications on the plans:
- (j) All trees shall be planted not less than:
 - Seven (7) feet from adjacent property lines;
 - Fifty (50) feet from the beginning of curb return on an exit side of curb return;
 - Twenty (20) feet from lamp standards;
 - Ten (10) feet from fire hydrants and driveways;
 - Five (5) feet from all sidewalks, service walks;
 - Eight (8) feet away from water meters, sewer pipes, drain pipes, irrigation valves, and irrigation controllers;
 - Front yard trees will be placed at fifteen (15) feet behind the face of curb, out of the public right of way;
 - All corner residential lots require two (2) City street trees to be planted in the center of the 12-foot right of way parkway planting area. If a wall is located on the property line, these trees will require linear root barriers on both sides of the tree;
 - Under no circumstances should a tree be planted that will create an obvious line-of sight traffic safety issue. The Contractor is responsible for notifying the private Landscape Architect of the

SECTION E: COMMERCIAL PROJECTS

issue, and the Architect is responsible for rectifying the situation. The City, before implementation, shall approve plan changes.

- Install deep root barriers on all trees within five feet of the back of sidewalk, walls or curb, or as directed by the Public Works Landscape Inspector. All root barriers will be linear – no circling of roots – See detail LC-5 in Section L.

- (k) Shrubs shall be a minimum of five (5) gallon size, or as defined in the Conditions of Approval. Shrubs species will be chosen from the City of Palmdale Approved Plant List – see Section J. Deviations from this requirement shall be submitted in writing and shall be based upon species, site conditions, climatic conditions etc. If approved, an asterisk must be placed next to the plant legend with the remark that the plant is not on the City of Palmdale approved plant list.
- (l) Commercial projects will utilize concrete mow strips to separate shrub beds and turf, or as listed in the project's Conditions of Approval.
- (m) Ground cover shall be prostrate shrubs or flatted ground cover, or a combination of both. Spacing for ground cover shall be 12" O.C. for flatted ground cover. Spacing for prostrate shrubs shall be dependent upon species characteristics.
- (n) A mulch (organic or inorganic) can be substituted for ground cover in certain design situations. Approval by the City Engineer or his designated representative is required. The use of bark mulch is highly discouraged with the use of stabilized decomposed granite, and rock and cobble encouraged. A porous weed fabric is to be placed beneath all mulch except stabilized decomposed granite.
- (o) Vines shall be a minimum of five (5) gallon size.

(23) Related Landscaping Material

- (a) Organic soil amendment shall be Type 1 as described in the Standard Specifications for Public Works Construction. Mulch shall comply with the same requirements.
- (b) Planting tablets for trees and shrubs shall be 21-gram Agriform 20-15-5 two-year timed release or approved equal. If one-gallon ground cover plants are used then a 5-gram tablet shall be used.
- (c) Guying and staking materials shall be as follows:
 - (i) Wood tree stakes shall be lodge pole pine, fully treated with an approved wood preservative, 2" (minimum nominal size) diameter.
 - (ii) Wood tree stakes shall be 12 feet long for 24" box trees and 10 feet long for 15 gallon trees;
 - (iii) Tree ties shall be cinch ties – 4 per tree;

SECTION E: COMMERCIAL PROJECTS

- (iv) Guying Hardware: See Details P-3 and P-4 in Section L
 - (v) Guy Wire: Zinc-coated # 10 steel wire guy, minimum 3 foot
 - (vi) ½" 2-Ply Hose cover wire loop
 - (vii) Turnbuckles: galvanized or dip painted, size as required
 - (viii) Safety sleeve: ½" white PVC full length of wire
 - (ix) "Maxwell" or equal tree anchors with 4" minimum cover
- (d) Mulch shall be 65/35 mix, or an approved equal if bark mulch is specified; however the use of bark mulch is highly discouraged. The use of stabilized decomposed granite, rock or cobble is highly encouraged. A porous weed fabric will be placed beneath all mulched areas except the stabilized decomposed granite.
- (e) Erosion control matting shall be as specified in the standards for slope planting – See Section H.
- (f) Root barriers shall be 24" Universal Root Barrier by Deep Root Corporation, or an approved equal. All root barriers will be installed on a linear basis, no root circling, and must extend a minimum of five (5) feet in each direction from the center of the tree. See detail LC-5 located in Section L.
- (g) Arbor Guards shall be installed on trees in turf areas immediately after planting and staking.
- (24) Fine Grading and Header
- (a) All slopes steeper than 5:1 shall be installed per the City's Standards for Slope Landscaping. See Section H.
 - (b) Final grade shall insure positive drainage of the site. Drainage in planting areas is to be smooth and uniform with a minimum gradient of 2%.
 - (c) A minimum of eighteen (18) inches of level planting area shall be provided at the toe of all slopes. If possible, a 3-foot flat area on the top of the slope is requested.
 - (d) 6" concrete headers shall be installed at all limits of work not already defined by walls, curbing, sidewalks, etc. as listed in the Conditions of Approval.
- (25) Tree, Shrub and Vine Planting
- (a) The results of the agronomic soils test will be followed. If no specific recommendations are made the following shall be utilized:
 - (b) All excavated holes shall be twice the diameter and one and one half (1-1/2) the depth of the root ball.
 - (c) Container plants shall be backfilled with (unless the soils analysis specifies otherwise:
 - 6 parts by volume on-site soil

SECTION E: COMMERCIAL PROJECTS

- 4 parts by volume organic amendments
 - 3 lbs. of commercial fertilizer per cubic yard of mix
- (d) Planting tablets shall be placed in the upper third of the excavated planting holes in the following quantities:
- 1 tablet per one gallon container
 - 2 tablets per five gallon container
 - 3 tablets per 15 gallon container
 - 8 tablets per 24" box
 - 12 tablets per 36" box
- (e) An earthen basin shall be constructed around each plant, two (2") inches for shrubs, four (4") inches for trees at the base of the plant pit, not root ball.
- (f) Vines shall be removed from nursery stakes and securely attached to walls or fencing. See detail Section L.
- (26) Staking and Guying:
- (a) All 15 gallon and 24" box size trees shall be staked with two (2) tree stakes placed perpendicular to the prevailing winds. See details P-1 through P-4 located in Section L.
- (b) The tree stakes shall not penetrate the root ball. Tree stakes will be spaced far enough from the tree so branches do not come into contact with stakes under normal movement.
- (c) All 36" box size and larger trees shall be guyed. In small areas where guying is impractical, three (3) 2" galvanized poles will be utilized for stakes. See detail P-4 located in Section L.
- (27) Miscellaneous Planting Requirements
- Install deep root barriers on all trees planted within five (5) feet of sidewalk, curb, or walls, or as directed by the Public Works Inspector. Root barriers to be linear only and should never encircle the roots of the tree. See detail LC-5 located in Section L.
- (28) Detention/Retention Basins
- Landscape and irrigation plans are required for all basins, unless exempted by Conditions of Approval, or the City Engineer. See Section H for further specifications.
- (29) Planting Notes (to be added to the planting plans):
- (a) Deliver all plant material with legible identification tags.
- (b) An agronomic analysis will be performed to determine the needs of the soil; the results shall take precedence over the following:
- (c) Fertilizer shall be a commercial fertilizer consisting of the following percents by weight:

SECTION E: COMMERCIAL PROJECTS

- 5 - Nitrogen
 - 3 - Phosphoric Acid
 - 1 - Potash
 - 50 - Humus
 - 15 - Humic Acids
- (d) The following amendments shall be uniformly spread and thoroughly cultivated by means of mechanical filler (wherever possible) into the top six (6) inches of soil. (The soils analysis results may alter the following amendments – see # 2 above).
- (e) Application rate is per 1,000 square feet
- Nitrogen stabilized organic amendment - 4 cu. Yd.
 - Commercial fertilizer - 2 lbs.
 - Agricultural gypsum - 100 lbs.
 - Soil sulfur - 2 lbs.
 - Elemental zinc – 2 lbs.
 - Iron sulfate - 2 lbs.
- (f) Container plants shall be backfilled with:
- 6 parts by volume on-site soil
 - 4 parts by volume organic amendment
 - 3 lbs. of commercial fertilizer per cubic yard of mix
- (g) Planting tablets (21 gram tablet for trees and shrubs and 5 gram tablet for ground cover and 1 gallon plants) shall be placed in the top third of the excavated planting holes in the following quantities:
- 1 tablet per one gallon container
 - 2 tablets per five gallon container
 - 3 tablets per 15 gallon container
 - 8 tablets per 24" box
 - 12 tablets per 36" box
- (h) Staking and guying of trees shall be completed immediately upon planting.
- (i) Install arbor guard trunk protectors at the base of all trees located in turf areas.
- (k) All trees shall be planted not less than:
- Seven (7) feet from adjacent property lines;
 - Fifty (50) feet from the beginning of curb return on an exit side of curb return;
 - Twenty (20) feet from lamp standards;
 - Ten (10) feet from fire hydrants and driveways;
 - Five (5) feet from all sidewalks, service walks;
 - Eight (8) feet away from water meters, sewer pipes, drain pipes, irrigation valves, and irrigation controllers;

SECTION E: COMMERCIAL PROJECTS

- Front yard trees will be placed at fifteen (15) feet behind the face of curb, out of the public right of way;
- All corner residential lots require two (2) City street trees to be planted in the center of the 12-foot right of way parkway planting area. If a wall is located on the property line, these trees will require linear root barriers on both sides of the tree;
- Under no circumstances should a tree be planted that will create an obvious line-of sight traffic safety issue. The Contractor is responsible for notifying the private Landscape Architect of the issue, and the Architect is responsible for rectifying the situation. The City, before implementation, shall approve plan changes
- Install deep root barriers on all trees within five feet of the back of sidewalk, walls or curb, or as directed by the Public Works Inspector. All root barriers will be linear – no circling of roots – see detail LC-5 located in Section L.

SECTION F: Home Owners Association – Private Landscaping

- (1) This section is for private landscaping that will never be the responsibility of the City of Palmdale to maintain. Any areas that could possibly be taken over by the City will be required to form an underlying Landscape Maintenance District; and all plans would be designed, bonded and installed per Landscape Maintenance District Standards listed in Section D.
- (2) General Plan preparation and submittal requirements for all plans are addressed in Sections A, B, C. Two (2) copies of plans are to be submitted to the Engineering Department with other required items as listed in Section B.
- (3) General Notes to be added to the title sheet – See Section M for sample title sheet:
 - (A) All work shall be performed by a California Licensed Contractor holding a current C-27 license (Landscaping) or, under the appropriate circumstances, a current General “A” or “B” license, and maintaining a valid City of Palmdale Business License.
 - (B) The Contractor shall obtain a Landscape Permit from the Engineering Department prior to commencement of work.
 - (C) All work shall conform to Standard Specifications for Public Works Construction (SSPWC), latest edition, (published by Building News, 3055 Overland Avenue, Los Angeles, CA) for all work performed and not specifically mentioned herein. All work shall be done in accordance with the plans, specifications, and any special requirements of the permit. Any violation will result in the stoppage of all work until the violation is corrected.
 - (D) No work shall commence on any project until a pre-construction conference has been held with the appropriate City Inspection Department as listed below.
 - (E) The Contractor shall be responsible for notifying the Engineering Department for all required site visits at 661-267-5255. The Public Works Inspector will verify the static water pressure during the pre-construction conference. The Landscape Contractor will install a pressure gauge on the project water meter/s in order to do so.

▪ Pre-construction conference	7 days Notice
▪ Irrigation mainline test	24 hours
▪ Certificate of Occupancy	24 hours

Irrigation mainline inspection and pressure test. Contractor to perform hydrostatic pressure test in the presence of the City Public Works Inspector, and a ‘Certified Irrigation Auditor’. No remote control valves need to be installed on the line for the pressure test.

 - Provide a blow out valve set up to remove excess air from the line before test is started.

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- Utilizing a hydrostatic pressure pump, raise pressure to 150 psi, and hold steady with no leaks for two (2) hours.
 - Release pressure to show pressure gauge drop at the end of the test.
- (G) Final Inspection for Certificate of Occupancy:
- (i) Inspection will be for full conformance to approved plans.
 - (ii) The Contractor will run the irrigation system from the controller to prove basic functionality.
 - (iii) The Contractor will provide the City of Palmdale Engineering Office with a copy of the Certified Backflow test.
 - (iv) The Contractor will provide the City of Palmdale Engineering Office with a copy of the completed 'Certificate of Compliance, Irrigation Schedule, Landscape and Irrigation Maintenance Schedule, Landscape Irrigation Audit Schedule, and the Irrigation Audit Report as required by Ordinance 1362 – Water Efficient Landscape.
- (H) Contractor shall make himself/herself familiar with all underground utilities, pipes and structures. Contractor shall take sole responsibility for any cost incurred due to damage of said utilities. Prior to the commencement of work the contractor shall contact Underground Service Alert (800) 422-4133 for location of underground utilities.
- (I) Do not willfully proceed with construction as designed when it is obvious that unknown obstructions, area discrepancies and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the Public Works Inspector and the Developer. The contractor shall assume full responsibility for all necessary revisions due to failure to give such notification.
- (J) Temporary Erosion Control
- (i) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be covered with City of Palmdale approved erosion control blankets, North American S150. No jute netting is allowed. Installation shall conform to manufacturer's specifications. Deviations from this requirement shall be submitted in writing with an alternate plan for temporary erosion control (water and dust). The City Engineer shall approve this plan.
 - (ii) Installation of the erosion control blankets shall be installed to the satisfaction of the City Engineer prior to the acceptance of rough grading.
- (K) Permanent Erosion Control

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- (i) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be covered with City of Palmdale approved erosion control blankets. Installation shall conform to manufacturer's specifications.
- (ii) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be protected against damage from erosion by planting with ground cover plants. Slopes exceeding fifteen (15) feet in vertical height shall also be planted with trees spaced at no more than twenty (20) feet on center or shrubs spaced at no more than ten (10) feet on center or a combination of both to equal the intent. All plant material shall be triangularly spaced.
- (iii) Slopes requiring permanent stabilization shall be provided with an approved system of irrigation.
- (iv) All planting and irrigation shall be installed to the satisfaction of the City Engineer, or designated representative, prior to acceptance of final grading. Contact the Public Works Inspection Line at 661-267-5255 for inspection.
- (v) The Landscape Architect signing these plans is responsible for meeting all applicable Conditions of Approval pertaining to Landscape Architecture for this project; and for assuring the accuracy and adequacy of the work hereon. In the event of discrepancies arising during installation of landscape improvements, the Landscape Architect signing these plans shall be responsible for determining an acceptable solution; and revising the plans for review and approval by the City prior to installation of landscape improvements.
- (vi) The Landscape Architect signing these plans has agreed to comply with the criteria and specifications of Ordinance # 1362 – Water Efficient Landscape, and has applied them accordingly for the efficient use of water in the landscape design plan.

End of Section to be placed on plan.

(4) General Requirements for Irrigation System:

- (A) The design shall be prepared in such a way as to minimize the amount of supplemental water required. All plans will comply with Ordinance # 1362, Water Efficient Landscape.
- (B) Each sheet of the landscape design plan shall contain the following statement, along with a licensed Landscape Architect's stamp and signature: " I have agreed to comply with the criteria and specifications of Ordinance # 1362 - Water Efficient Landscape, and I have applied them accordingly for the efficient use of water in the landscape design plan."

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- (C) A water-conserving approach to landscape design can be implemented through a variety of techniques and practices including the use of appropriate plan material, the placement of plant material into compatible irrigation zones, irrigation techniques, irrigation products, irrigation management, evaporation control, etc. Such techniques shall be addressed in the above-mentioned concept
- (D) The irrigation system shall be a fully automatic system. Irrigation plans shall indicate location and size of irrigation water meters, points of connection, backflow devices, valves, pumps, master valves, flow sensors, controllers, sprinklers, emitters, mainline and lateral line pipe. An irrigation legend shall provide the sizes and models of equipment specified.
- (E) The following shall be placed next to the irrigation legend on all plans:
- Name of Water Purveyor with contact name and phone number:
 - Size of Water meter and service line:
 - Static Water Pressure:
 - Design Water Pressure:
 - Designed highest gpm/gph flow
 - Worst-case pressure loss calculations – See detail I-35 in Section L for further information.
- (F) Installation book, sheet and how to incorporate City specifications shall be indicated whenever possible. Installation shall conform to the City approved irrigation details included in Section L.
- (G) The spray, rotor, bubbler and drip irrigation system shall be organized into zones based upon plant material selections and environmental considerations (i.e. sun exposure, slope aspect, soil conditions, etc.)
- (H) The selection of irrigation system components shall be based upon the overall design and upon water conservation principles. A minimum of 25% of each landscape shall be irrigation with low volume systems. The designer shall indicate on the irrigation plan the proposed water management principles.
- (I) The irrigation system must provide complete coverage for all areas. On commercial and residential projects a minimum of head to head coverage is required due to the steady wind conditions of the High Desert.
- (J) No above ground UVR pipe is to be specified on any projects within the City. All pipe is to be buried with trenches compacted to adjacent grade.
- (K) Where above ground irrigation components (such as automatic controllers and backflow devices) are placed on slopes, low retaining walls and/or curbing shall be required to be installed at the location to prevent erosion.

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- (L) Controllers for HOA. Home Owners Association projects will specify a commercial grade active ET/SMART controller (on the approved list located at <http://www.irrigation.org>), which provides multiple programming options for hydrozone watering; cycle and soak programs, etc. ET data will be active at the time of Certificate of Occupancy inspection.
- (M) Backflow Device. HOA projects will utilize the current backflow type as specified by Los Angeles County Department of Cross Connection and Pollution Control for the hazard involved. The backflow will be insulated to R-11 and covered with an approved type of backflow enclosure. See the Conditions of Approval for specific type of cover and whether a block wall is required. A Los Angeles County certified backflow tester will test and certify the backflow, and the results are to be provided to the City Public Works Inspector before the project is released for occupancy. See detail I-7 located in Section L.
- (N) PVC Pipe and Fittings
 - (i) Pressure supply lines downstream of the backflow prevention device shall be Class 315 PVC in sizes 2" and larger and Schedule 40 PVC in sizes 1 - ½" and smaller. All PVC 6" or larger shall be gasketed with cast iron fittings. On HOA projects class 200 pipe is acceptable for lateral lines.
 - (ii) All fittings shall be standard weight Schedule 40 PVC.
 - (iii) All threaded nipples shall be standard weight Schedule 80 with molded threads. Solvent cement joints shall be made as prescribed by the manufacturer. An aggressive primer shall be used in conjunction with solvent cement designed for the fit of the pipe and fittings of each size range specified.
 - (iv) Provide a minimum 24" of cover for all pressure lines.
 - (v) Provide a minimum 12" of cover for all non-pressure lines.
 - (vi) Provide a minimum 6" of separation between lines. Parallel lines shall not be installed directly over one another. Installation of lines for other trades shall not be laid in irrigation trenches, but shall be installed in a separate trench. See detail I-14 located in Section L.
 - (vii) Concrete thrust blocks shall be installed on all pressure line changes of direction and pipes exceeding 2" in diameter. See detail I-37 located in Section L.
- (O) Sprinkler Heads
 - (i) All sprinklers are to be pop-up when near a walkway, or at the base of a slope. See details I-10 through I-13 located in Section L.

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- (ii) Raised risers with a spray head are allowed only in areas not adjacent to walkways or at the base of a slope, to prevent trip hazards.
- (iii) 12" low angle pop-ups are required for shrubs, and slope and erosion control planting. A 'u' nozzle is recommended for optimum coverage.
- (iv) Head to head coverage is required.
- (v) Sprinklers located at the base of a slope or in areas with potential for low head run-off, will require a SAM-PRS feature, or check valve to prevent low area drainage run off.
- (vi) Spray heads shall have a screw adjustment.
- (vii) Riser nipples for all sprinkler heads shall be the same size as the riser opening of the sprinkler body.

(P) Bubblers

- (i) A pressure-compensating tree bubbler system shall be installed to each tree as per detail I-8 located in Section L. All tree bubblers shall be installed on valves separate from the other planting.
- (ii) A pressure-compensating bubbler shall be installed to each shrub unless the planter shall be irrigated with flat spray heads on 12" high pop-up sprinklers. See detail I-27 located in Section L.

(Q) Drip Irrigation - Point Source Drip Irrigation Systems (Details I-32 thru I-34 located in Section L):

- (i) All drip irrigation systems using emitters or emission devices shall be installed with hard piped using pipe as specified in PVC pipe and fittings in this section. Polyethylene tubing on grade is not allowed.
- (ii) All emitter bodies are to be constructed of ultraviolet and chemical resistant, non-corrosive material.
- (iii) Emitters shall be pressure compensating and self-flushing. Emitters may be barbed or threaded depending on use and manufacturer.
- (iv) One piece, multi-port manifold or single emission devices with built-in emitters shall be threaded, pressure compensating and self-flushing. These emitters are to be constructed of UV resistant and chemical resistant non-corrosive material.
- (v) Low-flow/volume nozzles comparable and equal to drip applications may be submitted for approval. However such nozzles shall have threads adaptable to Pop-up bodies/nozzles and for installation on Schedule 80 risers. Microspray systems are not allowed.

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- (vi) Tubing if used from emitters, emission devices and manifolds to plant source shall be ¼” extruded polyethylene.
 - (a) All tubing extending from emitter, emission device or manifold shall be buried at a minimum 9” from final finish grade. Omit hard 90-degree turns and provide tubing to be installed in a sweeping manner to avoid kinks.
 - (b) The tubing shall fit onto the outlet barbs of all emitters made by the same manufacturer.
- (vii) Emitter assemblies may consist of the following:
 - (a) Barbed or threaded emitters may be installed on flexible risers with adapters to buried PVC Hard pipe.
 - (b) Emitters, manifolds and emission devices are to be installed on Schedule 80 Risers located inside emitter boxes.
 - (c) All fittings and adapters shall be of the same manufacturer as emitters that are specified.
 - (d) Manufacturer’s stakes and bug caps shall be installed at ends at all points of discharge when tubing from emitters is used. Discharge shall be at the plant source in the watering basin as noted in City of Palmdale Standard Details.
 - (e) Filter screens for emitter system shall be of the type recommended by the manufacturer of the emitter, manifold or emission device.
- (viii) In-line emitter tubing and subsurface emitter systems detail I-34 located in Section L:
 - (a) In-line emitter tubing shall be constructed of UV resistant and chemical resistant non-corrosive material.
 - (b) Emitters shall be pressure compensating and self-flushing.
 - (c) Install flush valves at the ends in each direction of each valve system. If multiple directions of lateral terminate in various directions, then a flush valve is required at each end of lateral run. These flush valves are intended to be at the very low point of the system. Multiple flush valves may be required.
 - (d) Air relief valves shall be installed at an end of all systems in accordance with manufacturers

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

recommendations. See detail I-15 located in Section L.

(e) All fittings and adapters shall be of the same manufacturer as emitters that are specified.

(f) Filter screens for each system shall be of the type recommended by the manufacturer of the drip line.

(R) Valves - Master valves, remote control valves, commercial, drip, flush valves, ball valves.

(i) Gate valves up to 3" shall be of brass construction designated for a minimum working pressure of not less than 150 psi or the maximum psi available on site, whichever is greater. Gate valves of 4" or above shall be cast. If designing to site pressure, indicate the minimum psi available on the irrigation plan.

(ii) Quick-coupling valves shall be installed on the mainline. Quick-coupling valves shall be of red brass with a wall thickness guaranteed to withstand normal working pressure of 150 psi without leakage. See detail I-5 located in Section L.

(iii) Remote Control Valve: Must specify an automatic commercial grade valve. See details I-3 and I-4 located in Section L.

(iv) Master Valve: Must specify an automatic commercial grade valve to eliminate excess run off. See detail I-23 located in Section L.

(S) Drip Irrigation Valves, Regulators, Filters and related components:

(i) Remote control valves shall have the capability of operating at a minimum of .2 gpm.

(ii) All drip remote control valves shall be in-line buried valves. All in-line valves shall be installed in a valve box as delineated in detail I-31 located in Section L. Valves may be of other material such as plastic or brass.

(iii) All drip systems shall have inline pressure regulators when friction loss calculations require pressure regulation for the emitters and related items specified. Pressure regulation shall be required when the operating pressure exceeds the operating range of emitters, manifolds or emission devices downstream of the valve.

(iv) All drip systems shall have filters. These filters shall be either a Wye type filter with 150 or 200 mesh screen or basket filters with 150 or 200 mesh screen. Numerous types of filters are available. The City of Palmdale encourages self-flushing or easy monitoring types of filters.

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- (v) Filter screens for emitter systems shall be of the type recommended by the manufacturer of the emitter, manifold or emission device.
- (vi) Install flush valves at the ends in each direction of each valve system. If multiple directions of lateral terminate in various directions, then a flush valve is required at each end of lateral run. These flush valves are intended to be at the very low point of the system. Multiple flush valves may be required.
- (vii) Valve boxes for all gate valves and quick coupling valves shall be constructed of commercial grade materials, and be sized appropriately for the location. All shall have bolt down lids. If located in a vehicle traffic zone, concrete boxes will be specified.
- (viii) All valve boxes will be branded with 2" letters on the top of the valve box with the letter of the POC and the valve number clearly legible.
- (ix) All valves will have Christy tags, or equivalent markers for each valve.
- (x) All valves, quick couplers and utility boxes shall be installed a minimum of 8 feet away from all trees.
- (xi) Valve boxes for all electrical control valves shall be constructed of commercial quality materials appropriate for the location. They shall be a minimum of 12" by 18" in size, with a bolt-down lid. If located in an area where vehicle traffic might occur, a concrete box shall be specified. If a drip valve with strainer is specified, a jumbo box must be utilized.

(T) Wiring

- (i) Wire shall occupy the same trench and shall be installed along the same route as the pressure supply lines whenever possible, and placed under the main lines. When more than one wire is placed in a trench, the wiring shall be taped together at intervals of ten feet.
- (ii) Wire connections shall be made using Scotch 3M DBY, DBR or equal. Size expansion loops of a minimum of twelve inches shall be provided at each wire connection and/or directional turn. Use one splice per connector sealing pack.
- (iii) Sizing of wire shall be according to manufacturer's recommendations, but not smaller than 14 gauge in size.
- (iv) Use continuous wire between remote control valves and the controller/timer. All wire of exposed runs are to be in conduit.

(U) Detention/Retention Basins

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- (i) All landscaping at or within the basins shall be on valves separate from the streetscape landscaping.
 - (ii) All trees at or within the basins shall be irrigated with tree bubblers (two per tree) on valves separate from the rest of the system. See tree bubbler detail I-8 located in Section L.
 - (iii) Rotor sprays are recommended for large areas; impact heads are not allowed.
 - (iv) No sprinklers shall be installed at the toe of the slope or in the bottom of the basin. Start the sprinkler lateral lines at least 3 feet up from the bottom of the basin and provide head to head coverage for basins.
 - (v) To prevent erosion, irrigation nearest the toe of the slope will be on a separate valve and the scheduled irrigation run time should be 1/3 that of the top of the slope.
 - (vi) All commercial and private basins require head to head irrigation coverage.
- (V) Irrigation Notes (to be placed on the irrigation plan):
- (i) The contractor shall obtain and pay for any and all permits and all inspections required, including, but not limited to:
 - City of Palmdale Landscape Permit through Engineering Department;
 - Backflow certification testing by a LA County certified backflow tester and copy of test results provided to the City Engineering Office before Certificate of Occupancy will be granted.
 - Certified Irrigation Auditor inspection and certification of the entire irrigation system per the requirements of Ordinance # 1362 – Water Efficient Landscape.
 - (ii) The manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of articles used in this installation furnishes directions concerning points not shown in the drawings and specifications.
 - (iii) Landscape Contractor to provide as-built irrigation plans and controller charts to owner of the project.
 - (iv) The irrigation system shall be flushed prior to installation of irrigation heads.
 - (v) The irrigation trenches shall be only center loaded with all joints exposed & separation of lines exposed until all required tests are performed.
- (W) Field Quality Control and adjustment of the system

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- (i) Mainline test: Irrigation mainline inspection and pressure test. Contractor to perform hydrostatic pressure test in the presence of the City Public Works Inspector and 'Certified Landscape Irrigation Auditor'. No remote control valves need to be installed on the line for the pressure test.
- Provide a blow out valve set up to remove excess air from the line before the test is started.
 - Utilizing a hydrostatic pressure pump, raise pressure to 150 psi, and hold steady with no leaks for 2 hours.
 - Release pressure to show pressure gauge drop at the end of the test.
 - Prior to backfilling, have a licensed landscape architect, certified irrigation auditor, or licensed landscape contractor conduct a preliminary field observation of the irrigation system.
- (ii) The Contractor shall flush and adjust all irrigation emission devices for optimum performance and to prevent over spray onto walks, roadways, and buildings as much as possible.
- (iii) If it is determined that minor adjustments in the irrigation equipment will provide proper and more adequate coverage, the Contractor shall make such adjustments prior to planting. Adjustments may also include changes in sizes and degrees of arc as required. Any alteration to the hydraulics of the irrigation system must be approved by the Landscape Architect of record and approved by the City before any changes are made. Minor sprinkler adjustment is not the same as altering the hydraulics by adding sprinklers, or eliminating or adding valves.
- (iv) Lowering or raising sprinkler heads by the contractor shall be accomplished within 10 days after notification by the City through a written notice provided by the Public Works Inspector.
- (v) All sprinkler heads and emitters shall be set perpendicular to finished grades unless otherwise designated on the plans.
- (vi) All PVC pipe and fittings will be handled with care to prevent cracking or splitting, and shall not be stored in the sun. No sun-damaged pipe is to be used. All sun-damaged pipe will be removed and replaced immediately once the Public Works Inspector provides written notice.
- (vii) Upon project installation, have a licensed Landscape Architect and a 'Certified Water Auditor' conduct a final field observation for the approval of the installation.

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- (viii) The contractor will provide the City Engineering Office with a copy of the completed 'Certificate of Compliance', Irrigation Schedule, Landscape and Irrigation Maintenance Schedule, Landscape Irrigation Audit Schedule, and the Irrigation Audit Report as required by Ordinance 1362 – Water Efficient Landscape.
- (ix) This must be completed, reviewed and approved before the inspector releases the property for Certificate of Occupancy.

(5) Planting

(A) General Requirements

- (i) The planting design shall be based upon the principles of water conservation: groupings of plant material based upon like water requirements, ecological requirements, climatic conditions, selection of drought tolerant plant material, etc.
- (ii) All plants shall be selected from the City of Palmdale Recommended Plant List available in Section J. Requests for deviations from this list should be submitted in writing with information provided on the selected material, including growth habit, diseases and pests, root patterns, general characteristics, drought tolerance and compatibility with Sunset Zone 11 climate (high desert). If deviation is approved, an asterisk must be placed on the plan legend acknowledging the plant material is not on the City of Palmdale Approved Plant List.
- (iii) No turf grass is allowed within HOA landscape unless it is made part of an active play field. The plans shall indicate the total square footage of landscaped area.
- (iv) Planting plans shall have a plant legend with symbols indicating the genus and species, quantities and sizes of all plant material. Symbols representing the plant material will show the plant material at 75% of maturity.
- (v) Trees will meet the sizing requirements as listed in the Conditions of Approval. No tree shall be smaller than 15 gallon. Trees shall be chosen from the City of Palmdale Approved Tree List located in Section J. Requests for deviations from the list should be submitted in writing with information provided on the selected material including growth habit, disease and pests, root patterns, general characteristics, drought tolerance and compatibility with Sunset Zone 11 climate (high desert). If approved, an asterisk must be placed on the plan legend with the notation that the tree is not listed on the City of Palmdale Approved Tree List.
- (vi) The quantity and species of trees shall require approval from the City Engineer or designated representative.

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- (vii) Planting details and specifications shall also be provided – See details provided in Section L. Planting details shall encompass the specifications provided herein and conform to the American Public Works Association Standard Plans. All specifications provided herein shall take precedence over the standard plans where discrepancies exist.
- (viii) Plans should be designed with the following criteria – also place the following tree location specifications on the plans:
- (ix) All trees shall be planted not less than:
 - Seven (7) feet from adjacent property lines;
 - Fifty (50) feet from the beginning of curb return on an exit side of curb return;
 - Twenty (20) feet from lamp standards;
 - Ten (10) feet from fire hydrants and driveways;
 - Five (5) feet from all sidewalks and service walks
 - Eight (8) feet away from water meters, sewer pipes, drain pipes, irrigation valves, and irrigation controllers;
 - Front yard trees will be placed at fifteen (15) feet behind the face of curb, out of the public right of way.
 - All corner residential lots require two City street trees to be planted in the center of the 12-foot right of way parkway planting area. If a wall is located on the property line, these trees will require linear root barriers on both sides of the tree.
 - Under no circumstances should a tree be planted that will create an obvious line-of-sight traffic safety issue. The contractor is responsible for notifying the private Landscape Architect of the issue, and the Architect is responsible for rectifying the situation. The City, before implementation, shall approve plan changes.
 - All trees in lawn areas require arbor guards.
 - Install deep root barriers on all trees within five feet of the back of sidewalk, walls or curb, or as directed by the Public Works Landscape Inspector. All root barriers will be linear – no circling of roots – See detail LC-5 in Section L.

(C) HOA projects will utilize concrete mow strips to separate shrub beds and turf, or as listed in the project's Conditions of Approval.

(D) Shrubs shall be a minimum of five-gallon size, or as defined in the Conditions of Approval. Shrubs species will be chosen from the City of Palmdale approved Plant list – see Section J. Deviations from this requirement shall be submitted in writing and shall be based upon species, site conditions, climatic conditions etc. If approved, an asterisk must be placed on the plan next to the plant name on the legend with the notation that the plant is not on the City of Palmdale Approved Plant List.

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- (E) Ground cover shall be prostrate shrubs or flatted ground cover, or a combination of both. Spacing for ground cover shall be 12" O.C. for flatted ground cover. Spacing for prostrate shrubs shall be dependent upon species characteristics.
- (F) A mulch (organic or inorganic) can be substituted for ground cover in certain design situations. Approval by the City Engineer or designated representative is required. The use of bark mulch is highly discouraged and the use of stabilized decomposed granite, rock or cobble mulch is highly encouraged. The installation of a porous fabric weed barrier beneath all mulch except the stabilized decomposed granite is required.
- (G) Vines shall be a minimum of five (5) gallon size.
- (H) Turf for play fields shall be a "drought resistant" tall fescue or equal. All turf shall be provided as sod. Turf shall not be located where the slope exceeds 4:1.

(6) Related Landscaping Material

- (A) Organic Soil amendment shall be Type 1 as described in the Standard Specifications for Public Works Construction. Mulch shall comply with the same requirements. Bark mulch is highly discouraged; stabilized decomposed granite, rocks and cobble are highly encouraged. A porous weed barrier fabric will be placed beneath all mulches except the stabilized decomposed granite.
- (B) Planting tablets for trees and shrubs shall be 21-gram Agriform 20-15-5 two years timed release or approved equal. If one-gallon ground cover plants are used then a 5-gram tablet shall be used.
- (C) Guying and staking materials shall be as follows:
 - (i) Wood tree stakes shall be lodge pole pine, fully treated with an approved wood preservative, 2" (minimum nominal size) diameter;
 - (ii) Wood tree stakes shall be 12 feet long for 24" box trees and 10 feet long for 15 gallon trees;
 - (iii) Tree ties shall be cinch ties – 4 per tree;
 - (iv) Guying Hardware: See Details P-3 and P-4 in Section L
 - Guy Wire: Zinc-coated # 10 steel wire guy, minimum 3 foot
 - ½" 2-Ply Hose cover wire loop
 - Turnbuckles: galvanized or dip painted, size as required
 - Safety sleeve: ½" white PVC full length of wire
 - "Maxwell" or equal tree anchors with 4" minimum cover
- (D) Mulch shall be 65/35 mix, or approved equal when bark mulch is specified.
- (E) Erosion control matting shall be as specified in the standards for slope planting – See Section H.

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

(F) Root barriers shall be 24" Universal Root Barrier by Deep Root Corporation, or approved equal. All root barriers will be installed on a linear basis, no root circling, and must extend a minimum of five (5) feet in each direction from the center of the tree. See detail LC-5 located in Section L.

(G) Arbor Guards shall be installed on trees in turf areas immediately after planting and staking.

(7) Fine Grading and Header

(A) All slopes steeper than 5:1 shall be installed per the City's Standards for Slope Landscaping. See Section H.

(B) Final grade shall insure positive drainage of the site. Drainage in planting areas is to be smooth and uniform with a minimum gradient of 2%.

(C) A minimum of eighteen inches of level planting area shall be provided at the toe of all slopes. If possible, a 3-foot flat area on the top of the slope is requested.

(D) 6" concrete headers shall be installed at all limits of work not already defined by walls, curbing, sidewalks, etc. as listed in the Conditions of approval.

(E) HOA projects will utilize concrete mow strips to separate shrub beds and turf, or as listed in the project's Conditions of Approval. See detail LC-1 located in Section L.

(8) Tree, Shrub and Vine Planting

(A) The results of the agronomic soils test shall be followed. In addition, if not specifically mentioned on the report, the following specifications are to be followed.

(B) All excavated holes shall be twice the diameter and one and one half the depth of the root ball.

(C) Container plants shall be backfilled with:

- 6 parts by volume on-site soil
- 4 parts by volume organic amendments
- 3 lbs. of commercial fertilizer per cubic yard of mix

(D) Planting tablets shall be placed in the upper third of the excavated planting holes in the following quantities:

- 1 tablet per one gallon container
- 2 tablets per five gallon container
- 3 tablets per 15 gallon container
- 8 tablets per 24" box
- 12 tablets per 36" box

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

(E) An earthen basin shall be constructed around each plant; 2” for shrubs, 4” for trees at the base of the plant pit, not at root ball.

(F) Vines shall be removed from nursery stakes and securely attached to walls or fencing. See detail P-7 located in Section L.

(9) Staking and Guying – see details P-1 through P-4 located in Section L;

(A) All 15 gallon and 24” box size trees shall be staked with two tree stakes placed perpendicular to the prevailing winds.

(B) The tree stakes shall not penetrate the root ball. Tree stakes will be spaced far enough from the tree so branches do not come into contact with stakes under normal movement.

(C) All 36” box size and larger trees shall be guyed. In small areas where guying is impractical, three (3) 2” galvanized poles will be utilized for stakes.

(10) Miscellaneous Planting Requirements

(A) Install arbor guard trunk protectors or approved equal at the base of all trees located in turf areas.

(B) Install deep root barriers on all trees planted within five feet of sidewalk, curb, or walls, or as directed by the Public Works Inspector. Root barriers are to be linear only, and should never encircle the roots of the tree. See detail LC-5 located in Section L.

(11) Detention/Retention Basins

Landscape and irrigation plans are required for all basins, unless exempted by Conditions of Approval, or the City Engineer. See Section H for further specifications.

(12) Planting Notes (to be added to the planting plans):

(A) Deliver all plant material with legible identification tags.

(B) The results of the agronomic analysis shall take precedence over the following:

(C) Fertilizer shall be a commercial fertilizer consisting of the following percents by weight:

- 5 - Nitrogen
- 3 - Phosphoric Acid
- 1 - Potash
- 50 - Humus
- 15 - Humic Acids

(D) The following amendments shall be uniformly spread and thoroughly cultivated by means of mechanical tiller (wherever possible) into the top six (6) inches of soil. (If a soils analysis has been performed, the results may alter the following amendments – see # 2 above).

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

(E) Application rate is per 1,000 square feet:

- Nitrogen stabilized organic amendment - 4 cu. Yd.
- Commercial fertilizer - 2 lbs.
- Agricultural gypsum - 100 lbs.
- Soil sulfur - 2 lbs.
- Elemental zinc – 2 lbs.
- Iron sulfate - 2 lbs.

(F) Container plants shall be backfilled with:

- 6 parts by volume on-site soil
- 4 parts by volume organic amendment
- 3 lbs. of commercial fertilizer per cubic yard of mix

(G) Planting tablets (21 gram tablet for trees and shrubs and 5 gram tablet for ground cover and 1 gallon plants) shall be placed in the top third of the excavated planting holes in the following quantities:

- 1 tablet per one gallon container
- 2 tablets per five gallon container
- 3 tablets per 15 gallon container
- 8 tablets per 24" box
- 12 tablets per 36" box

(H) Staking and guying of trees shall be completed immediately upon planting.

(I) Install arbor guard trunk protectors or approved equal at the base of all trees located in turf areas.

(l) All trees shall be planted not less than:

- Seven (7) feet from adjacent property lines;
- Fifty (50) feet from the beginning of curb return on an exit side of curb return;
- Twenty (20) feet from lamp standards;
- Ten (10) feet from fire hydrants and driveways;
- Five (5) feet from all sidewalks, service walks;
- Eight (8) feet away from water meters, sewer pipes, drain pipes, irrigation valves, and irrigation controllers;
- Front yard trees will be placed at fifteen (15) feet behind the face of curb, out of the public right of way;
- All corner residential lots require two (2) City street trees to be planted in the center of the 12-foot right of way parkway planting area. If a wall is located on the property line, these trees will require linear root barriers on both sides of the tree;
- Under no circumstances should a tree be planted that will create an obvious line-of sight traffic safety issue. The Contractor is responsible for notifying the private Landscape Architect of the issue, and the Architect is responsible for rectifying the situation. The City, before implementation, shall approve plan changes

SECTION F: HOME OWNERS ASSOCIATION – PRIVATE LANDSCAPING

- Install deep root barriers on all trees within five feet of the back of sidewalk, walls or curb, or as directed by the Public Works Landscape Inspector. All root barriers will be linear – no circling of roots – See detail LC-5 located in Section L.

End of Section to be added to the plans

SECTION G – Tract Development and Residential Housing

- (1) This section addresses the private plans needed for residential tract housing development, which include model homes; typical front yard and street tree plans; interior slope and erosion control plans; and fuel modification plans. Landscape Maintenance District plans are addressed in Section D. HOA maintained slope and erosion control areas are addressed in Section F and H.
- (2) General plan preparation and submittal requirements are addressed in Sections A, B, and C. Two (2) copies of plans to be submitted to the Engineering Department with other required items as noted in the previously mentioned Sections.
- (3) General Notes to be added to the title sheet – See Section M for sample title sheet:
 - (A) All work shall be performed by a California licensed contractor holding a current C-27 license (Landscaping) or, under the appropriate circumstances, a current General “A” or “B” license, and maintaining a valid City of Palmdale Business License.
 - (B) The Contractor shall obtain a Landscape Permit from the Engineering Department prior to commencement of work.
 - (C) All work shall conform to Standard Specifications for Public Works Construction (SSPWC), latest edition, (published by Building News, 3055 Overland Avenue, Los Angeles, CA) for all work performed and not specifically mentioned herein. All work shall be done in accordance with the plans, specifications, and any special requirements of the permit. Any violation will result in the stoppage of all work until the violation is corrected.
 - (D) No work shall commence on any project until a pre-construction conference has been held with the appropriate City Inspection Department as listed below:
 - (E) The Contractor shall be responsible for notifying the City Engineering Department for all required site visits at 661-267-5255.
 - Pre-construction conference 7 days
 - Certificate of Occupancy Inspection 24 hours

Final inspection for certificate of occupancy will consist of:

- Inspection will be for full conformance to approved plans
- Any deviation from plans must be pre-approved by the Landscape Architect of Record and accepted by the City Engineering Landscape Department before installation.
- The Contractor will run the irrigation system from the controller to prove basic functionality; no cross lot irrigation; backflow code adherence, and low flow drainage prevention.

SECTION G – TRACT DEVELOPMENT AND RESIDENTIAL HOUSING

- A Certified Irrigation Auditor will audit the irrigation system for compliance with Ordinance #1362 – Water Efficient Landscape and will provide an irrigation audit report to the Contractor. .
- The Contractor will provide the City engineering office with a copy of the completed Certificate of Compliance, Irrigation Schedule, Landscape and Irrigation Maintenance Schedule, Landscape Irrigation Audit Schedule, and the Irrigation Audit Report as required by Ordinance #1362 – Water Efficient Landscape.

(G) Contractor shall make himself/herself familiar with all underground utilities, pipes and structures. Contractor shall take sole responsibility for any cost incurred due to damage of said utilities. Prior to the commencement of work the contractor shall contact Underground Service Alert (800) 422-4133 for location of underground utilities.

(H) Do not willfully proceed with construction as designed when it is obvious that unknown obstructions, area discrepancies and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the Public Works Inspector and the Developer. The contractor shall assume full responsibility for all necessary revisions due to failure to give such notification.

(I) Temporary Erosion Control:

- (i) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be covered with City of Palmdale approved erosion control blankets. Installation shall conform to manufacturer's specifications. Deviations from this requirement shall be submitted in writing with an alternate plan for temporary erosion control (water and dust). The City Engineer shall approve this plan.
- (ii) Installation of the erosion control blankets shall be installed to the satisfaction of the City Engineer prior to the acceptance of rough grading.

(J) Permanent Erosion Control

- (i) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be covered with City of Palmdale approved erosion control blankets. Installation shall conform to manufacturer's specifications.
- (ii) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be protected against damage from erosion by planting with ground cover plants. Slopes exceeding fifteen (15) feet in vertical height shall also be planted with trees spaced at no more than twenty (20) feet on center or shrubs spaced at no more than ten (10) feet on center or a combination of both to equal the intent. All plant material shall be triangularly spaced.

SECTION G – TRACT DEVELOPMENT AND RESIDENTIAL HOUSING

- (iii) Slopes requiring permanent stabilization shall be provided with an approved system of irrigation.
 - (iv) All planting and irrigation shall be installed to the satisfaction of the City Engineer, or designated representative, prior to acceptance of final grading approval. Contact the Public Works Inspection Line at 661-267-5255 for inspection.
- (K) The Landscape Architect signing these plans is responsible for meeting all applicable Conditions of Approval pertaining to landscape architecture for this project, and for assuring the accuracy and adequacy of the work hereon. In the event of discrepancies arising during installation of landscape improvements, the Landscape Architect signing these plans shall be responsible for determining an acceptable solution, and revising the plans for review and approval by the City prior to installation of landscape improvements.
- (L) The Landscape Architect signing these plans has agreed to comply with the criteria and specifications of Ordinance # 1362 – Water Efficient Landscape, and has applied them accordingly for the efficient use of water in the landscape design plan.

End of Section to be placed on the plan

(4) GENERAL REQUIREMENTS FOR IRRIGATION SYSTEM

- (A) The design shall be prepared in such a way as to minimize the amount of supplemental water required. The Landscape Architect's approach to meeting the City Water Conservation Ordinance # 1362 shall be stated and provided for the plan checker on the plans.
- (B) A water-conserving approach to landscape design can be implemented through a variety of techniques and practices including the use of appropriate plant material, the placement of plant material into compatible irrigation zones, irrigation techniques, irrigation products, irrigation management, evaporation control, etc. Such techniques shall be addressed in the above-mentioned concept.
- (C) General guidelines for water conservation will be expanded upon in the individual planting and irrigation sections. Each project will be required to meet the requirements of Ordinance # 1362 – Water Efficient Landscape.

(5) IRRIGATION:

- (A) The irrigation system shall be a fully automatic system. Irrigation plans shall indicate location and size of irrigation water meters, points of connection, backflow devices, valves, pumps, master valves, flow sensors, controllers, sprinklers, emitters, mainline and lateral line pipe. An irrigation legend shall provide the sizes and models of equipment specified.
- (B) The following shall be placed next to the irrigation legend on all plans – See Irrigation Detail I-35 as an example:

SECTION G – TRACT DEVELOPMENT AND RESIDENTIAL HOUSING

- Name of Water Purveyor with contact name and phone number;
- Size of water meter and service line;
- Static water pressure;
- Design water pressure;
- Designed highest gpm/gph flow;
- Worst-case pressure loss calculations. – See Detail I-35 in Section L for more information

(C) Installation book, sheet and how to incorporate City specifications shall be indicated whenever possible. Installation shall conform to the City approved irrigation details included in Section L.

(D) The spray, rotor, bubbler and drip irrigation system shall be organized into zones based upon plant material selections and environmental considerations (i.e. sun exposure, slope aspect, soil conditions, etc.)

(E) The selection of irrigation systems components shall be based upon the overall design and upon water conservation principles. A minimum of 25% of each landscape shall be irrigation with low volume systems. The designer shall indicate on the irrigation plan the proposed water management principles.

(F) The irrigation system must provide complete coverage for all areas. On residential projects a minimum of head to head coverage is required due to the steady wind conditions of the High Desert.

(G) No above ground UVR pipe to be specified on any projects within the City. All pipe is to be buried with trenches compacted to adjacent grade.

(H) Where above ground irrigation components (such as automatic controllers and backflow devices) are placed on slopes, low retaining walls and/or curbing shall be required to be installed at the location to prevent erosion.

(6) Controllers for Residential Irrigation Plans

Residential projects will specify a residential grade ET/SMART electronic controller, which provides multiple programming options for hydrozone watering; cycle and soak programs, etc. The irrigation controller will show active ETo data at the time of the irrigation audit. The size of the clock will be large enough to accommodate front yard, slope and erosion control and any other necessary irrigation to be installed by the Developer. The ability to expand the irrigation controller to accommodate the homeowner's additional valves for backyard landscaping shall be considered.

(7) Backflow Device and Irrigation Valve Combination

Typical front yards will utilize an approved electronic residential antisiphon valve. All slopes requiring permanent slope and erosion control will utilize an angle valve with an approved air-gap device at the top of slope. All air-gaps will be placed 12 inches higher than the highest outlet on the system. All antisiphon valves and air gaps (AVB) will be insulated against freeze damage. See details I-4 and I-29 thru I-31 located in Section L.

(8) Point Source Drip Irrigation Systems (Details Section L)

- (A) All drip irrigation systems using emitters or emission devices shall be installed with hard pipe, using pipe as specified in PVC pipe and fittings in this section. Polyethylene tubing on grade is not allowed.
- (B) All emitter bodies are to be constructed of UV and chemical resistant, non-corrosive material.
- (C) Emitters shall be pressure compensating and self-flushing. Emitters may be barbed or threaded depending on use and manufacturer.
- (D) One piece, multi-port manifold or single emission devices with built-in emitters shall be threaded, pressure compensating and self-flushing. These emitters are to be constructed of UV resistant and chemical resistant non-corrosive material.
- (E) Low flow/volume nozzles comparable and equal to drip applications may be submitted for approval. However such nozzles shall have threads adaptable to pop-up bodies/nozzles and allow for installation on Schedule 80 risers. Microspray systems are not allowed.
- (F) Tubing if used from emitters, emission devices and manifolds to plant source shall be ¼" extruded polyethylene.
 - (i) All tubing extending from emitter, emission device or manifold shall be buried at a minimum 9" from final finish grade. Omit hard 90-degree turns and provide tubing to be installed in a sweeping manner to avoid kinks.
 - (ii) The tubing shall fit onto the outlet barbs of all emitters made by the same manufacturer.
- (G) Emitter assemblies may consist of the following:
 - (i) Barbed or threaded emitters may be installed on flexible risers with adapters to buried PVC Hard pipe.
 - (ii) Emitters, manifolds and emission devices are to be installed on Schedule 80 risers located inside emitter boxes.
 - (iii) All fittings and adapters shall be of the same manufacturer as emitters that are specified.
- (H) Manufacturers stakes and bug caps shall be installed at ends at all points of discharge when tubing from emitters is used. Discharge shall be at the plant source in the watering basin and noted in City of Palmdale Standard Details Section L.
- (I) Filter screens for emitter system shall be of the type recommended by the manufacturer of the emitter, manifold or emission device.
- (J) In-Line Emitter Tubing:
 - (i) In-line emitter tubing and subsurface emitter systems – See detail Section L.

SECTION G – TRACT DEVELOPMENT AND RESIDENTIAL HOUSING

- (ii) In-line emitter tubing shall be constructed of UV resistant and Chemical resistant non-corrosive material.
 - (iii) Emitters shall be pressure compensating and self-flushing.
 - (iv) Install flush valves at the ends of each valve system in each direction. If multiple directions of lateral terminate in various directions, then a flush valve is required at each end of lateral run. These flush valves are intended to be at the very low point of the system. Provide a hose for flushing as noted in the COP standard details, Section L. Multiple flush valves may be required.
- (K) Air relief valves shall be installed at an end of all systems in accordance with manufacturers recommendations.
- (L) All fittings and adapters shall be of the same manufacturer as emitters that are specified.
- (M) Filter screens for each system shall be of the type recommended by the manufacturer of the drip line.
- (9) PVC Pipe and Fittings
- (A) Pressure supply lines downstream of the backflow prevention device shall be Class 315 PVC in sizes 2" and larger and Schedule 40 PVC in sizes 1 - ½" and smaller. All PVC 6" or larger shall be gasketed with cast iron fittings.
 - (B) On residential jobs class 200 PVC pipe is acceptable for lateral lines.
 - (C) All fittings shall be standard weight Schedule 40 PVC.
 - (D) All threaded nipples shall be standard weight Schedule 80 with molded threads. Solvent cement joints shall be made as prescribed by the manufacturer. An aggressive primer shall be used in conjunction with a solvent primer designed for the fit of the pipe and fittings of each size range specified.
 - (E) Provide a minimum of 18" of cover for all pressure lines.
 - (F) Provide a minimum of 12" of cover for all non-pressure lines.
 - (G) Provide a minimum of 6" of separation between lines. Parallel lines shall not be installed directly over one another. Installation of lines for other trades shall not be laid in irrigation trenches, but shall be installed in a separate trench. See Detail I-14 located in Section L.
 - (H) Concrete thrust blocks shall be installed on all pressure line changes of direction and pipes exceeding 2" in diameter. See Detail I-37 located in Section L.
- (10) Sprinkler Heads
- (A) All sprinklers are to be pop-up when near a walkway, or at the base of a slope. Sprinklers are to be utilized for slope and erosion control only. Low angled nozzles are to be utilized to prevent overspray.

SECTION G – TRACT DEVELOPMENT AND RESIDENTIAL HOUSING

- Head to head coverage is required where spray irrigation is used or slope and erosion control.
 - Raised schedule 80 risers with spray head are allowed only in areas not adjacent to walkways or at the base of a slope, to prevent trip hazards.
 - Sprinklers located at the base of a slope or in areas with potential for low head run-off, will require a SAM-PRS feature, or check valve to prevent low area drainage run off.
- (B) Spray heads shall have a screw adjustment.
- (C) Riser nipples for all sprinkler heads shall be the same size as the riser opening of the sprinkler body.
- (11) **Bubblers**
- (A) A pressure-compensating tree bubbler system shall be installed to each tree on a separate valve. See Detail I-8 located in Section L.
- (B) A pressure-compensating bubbler shall be installed to each shrub, unless drip irrigation is to be utilized. See detail I-27 located in Section L. No spray irrigation in front yards will be allowed unless it is for slope and erosion control measures.
- (12) **Irrigation Notes (to be placed on the irrigation plan):**
- (A) The contractor shall obtain and pay for any and all permits and all inspections required, including, but not limited to:
- (B) Obtain City of Palmdale Landscape Permit through Engineering Department.
- (C) The manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of articles used in this installation furnishes directions concerning points not shown in the drawings and specifications.
- (D) The irrigation system shall be flushed prior to installation of irrigation heads.
- (E) Field Quality Control:
- (i) **Adjustment of the System:**
- The Contractor shall flush and adjust all irrigation emission devices for optimum performance and to prevent over spray onto walks, roadways, and buildings as much as possible.
 - If it is determined that minor adjustments in the irrigation equipment will provide proper and more adequate coverage, the Contractor shall make such adjustments prior to planting. Adjustments may also include changes in sizes and degrees of arc as required. Any alteration to the hydraulics of the irrigation system must be approved by the Landscape Architect of Record

and approved by the City before any changes are made. Minor sprinkler adjustment is not the same as altering the hydraulics by adding sprinklers, or eliminating or adding valves.

- Lowering or raising sprinkler heads by the Contractor shall be accomplished within 10 days after notification by the City through a written notice provided by the Public Works Inspector.
- All sprinkler heads and emitters shall be set perpendicular to finished grades unless otherwise designated on the plans.
- All PVC pipe and fittings will be handled with care to prevent cracking or splitting, and shall not be stored in the sun. No sun-damaged pipe is to be used. All sun-damaged pipe will be removed and replaced immediately when the Public Works Inspector provides written notice.

(F) Irrigation Testing for Housing Projects:

- (i) The Developer will request the presence of the Public Works Inspector in the Engineering Department (661) 267-5255, at least 24 hours in advance, for inspection of all private irrigation systems for homes. Residential irrigation systems do not require a mainline test, but the system will be checked for adherence to the approved plans, functionality and backflow compliance. The system will also be tested and certified by a 'Certified Irrigation Auditor' provided by the Developer, and all recommendations of the audit completed. The Developer's Landscape Contractor will run the system in the presence of the Inspector, and will make all corrections to the system before release for occupancy.
- (ii) The Contractor will provide the City Engineering office with a copy of the completed 'Certificate of Compliance, Irrigation Schedule, Landscape and Irrigation Maintenance Schedule, Landscape Irrigation Audit Schedule, and the Irrigation Audit Report as required by Ordinance #1362 – Water Efficient Landscape.

(13) **PLANTING:**

(A) General Requirements

- (i) The planting design shall be based upon the principles of water conservation: groupings of plant material based upon like water requirements, ecological requirements, climatic conditions, selection of drought tolerant plant material, etc.
- (ii) All plants shall be selected from the City of Palmdale Recommended Plant List available in Section J. Requests for deviations from this list should be submitted in writing with information provided on the selected material, including growth habit, diseases and pests, root patterns, general characteristics,

SECTION G – TRACT DEVELOPMENT AND RESIDENTIAL HOUSING

drought tolerance and compatibility with Sunset Zone 11 climate (High Desert).

- (iii) No living turf allowed in the front yard of any new single-family homes. A limited amount of artificial turf will be allowed as an 'accent point only'.
- (iv) Planting plans shall have a plant legend with symbols indicating the genus and species, quantities and sizes of all plant material. Symbols representing the plant material will show the plant material at 75% of maturity. All shrubs and vines will be a minimum of five (5) gallon. Ground cover plants may either be one (1) gallon shrubs, or flatted with the spacing indicated on the plan.
- (v) The plan will show a minimum of 60% coverage of the front yard with plant material, subject to the approval of the City Engineer.
- (vi) The Landscape Architect will utilize some or all of the following design features to help provide aesthetic appeal to the front yard. See Power Point presentation for Ordinance # 1362 – Water Efficient Landscape available at the beginning of Section VI (on-line only).
 - (a) Mounding
 - (b) Meandering swales
 - (c) Raised flower pots
 - (d) Strategically placed boulders and/or cobbles
 - (e) Colored rock and/or decomposed granite as mulch.
 - (f) Short walls or raised beds
 - (g) Recirculating fountains
 - (h) Bird baths
 - (i) Boulders
- (vii) If different colored or types of mulch are utilized for aesthetic reasons, a permanent barrier will be installed between the mulches to help keep them separated. At a minimum, plastic header board will be utilized; redwood headers, or concrete mow strips are preferred. The only exception is when a naturalized streambed is being used as an accent point. Then no barrier is required between the rock mulch and cobble to make it look natural. The use of bark mulch is not allowed in the public right of way and is to be used as an accent up near the house only. The use of stabilized decomposed granite, rock and cobble are highly encouraged. A porous fabric weed barrier shall be installed beneath all mulched areas with the exception of the stabilized decomposed granite.
- (viii) Planting details and specifications shall also be provided – City details provided in Section L. Planting details shall encompass the specifications provided herein and conform to the American

SECTION G – TRACT DEVELOPMENT AND RESIDENTIAL HOUSING

Public Works Association Standard Plans. All specifications provided herein shall take precedence over the standard plans where discrepancies exist.

- (14) Trees All corner residential lots require two City street trees to be planted in the center of the 12-foot right of way parkway planting area. If a wall is located on the property line, these trees will require linear root barriers
- (A) All trees shall be a minimum of 15-gallon size.
 - (B) All street trees shall be selected from the approved plant list for street trees. City street trees and easement-approved trees are located in Section J.
 - (C) See tree spacing restrictions in Section 15 K
- (15) Planting Notes (to be added to the planting plans)
- (A) Deliver all plant material with legible identification tags.
 - (B) An agronomic analysis will be performed to determine the needs of the soil, and the results shall take precedence over the following:
 - (C) Fertilizer shall be a commercial fertilizer consisting of the following percents by weight:
 - 5 - Nitrogen
 - 3 - Phosphoric Acid
 - 1 - Potash
 - 50 - Humus
 - 15 - Humic Acids
 - (D) The following amendments shall be uniformly spread and thoroughly cultivated by means of mechanical tiller (wherever possible) into the top six (6) inches of soil. (The results of the soils analysis may alter the following amendments – see # B above).
 - (E) Application rate is per 1,000 square feet:
 - Nitrogen stabilized organic amendment - 4 Cu. Yd.
 - Commercial fertilizer - 2 lbs.
 - Agricultural gypsum - 100 lbs.
 - Soil sulfur - 2 lbs.
 - Elemental zinc – 2 lbs.
 - Iron sulfate - 2 lbs.
 - (F) Container plants shall be backfilled with:
 - 6 parts by volume on-site soil
 - 4 parts by volume organic amendment
 - 3 lbs. of commercial fertilizer

SECTION G – TRACT DEVELOPMENT AND RESIDENTIAL HOUSING

(G) Planting tablets (21 gram tablet for trees and shrubs and 5 gram tablet for ground cover and 1 gallon plants) shall be placed in the top third of the excavated planting holes in the following quantities:

- 1 tablet per one gallon container
- 2 tablets per five gallon container
- 3 tablets per 15 gallon container
- 8 tablets per 24" box
- 12 tablets per 36" box

(H) Staking and guying of trees shall be completed immediately upon planting.

(I) Install arbor guard trunk protectors or approved equal at the base of all trees located in turf areas.

(J) Install deep root barriers on all trees within five (5) feet of the back of sidewalk, walls or curb, or as directed by the Public Works Landscape Inspector. All root barriers will be linear – no circling of roots – See detail LC-5 located in Section L.

(K) All trees shall be planted not less than:

- Seven (7) feet from adjacent property lines;
- Fifty (50) feet from the beginning of curb return on an exit side of curb return;
- Twenty (20) feet from lamp standards;
- Ten (10) feet from fire hydrants and driveways;
- Five (5) feet from all sidewalks, service walks;
- Eight (8) feet away from water meters, sewer pipes, drain pipes, irrigation valves, and irrigation controllers;
- Front Yard trees will be placed at fifteen (15) feet behind the face of curb, out of the public right of way;
- All corner residential lots require two (2) City street trees to be planted in the center of the 12-foot right of way parkway planting area. If a wall is located on the property line, these trees will require linear root barriers on both sides of the tree;
- Under no circumstances should a tree be planted that will create an obvious line-of sight traffic safety issue. The Contractor is responsible for notifying the private Landscape Architect of the issue, and the Architect is responsible for rectifying the situation. Plan changes shall be approved by the City before implementation;
- All trees in lawn areas require arbor guards.
- Install deep root barriers on all trees within five feet of the back of sidewalk, walls or curb, or as directed by the Public Works Landscape Inspector. All root barriers will be linear – no circling of roots – See detail LC-5 in Section L.

SECTION H: SLOPE AND EROSION CONTROL

(1) TEMPORARY EROSION CONTROL

- (A) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be covered with City approved erosion control blankets such as North American Green S-150 or equal. Installation shall conform to the manufacturer's specifications. Deviations from this requirement shall be submitted in writing with an alternative plan for temporary erosion control. The City Engineer, or his designated representative, shall approve this plan.
- (B) The surface of all slopes more than three (3) feet in vertical height and steeper than 5:1 shall be planted with ground cover plants. The ground cover shall be from flatted rooted cuttings, triangularly spaced at 12" O.C. See detail P-8 located in Section L. Ground cover shall be selected from the following list:
- *Baccharis pilularis* "Twin Peaks", Dwarf Coyote Brush
 - *Hypericum calycinum*, St. Johnswort
 - *Lonicera japonica halliana*, Hall's Hardy Honeysuckle
- (C) Requests for substitutions shall be submitted in writing and shall be based upon climatic, ecological and site conditions. Substitutions shall be demonstrated to have rooting characteristics necessary for erosion control.
- (D) In addition to ground cover, slopes exceeding fifteen (15) feet in height shall be planted with trees at twenty (20) feet on center or shrubs at ten (10) feet on center, or a combination of both at equivalent spacing, using the distance spacing from walls, etc. as previously mentioned in Section J for trees – See detail P-8 located in Section L.
- (E) Trees shall be selected from the following list:
- *Chilopsis linearis*, Desert Willow
 - *Koelreuteria paniculata*, or *bipinnata*, Golden Rain Tree or Golden Flame tree
 - *Pistacia chinensis*, Chinese Pistache
 - *Cedrus deodora*, California Christmas Tree
 - *Pinus eldarica*, Mondell Pine * note Eldarica Pine trees will not be placed on the slopes in detention/retention basins as of July 1, 2010. They will only be allowed on large slopes or in large open areas.
- (F) Requests for substitutions shall be submitted in writing and shall be based upon climatic, ecological and site conditions. Substitutions shall be demonstrated to have rooting characteristics necessary to assist in erosion control.
- (G) Planting need not be provided for cut slopes rocky in character and not subject to damage by erosion and slopes protected against erosion by

SECTION H: SLOPE AND EROSION CONTROL

other methods when such methods have been specifically recommended by a soils engineer, engineering geologist or equivalent authority and found to offer erosion protection equal to that provided by the planting specified in this section. Provide documents from geologist, soils engineer, etc. with plan submittal.

- (H) Slopes that required to be planted shall also be irrigated with a permanent, electrically controlled automatic active ET based Smart Controller system designed to cover all portions of the slopes. A minimum of head-to-head irrigation coverage for private slopes, and 133% coverage for City Projects and Landscape Maintenance Districts.
 - (I) Erosion control blankets are North American Green S-150 or approved alternative. No jute netting will be approved.
 - (J) The irrigation system shall be installed with an approved backflow device.
 - (K) All piping shall be installed underground. Trenches shall be compacted to the adjacent grade.
 - (L) Impact type irrigation heads shall not be allowed. Stream rotors are required for large areas.
 - (M) No drip irrigation for slope and erosion control plans.
- (2) Landscaping plans are required for all detention basins
- (A) The basin will be enclosed with walls as approved by the City Engineer.
 - (B) A landscape buffer is to be planted between the sidewalk and the enclosure (minimum of 5' width)
 - (C) The slopes of the basin (inside the enclosure) are to be hydroseeded with a drought tolerant mix as approved by the City Engineer. Specifications and instructions are provided below in Section (3).
 - (D) *Pinus eldarica* "Mondell" shall be planted at 25' O.C. at the top of slope inside the basin enclosure.

SECTION H: SLOPE AND EROSION CONTROL

(3) Hydroseeding: PLACE ENTIRE SECTION ON PLAN

- (A) Furnish all labor, material, equipment and services necessary to provide all landscape planting, complete in place, as shown and specified.
- (B) Work specified in this Section: Hydroseeding of basin slopes.
- (C) Source quality control:
 - (i) Submit documentation to the City engineering office within thirty (30) days after award of contract that all material is available. Contractor shall be responsible for all material listed on hydroseed schedule. Any and all substitutions due to unavailability must be requested in writing prior to confirmation of ordering. All materials shall be subject to inspection by Inspector at any time after confirmation of ordering.
 - (ii) The Contractor shall submit specifications of any item being used on site upon request of the Inspector.
- (D) Job Conditions:
 - (i) Perform actual planting only when weather and soil conditions are suitable in accordance with locally accepted practice.
 - (ii) Samples and Tests:
 - (iii) Inspector reserves the right to take and analyze samples of materials for conformity to specifications at any time. Contractor shall furnish samples upon request by Inspector. Rejected materials shall be immediately removed from the site at Contractor's expense. Contractor shall pay cost of testing of materials not meeting specifications.
- (E) Materials:
 - (i) All materials shall be of standard, approved and first grade quality and shall be in prime condition when installed and accepted. Any commercially processed packaged material shall be delivered to the site in the original unopened container bearing the manufacturer's guaranteed analysis. Contractor shall supply Inspector with a sample of all supplied materials accompanied by analytical data from an approved laboratory source illustrating compliance or bearing the manufacturer's guaranteed analysis.
 - (ii) Fertilizer: Hydromulch fertilizer shall be Gro-Power 14-4-9 or approved equal.
 - (iii) Seed: All seed used shall be labeled and shall be furnished in sealed standard containers with signed copies of a statement from the vendor certifying that each container of seed is delivered fully labeled in accordance with California State Agricultural Code and is equal to or better than the requirements of these specifications.

SECTION H: SLOPE AND EROSION CONTROL

- (iv) Seed that has become wet, moldy or otherwise damaged in transit or storage will not be accepted.

(F) Detention Basin Hydroseeding Schedule

<u>(i) Species</u>	<u>Application Rate</u>
Atriplex semibaccata	15 lb./acre
Eriogonum fasciculata	10 lb./acre
Plantago inuslaris	15 lb./acre
Bromus hordeaceus	20 lb./acre
Hycon Rose Clover	10 lb./acre
Eschscholzia californica	1 lb./acre
Chrysothamnus nauseosus	6 lb./acre

(G) Hydroseeding Fiber Mulch:

- (i) "Hydro-Mulch" as manufactured by Conwed, or approved equal.
- (ii) The fiber mulch shall be composed of wood cellulose fiber and contain no germination or growth-inhibiting factors. It shall have a consistent texture that disperses evenly and remain suspended in agitated water. It shall have a temporary green dye and the following proper analysis:

Moisture Content	9.0% + 3% O.D. Basis
Organic Matter	99.2% + 0.8%
Ash Content	0.8% + 0.2%
Ph	4.8 + 0.5
Water Holding Capacity (grams of H2O per 100 grams of fiber)	1150 Minimum

(H) Hydroseeding Additive (Binder): Ecology 'Control M-Binder' organic seeding additive.

(I) Water: Potable

(J) Inspection:

- (i) Insure that final grades to +/- 0.04' have been established prior to commencing hydroseeding operations.

(K) Planting Installation:

- (i) Final modification to grade may be required to establish the fine grade. Finish grading shall insure proper drainage of the site as required by the Inspector.
- (ii) Actual hydroseeding operation shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted practice, as approved by the Inspector.

SECTION H: SLOPE AND EROSION CONTROL

(iii) Pre-Plant Weed Control:

- (a) At the beginning of work, spray with a non-selective systemic contact herbicide, as recommended and applied by an approved licensed landscape pest control advisor and applicator. Leave sprayed plants intact for at least fifteen (15) days to allow systemic kill.
- (b) Clear and remove existing weeds by mowing or grubbing off all plant parts at least ¼” below the surface of the soil over the entire area to be planted.
- (c) Maintain site weed free until final acceptance by owner utilizing mechanical and chemical treatment.

(L) The hydroseeding process shall be followed in the order listed below:

- (i) Pre-Plant Weed Control
- (ii) Hydroseeding operation

Seed	As Specified in 2.01C	(M) An
Mulch	2000 lb./acre	
Fertilizer	500 lb./acre	
Seeding Additive (Binder)	100#/acre	
Water	3600 gal. /acre	

approved hydromulch company will apply the hydroseed to all areas.

- (N) The hydromulch shall be applied in the form of slurry consisting of cellulose fiber, seed, chemical additives, commercial fertilizer and water. When hydraulically sprayed on the soil surface, the hydro mulching shall form a blotter-like groundcover impregnated uniformly with seed and fertilizer and shall allow the absorption of moisture and rainfall to percolate to the underlying soil.
- (O) Preparation: The slurry preparation shall take place at the site of work and shall begin by adding water to the tank when the engine is at half throttle. When the water level has reached the height of the agitator shaft, full recirculation shall be established; and at this time the seed shall be added. Fertilizer shall then be added, followed by mulch. The mulch shall only be added to the mixture after the seed and the tank is at least one-third filled with water. All the mulch shall be added by the time the tank its two-thirds to three-fourths full. Spraying shall commence immediately when the tank is full.
- (P) Application: The operator shall spray with a uniform visible coat by using the green color of the mulch as a guide. The slurry shall be applied in a sweeping motion, in an arched stream so as to fall like rain allowing the

SECTION H: SLOPE AND EROSION CONTROL

wood fibers to build on each other until a good coat is achieved and the material is spread at the required rate per acre.

- (Q) Time Limit: All slurry mixture that has not been applied within two hours after mixing will be rejected and removed from the project and disposed at the Contractor's expense.
- (R) The nozzle operator must fill out daily work sheets, and one copy shall be given to the Inspector. The following information shall be recorded:
- Seed - type, amount
 - Fertilizer - analysis, amount
 - Mulch - type, amount
 - Seeding Additive, type, amount
 - Number of Loads - amount of water
 - Area covered in acres
 - Equipment used - capacity, license number if applicable
- (S) The nozzle operator and the City Inspector shall sign this worksheet.
- (T) Protection: Special care should be exercised by the Contractor in preventing any of the slurry being sprayed inside any reservoir basin or into drainage ditches and channels, which may impede the free flow of rain or irrigation water. Any slurry spilled into restricted areas shall be cleaned up at the Contractor's expense to the satisfaction of the Inspector.
- (U) Immediately following application of hydromulch, the contractor shall wash excess material from previously planted materials and architectural features. Care shall be exercised to avoid washing or eroding mulch materials from area.
- (V) Equipment - Hydraulic equipment used for the application of the fertilizer, seed and slurry of prepared wood pulp shall have a built-in agitation system and operating capacity sufficient to agitate, suspend and homogeneously mix a slurry containing not less than 40 lb. of fiber mulch plus a combined total of 7 lb. or fertilizer solids for each 100 gallons of water.
- (W) The slurry distribution lines shall be large enough to prevent stoppage and shall be equipped with a set of hydraulic spray nozzles that will provide a continuous non-fluctuating discharge. The slurry tank shall have a minimum capacity of 1,500 gallons and shall be mounted on a traveling unit, either self-propelled or drawn by a separate unit which will place the slurry tank and spray nozzles within sufficient proximity to the areas to be seeded.
- (X) The hydraulic equipment used for pesticide application shall consist of a clean 150-gallon minimum capacity fiberglass tank with complete mechanical agitation. The pump volume shall be ten gallons per minute while operating at a pressure of 100 pounds per square inch.

SECTION H: SLOPE AND EROSION CONTROL

Distribution line shall be large enough for even chemical distribution. The spray nozzle must cover a 15-foot swath, with a minimum output of five (5) gallons per minute at 80 psi.

(Y) Clean-Up:

- (i) After hydroseeding operations have been completed, remove all trash, excess soil, and rubbish from the property. All scars, ruts or other marks in the ground caused by this work shall be repaired and the ground left in a neat and orderly condition throughout the site. Contractor shall pick up trash resulting from this work no less frequently than each Friday before leaving the site, once a week, and/or the last working day of each week. All trash shall be removed completely from the site.
- (ii) The Contractor shall leave the site broom-clean and shall wash down all paved areas within the contract area, leaving the premises in a clean condition. All walks shall be left in a clean and safe condition.

(Z) Observation Schedule:

- (a) The Contractor shall be responsible for notifying the Inspector in advance for the following site visits, according to the time indicated:
 - Pre-job conference - 7 days
 - Hydroseeding operations - 48 hours
 - City Projects and LMD'S – 661-267-5346
 - HOA and Commercial jobs – 661-267-5255

SECTION I: Fuel Modification Plans

All landscape and irrigation plans that are required by Los Angeles County to comply with the Fuel Modification Zone requirements shall be provided to the L.A. County Fire Department for their perusal and approval. The Fire Department will provide their signature and official stamp on the plans, and a copy provided to the City of Palmdale before the final approval of landscaping plans by the Engineering Department.

Section J – [Approved Plant List Link](#) The Cities of Palmdale and Lancaster have combined their plant lists for a regional approach with the list review being conducted on a quarterly basis with the Antelope Valley College. It also resides on the website of the ‘Desert Gardener’, Neal Weisenberger, who is the representative of Antelope Valley College Horticulture Department. Follow the link to the current edition of the approved plant list for the City of Palmdale. If you want to utilize a plant that is not on the list for your project, please provide a picture of the plant along with a written explanation of why you think this plant should be allowed to be utilized. Any deviations from this list are subject to the approval of the Director of Public Works, or his/her designee.

GENERAL TREE REQUIREMENTS FOR ALL PLANS

- Seven (7) feet from adjacent property lines;
- Fifty (50) feet from the beginning of curb return on an exit side of curb return;
- Twenty (20) feet from lamp standards;
- Ten (10) feet from fire hydrants and driveways;
- Five (5) feet from all sidewalks, service walks;
- Eight (8) feet away from water meters, sewer pipes, drain pipes, irrigation valves, and irrigation controllers;
- Front Yard trees will be placed at fifteen (15) feet behind the face of curb, out of the public right of way;
- All corner residential lots require two (2) City street trees to be planted in the center of the 12-foot right of way parkway planting area. If a wall is located on the property line, these trees will require linear root barriers on both sides of the tree;
- Under no circumstances should a tree be planted that will create an obvious line-of sight traffic safety issue. The Contractor is responsible for notifying the private Landscape Architect of the issue, and the Architect is responsible for rectifying the situation. Plan changes shall be approved by the City before implementation;
- All trees in lawn areas require arbor guards.
- Install deep root barriers on all trees within five feet of the back of sidewalk, walls or curb, or as directed by the Public Works Landscape Inspector. All root barriers will be linear – no circling of roots – See detail LC-5 in Section L.
- Trees are not to be topped under any circumstances with-in the City of Palmdale.

SECTION K – NOTICE OF SUBSTANDARD LANDSCAPING

Notice of Substandard Landscaping – A single family home that has had a Notice of Substandard Landscaping issued by Code Enforcement will not need to submit landscape plans for review to the City of Palmdale as outlined in Ordinance # 1362 – Water Efficient Landscape.

A Landscape Contractor who holds a current C-27 license and a current City of Palmdale business license will be able to design and install the front yard to meet the checklist available in Section N Appendix F. The contractor will utilize Section G specifications for tract development and residential housing requirements for irrigation and planting with the exception of providing a grading plan, landscape plan, soils analysis etc. A Landscape Permit will be required and a preconstruction meeting held before any work can begin. Please call 661-267-5272 with questions regarding the pulling of the Landscape Permit and preconstruction meeting. The City Public Works Inspector will inspect the landscaping for conformance to the standards, and will provide a signed copy of the checklist to Code Enforcement once the landscaping has met standards.

Substandard Landscape Check list is located in Section N: Appendix F Miscellaneous Documentation. There is a hyperlink located in the Table of Contents directly to the document.

SECTION L: DETAILS

Details in PDF format (Tiff Format available in next section)

Hardscape

- LC-1 Concrete Mow Strip
- LC-2 Typical Decomposed Granite Paving
- LC-3A Typical Median Stamped/Colored Concrete Paving
- LC-3B Typical Median Stamped Concrete Paving
- LC-3C Typical Median Concrete Instructions
- LC-4 Typical Plastic Turf Header
- LC-5 Typical Linear Tree Root Barrier

Irrigation

- I-1 Automatic Controller with Top-load Enclosure (Outdoor)
- I-2 Electric Meter Enclosure (Outdoor)
- I-3 Typical Remote Control Valve (Straight Type)
- I-4 Typical Remote Control Valve (Angle Type)
- I-5 Typical Quick-Coupling Valve
- I-6 Typical Threaded Gate or Ball Valve (3" Size or Smaller)
- I-7 Typical Backflow Preventer inside Enclosure
- I-8 Typical Tree Well Bubbler
- I-9 Deleted
- I-10 Typical 12" Pop-up Shrub Head (Side Gated)
- I-11 Typical 12" Pop-up Shrub Head (Bottom Feed)
- I-12 Typical Lawn Spray Head Assembly
- I-13 Typical Lawn Rotor Head (Large)
- I-14 Typical General Ditching
- I-15 Typical Air and Water Relief Valve
- I-16 Typical Automatic Controller (Indoors)
- I-17 Maxicom Grounding Grid Assembly
- I-18 Typical Automatic Controller with Front Load Enclosure
- I-19 Typical Automatic Controller with Front-Load and Concrete pad
- I-20 Typical Automatic Controller with Top-Load Enclosure & Quick Pad
- I-21 Typical Point-of Connection Layout
- I-22 Typical Booster Pump Assembly
- I-23 Typical Master Valve Assembly
- I-24 Typical Flow Sensor Assembly
- I-25 Typical Central Control Unit (CCU) Installation (Indoors)
- I-26 Typical Irrigation Head Layout for 133% Overlap
- I-27 Typical Point Source Bubbler Assembly

SECTION L: DETAILS

- [I-28 Typical Drip Remove Control Valve](#)
- [I-29 Typical Remote Control Anti-Siphon Valve](#)
- [I-30 Typical Atmospheric Vacuum Breaker Installer on Uphill Slope](#)
- [I-31 Typical Drip Remote Control Anti-Siphon Valve](#)
- [I-32 Typical Single Outlet Drip Emitter Assembly](#)
- [I-33 Typical Multi-Outlet Drip Emitter Assembly](#)
- [I-34 Typical Buried In-Line Drip Emitter Tubing](#)
- [I-35 Irrigation Information Chart](#)
- [I-36 Typical Automatic Controller with Electric Meter \(Outdoors\)](#)
- [I-37 Typical Thrust Block for Plastic Pipe](#)
- [I-38 Typical Remote Control Valve-above ground](#)

Planting

- [P-1 Typical Tree Planting \(Flat\)](#)
- [P-2 Typical Tree Planting \(Slope\)](#)
- [P-3 Typical Tree Guying \(36" Box & Larger\)](#)
- [P-4 Typical Tree Triple-Staking \(36" Box Size & Larger\)](#)
- [P-5 Typical Shrub Planting \(Slope\)](#)
- [P-6 Typical Shrub Planting](#)
- [P-7 Typical Vine Planting](#)
- [P-8 Typical Groundcover Planting, Triangular Spacing](#)
- [P-9 Tree and/or Shrub Quantities Equation Chart](#)

Details in Tiff format**Hardscape**

<u>LC-1</u>	<u>Concrete Mow Strip</u>
<u>LC-2</u>	<u>Typical Decomposed Granite Paving</u>
<u>LC-3A</u>	<u>Typical Median Stamped/Colored Concrete Paving</u>
<u>LC-3B</u>	<u>Typical Median Stamped Concrete Paving</u>
<u>LC-3C</u>	<u>Typical Median Concrete Instructions</u>
<u>LC-4</u>	<u>Typical Plastic Turf Header</u>
<u>LC-5</u>	<u>Typical Linear Tree Root Barrier</u>

Irrigation

<u>I-1</u>	<u>Automatic Controller with Top-load Enclosure (Outdoor)</u>
<u>I-2</u>	<u>Electric Meter Enclosure (Outdoor)</u>
<u>I-3</u>	<u>Typical Remote Control Valve (Straight Type)</u>
<u>I-4</u>	<u>Typical Remote Control Valve (Angle Type)</u>
<u>I-5</u>	<u>Typical Quick-Coupling Valve</u>
<u>I-6</u>	<u>Typical Threaded Gate or Ball Valve (3" Size or Smaller)</u>
<u>I-7</u>	<u>Typical Backflow Preventer inside Enclosure</u>
<u>I-8</u>	<u>Typical Tree Well Bubbler</u>
<u>I-9</u>	<u>Deleted</u>
<u>I-10</u>	<u>Typical 12" Pop-up Shrub Head (Side Gated)</u>
<u>I-11</u>	<u>Typical 12" Pop-up Shrub Head (Bottom Feed)</u>
<u>I-12</u>	<u>Typical Lawn Spray Head Assembly</u>
<u>I-13</u>	<u>Typical Lawn Rotor Head (Large)</u>
<u>I-14</u>	<u>Typical General Ditching</u>
<u>I-15</u>	<u>Typical Air and Water Relief Valve</u>
<u>I-16</u>	<u>Typical Automatic Controller (Indoors)</u>
<u>I-17</u>	<u>Maxicom Grounding Grid Assembly</u>
<u>I-18</u>	<u>Typical Automatic Controller with Front Load Enclosure</u>
<u>I-19</u>	<u>Typical Automatic Controller with Front-Load and Concrete pad</u>
<u>I-20</u>	<u>Typical Automatic Controller with Top-Load Enclosure & Quick Pad</u>
<u>I-21</u>	<u>Typical Point-of Connection Layout</u>
<u>I-22</u>	<u>Typical Booster Pump Assembly</u>
<u>I-23</u>	<u>Typical Master Valve Assembly</u>
<u>I-24</u>	<u>Typical Flow Sensor Assembly</u>
<u>I-25</u>	<u>Typical Central Control Unit (CCU) Installation (Indoors)</u>
<u>I-26</u>	<u>Typical Irrigation Head Layout for 133% Overlap</u>
<u>I-27</u>	<u>Typical Point Source Bubbler Assembly</u>

SECTION L: DETAILS

- [I-28 Typical Drip Remove Control Valve](#)
- [I-29 Typical Remote Control Anti-Siphon Valve](#)
- [I-30 Typical Atmospheric Vacuum Breaker Installer on Uphill Slope](#)
- [I-31 Typical Drip Remote Control Anti-Siphon Valve](#)
- [I-32 Typical Single Outlet Drip Emitter Assembly](#)
- [I-33 Typical Multi-Outlet Drip Emitter Assembly](#)
- [I-34 Typical Buried In-Line Drip Emitter Tubing](#)
- [I-35 Irrigation Information Chart](#)
- [I-36 Typical Automatic Controller with Electric Meter \(Outdoors\)](#)
- [I-37 Typical Thrust Block for Plastic Pipe](#)
- [I-38 Typical Remote Control Valve-above ground](#)

Planting

- [P-1 Typical Tree Planting \(Flat\)](#)
- [P-2 Typical Tree Planting \(Slope\)](#)
- [P-3 Typical Tree Guying \(36" Box & Larger\)](#)
- [P-4 Typical Tree Triple-Staking \(36" Box Size & Larger\)](#)
- [P-5 Typical Shrub Planting \(Slope\)](#)
- [P-6 Typical Shrub Planting](#)
- [P-7 Typical Vine Planting](#)
- [P-8 Typical Groundcover Planting, Triangular Spacing](#)
- [P-9 Tree and/or Shrub Quantities Equation Chart](#)

SECTION M: SAMPLE TITLE SHEETS

Please note that the .DWG files need to use the included [Palmdale1.ctb](#) file to have the line weights match the drawing if you are going to download and utilize AutoCAD.

There are PDF files available to download if you just want to view what our typical title sheets and note sheets look like.

The DWG files require AutoCAD to open. If you are unable to view them on-line, they are available in the zip folder for downloading and use in AutoCAD. Please be aware that PDF's details do not download and view well in AutoCAD. They need to be converted to Tiff files and then downloaded. There are Tiff detail files available in the download zip folder for use.

[City Project or Landscape Maintenance District Title Sheet DWG file](#)

[City Project or Landscape Maintenance District Title Sheet PDF file](#)

[City Project or Landscape Maintenance District Note Sheet DWG file](#)

[City Project or Landscape Maintenance District Note Sheet PDF file](#)

[Commercial Project Title Sheet DWG file](#)

[Commercial Project Title Sheet PDF file](#)

[Commercial Project City Notes Sheet DWG file](#)

[Commercial Project City Notes Sheet PDF file](#)

[Homeowners Association Project Title Sheet DWG file](#)

[Homeowners Association Project Title Sheet PDF file](#)

[Homeowners Association Project Notes Sheet DWG file](#)

[Homeowners Association Project Notes Sheet PDF file](#)

Residential Tract Development Projects cover the following plans

1. Typical Front yards and Street Tree Plan, or
2. Models Homes, or
3. Interior Slope Erosion Control Plans
4. Fuel Modification Plans

[Residential Tract Development Project Title Sheet DWG file](#)

[Residential Tract Development Project Title Sheet PDF file](#)

[Residential Tract Development Project Notes Sheet DWG file](#)

[Residential Tract Development Project Notes Sheet PDF file](#)

SECTION N: APPENDIX A:**Reference Evapotranspiration (ETo) Table for the City of Palmdale, Los Angeles County, California**

<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>July</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Annual ETo</i>
2.0	2.6	4.6	6.2	7.3	8.9	9.8	9.0	6.5	4.7	2.7	2.1	66.4

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. 4) Determining Daily Reference Evapotranspiration, Cooperative Extension UC Division of Agriculture and Natural Resources (1987), Publication Leaflet 21426

Section N - Appendix B – Landscape Documentation Package

Water Efficient Landscape Worksheet – Page 1 of 11

Please complete the entire worksheet, as it is part of the Landscape Documentation Package that is required to be submitted with the plans per Ordinance # 1362.

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 (optional)	Coordinates

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)

Page 2 of 11 of the Water Efficient Work sheet

Water supply type: - Please check all that apply.

- Potable water
- Recycled Water
- Graywater
- Groundwater or Well Water
- Mixed Use
- Other_____

Project Type: Please check only one

- Public or community facility (i.e., park, playground, etc.)
- Commercial
- Industrial
- Institutional (i.e., school, etc.)
- Other_____
- Single Family Residence
- Multi-Family Residential
- Model Home
- Mixed Use

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

1. Project Applicant

Name	Telephone and Fax Number	
Title	Email address	
Company	Street Address	
City	State	Zip Code

2. Property Owner

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

3. Licensed Landscape Architect

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

Page 3 of 11 of the Water Efficient Work Sheet**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	
State License #	City of Palmdale License #	
Company	Street Address	
City	State	Zip

6. Landscape Maintenance Contractor (if known)

Name	Telephone #	
	Fax #	
Title	Email address	
State License #	City of Palmdale 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	
	State	Zip Code

Page 4 of 11 of the Water Efficient Work Sheet

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 City or local retail water purveyor on the landscape 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 plan? _____

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

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

Page 5 of 11 of the Water Efficient Work Sheet

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

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

(9) How would 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 plant lists provided by the City of Palmdale?

Page 6 of 11 of Water Efficient Worksheet

SECTION C. Water Budget Calculation

Section C1. Maximum Applied Water Allowance

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

$$MAWA = (ET_o) (0.8) (LA) (0.62)$$

- MAWA = Maximum Applied Water Allowance (gallons per year)
- ET_o = Reference Evapotranspiration (inches per year)
- 0.8 = ET Adjustment Factor
- LA = Landscaped Area (square feet)
- 0.62 = Conversion factor (to gallons)

Maximum Applied Water Allowance = _____ gallons

Show calculations:

Recycled or Blended Water information

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 Palmdale does not receive enough reliable rainfall in any given year to utilize this information.

Page 7 of 11 of the Water Efficient Work Sheet

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:

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

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

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

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

- i = hydrozone number
- n = total number of hydrozones

Estimated Total Water Use= _____gallons

Show calculations:

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

Page 8 of 11 of Water Efficient Work Sheets

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.

**Example Page only for Water Efficient Worksheet –
Do not include in final submittal to City or Water Purveyor**

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	1040	10.5%
1	4	CST	Spray	496	5.0%
1	5	LW	Drip	600	6.1%
1	6	CST	Spray	1600	16.2%
1	7	LW	Drip	724	7.3%
1	8	MW/LW	Drip	1852	18.8%
2	1	CST	Spray	1600	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	3696	37.0
Warm Season Turf	0	0
High Water Use Plants	355	3.6
Moderate Water Use Plants	0	0
Low Water Use Plants	3692	37.6
High and Medium Water Mix	275	2.3
Medium and Low Water Mix	1852	18.7
Total	9870	100%

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 on Date: _____

Notes: _____

Denied on Date: _____

Notes:

Comments _____

APPENDIX C -CERTIFICATE OF COMPLETION - Page 1 of 3

See ordinance # 1362 Section 14.05.051, Section 14.05.052, and Section 14.05.061 for details on how to comply with the 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 & LSP # _____

Project Applicant _____

Project Address and Location

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

Please answer the questions below:

1. Did you submit a Landscape Documentation Package to the City of Palmdale? Yes No
2. Was your Landscape Documentation Package approved by the City? 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:

<input type="checkbox"/>	The preliminary field observation of the irrigation system or plumbing, prior to backfilling, is completed. Date of preliminary field observation: _____
<input type="checkbox"/>	Date of final field observation by project applicant: _____
<input type="checkbox"/>	The plant materials are installed as specified
<input type="checkbox"/>	The Irrigation system is designed as specified.
<input type="checkbox"/>	If applicable, the dual distribution system for recycled water is installed as specified.
<input type="checkbox"/>	There is minimal run off or overspray from the irrigation system.
<input type="checkbox"/>	The irrigation schedule is submitted for the plant establishment period.
<input type="checkbox"/>	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.

Page 2 of 3 -Certificate of Completion

Fill in any additional criteria or specifications from the ordinance	
<input type="checkbox"/>	

Comments:

SECTION C IRRIGATION (WATERING) SCHEDULE

Attach the irrigation schedule per ordinance Section 14.05.062

SECTION D. LANDSCAPE IRRIGATION AUDIT REPORT

Attach the Landscape Irrigation Audit Report per ordinance Section 14.05.064

SECTION E. SCHEDULE OF LANDSCAPE IRRIGATION AUDITS

Attach the schedule of Landscape Irrigation Audits per ordinance Section 14.05.064

SECTION F. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE

Attach the schedule of Landscape and Irrigation Maintenance per ordinance Section 14.05.063

SECTION G. SIGNATURES

CONTRACTOR

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

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

Page 3 of 3 -Certificate of Completion

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 Ordinance # 1362, Water Efficient Landscape, and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape Documentation Package.”

Signature of Landscape Architect/Certified Irrigation Designer/ Landscape Contractor	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 certify 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.”

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

End of Certificate of Completion

Appendix D: Effective Precipitation Disclosure Statement

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

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

A. 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

$$\text{MAWA} = (\text{ET}_o) (0.8) (\text{LA}) (0.62)$$

MAWA= Maximum Applied Water Allowance (gallons per year)
ET_o = Reference Evapotranspiration (inches per year)
.08 = ET Adjustment Factor
LA = Landscaped Area (square feet)
0.62 = Conversion factor

Estimated Water Use (for a Hydrozone)

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

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

APPENDIX F –Miscellaneous Documentation

These documents are located directly after this page:

Declaration of Substandard Landscape Removal Inspection Sheet

Landscape Plan check Submittal Requirements Sheet

Plan check sheets

List of revisions

Water Audit Checklist

Bubbler-Drip-Microspray System Data Sheet

The following are links to documents that might be needed:

[Landscape Maintenance District Map PDF](#)

[Landscape Maintenance District Map Sample word file](#)

[Landscape Maintenance District Map Exhibit Word file](#)

[Without map inserted](#)

[Landscape Maintenance District Irrigation System CCU](#)

[request form](#)

SECTION N: APPENDIX F – MISCELLANEOUS DOCUMENTATION
SUBSTANDARD LANDSCAPE CHECKLIST

City of Palmdale Ordinance # 1362 - Water Efficient Landscape Checklist for Single Family Residence - Landscape Permit and Preconstruction Meeting required. Call 661-267-5272 for information; 661-267-5255 for inspection - 24 hours in advance			
	Inspection Item	Comments	Y/N
	<u>Irrigation System</u>		
1	SWAT tested ET controller installed - list brand name in next column/ or ET Manager Module with existing irrigation clock		
2	Point source irrigation utilized with all spray irrigation removed		
3	Irrigation designed by hydrozone		
4	Separate irrigation valve for trees		
5	Deep water wells with pressure compensating bubblers installed for trees (2 per tree)		
6	Proper backflow protection		
7	Irrigation schedule provided for first two years of irrigation		
	<u>Plant Material</u>		
1	No lawn in front yard - limited use of artificial sod okay		
2	60% coverage of yard with living material when full grown		
3	Plants from City of Palmdale approved plant list		
4	Plants grouped into hydrozones for water use and weather exposure/microclimate		
5	2" of mulch over entire yard - no bare dirt allowed		
6	Permeable weed barrier beneath mulch		
7	Limited use of bark mulch - no bark mulch in right of way		
8	Do existing trees meet City standards?		
9	Tree from City of Palmdale's approved tree list in front yard located at 15 feet behind face of curb.		
10	If a corner lot, 2 trees planted in 12 foot right of way planter from the City of Palmdale approved tree list		
<p style="text-align: center;">Signature of the licensed landscape contractor who designed and installed the irrigation and landscaping: "I have agreed to comply with the criteria and specifications of the water efficient landscape ordinance # 1362, and I have applied them accordingly for the efficient use of water in the landscape design plan."</p>			
	Signed:		
	Name of Company and State License #:	City of Palmdale Business License Number:	
	City of Palmdale Inspectors name and signature	Date of Inspection	

**LANDSCAPE PLAN CHECK LIST
SUBMITTAL REQUIREMENTS**

for

Over the Counter Submittals

Electronic Plan Check Available through ProjectDox

Contact Engineering Department 661-267-5272 for further information

- { } Prints folded to 9" x 12".
- { } Current Grading Plan. – Landscape Plans must be submitted before second grading plan check will be processed. Must have approved grading plan before final approval.
- { } Approved Tentative Tract Map and/or Approved Site Plan.
- { } Final Conditions of Approval.
- { } Landscape Documentation Package
- { } Landscape and Irrigation Plans. (3 sets of plans for Capital Improvement projects and Landscape Maintenance Districts – all other plans – 2 sets).
- { } Landscape Maintenance District plan must have a District Diagram Map – see Section L for detail.
- { } Provide a copy of the current Landscape excel sheet for plan check and Inspection fees. Excel sheet is available on the City website or email a request for the form to cbrown@cityofpalmdale.org.
- { } Plan check fees.

TITLE SHEET PLAN CHECK

- { } 24" X 36" Sheet Size.
- { } Location Map - project location, major cross streets, north arrow and scale.
- { } Index Map - street configuration, lot configuration and numbers, project boundaries, Landscape Maintenance District areas, street names, index of sheets, north arrow, scale = 1" 200'.
- { } Title Block - tract number, tentative tract number if applicable, phase numbers if applicable, Landscape Maintenance District area number, Lsp #, CP#, if applicable.
- { } Landscape Architects seal, expiration, original signature and date signed.
- { } Name, address and telephone of Landscape Architect.
- { } Name, address and telephone number of the developer – list contact name and phone number for contact person.
- { } Approval block.
- { } Revision block.
- { } Current City General Notes – check City website for current notes.
- { } Complete list of Construction Notes.
- { } Title block.

SECTION N: APPENDIX F – MISCELLANEOUS DOCUMENTATION
LANDSCAPE PLAN CHECK LIST
(LANDSCAPE PLAN)

- { } Precise location of all utilities, structural elements (including walls), hardscape, existing vegetation and topographic conditions (expressed as slope gradients) within the landscaped areas.
- { } All existing and proposed easements.
- { } Top and toe of all cut and fill slopes.
- { } Signature block for plan checker.
- { } North arrow and scale, 1" = 20' minimum, include bar scale.

IRRIGATION PLAN CHECK LIST

- { } Identification of water conservation design approach.
- { } Fully automatic irrigation system.
- { } Landscape Documentation Package complete.
- { } Worst Case Pressure Loss calculations on plan.
- { } Proper system regulation listed such as booster pumps, or pressure regulators.
- { } Proper irrigation coverage where applicable.
- { } Required retaining walls or curbs to protect irrigation devices on slopes.
- { } Backflow device – reference to detail, winterize, approved enclosure, padlock.
- { } PVC Pipe and fittings – reference to detail, class, schedule, cover, joints, thrust blocks.
- { } Sprinkler Heads – reference to detail, double ell swing joints, pop-ups, screw adjustment, low angle nozzles
- { } Bubblers – reference to detail, pressure compensating, separate valve for trees.
- { } Drip Irrigation – reference to detail, pressure compensating, drip valve assembly specified.
- { } Valves (electric control valves) – Rain Bird EFB-GB-PRS for LMD, PEB-PRS for City projects, or equal, correct valve boxes, reference to detail.
- { } Valves (quick couplers) – spacing, red brass, valve boxes, reference to details.
- { } Wiring – reference to detail, trenching location, connections, sizing, continuous runs, colors.
- { } Automatic Controller – Rain Bird Maxicom Central Control for all City projects; Commercial Grade ET Controller for all others, approved enclosure, location, padlocks, location on plan, reference to detail.
- { } Detention/Retention Basin – separate valves from landscape on outside of basin, bubblers to trees on separate valves, separate valves for sprinkler heads on slopes (i.e. top and toe of slope on separate valves), location of heads, main and lateral lines shown on plan.
- { } City of Palmdale irrigation notes.
- { } City of Palmdale irrigation details.

LANDSCAPE PLAN CHECK LIST PLANTING PLAN – Page 1 of 2

- { } Statement of design approach to water conservation.
- { } City of Palmdale Recommended Plant List selections.
- { } A table listing plant material including the plant symbols, common and botanical names, sizes, spacing, quantities and other remarks as appropriate
- { } 60% coverage of plant material for the front yard is required for Single Family Homes.
- { } Location of plant material shown at approximately 75% of the mature size of the plant material
- { } All proposed lawn and ground cover areas must be identified. Lawn is only allowed in active recreational areas of multi-family homes. No sod in commercial, industrial or typical front yards of new single-family homes.
- { } Trees selected from the approved Tree List. – See Section K.
- {] Trees - minimum 15 gallon size, reference details.
- { } Trees – 20” of all trees 24” box or larger for LMD’s and Capital Improvement projects. All other projects must meet the conditions of approval for the project.
- { } Trees – located less than 7’ from adjacent property lines, 50’ from beginning of curb returns on approach to an intersection, 15’ from end of curb return on an exit side of curb return, 20’ from lamp standards, 10’ from fire hydrants and driveways, 5’ from service walks, water meters and drain pipes.
- { } Trees – Front yard trees located 15 feet behind face of curb. The two (2) side yard trees centered in the twelve-foot right-of- way parkway.
- { } Shrubs – minimum of 5 gallon size, reference planting detail.
- { } Shrubs – located a minimum of 36” from all sidewalks when the species specified cannot tolerate extensive trimming. (Required for LMD and City Capital Improvement projects only – suggested for all other projects.)
- { } Turf – drought tolerant species, slope limits, provided as sod – limited use of artificial turf is allowed.
- { } Ground cover – type, spacing, reference detail.
- { } Vines – a minimum of 5 gallon size, reference detail.

Planting Plan check list– Page 2

- { } Hydroseed – approved seed mix and material for detention/retention basins only. See Section H for hydroseed specifications.
- { } Location of all areas designated as recreation areas.
- { } Copy of soils analysis and recommendations for initial property, and follow-up analysis on property after grading (if at all possible).
- { } Soil amendments. and plant tablets
- { } Hydrozone maps of plant material showing water usage and grouping of plant material.
- { } Concrete or compacted walkway access from backyard to the driveway.
- { } Tree staking and guying – materials, size of material, reference detail.
- { } Mulch 2” required, specify what type of mulch is being utilized. No bark mulch in right of way; rock and stabilized decomposed granite preferred.
- { } Porous weed fabric specified beneath all mulch except stabilized decomposed granite.
- { } Root Barriers – type, reference detail.
- { } Erosion Control Matting – type, location.
- { } Mow strips and headers – type, location, reference detail.
- { } Arbor Guards – type, required in turf areas.
- { } Slopes – shall not exceed 3:1, required treatment, level area at toe of slope.
- { } Positive drainage.
- { } Detention/retention basin – interior planting (hydroseed and trees), buffer between basin and back of sidewalk.
- { } Design elements such as boulders, pots, raised walls, mounding, cobbles, swales, etc. to provide aesthetics features and interest to the project.
- () City of Palmdale planting notes
- () City of Palmdale planting details.

SECTION N: APPENDIX F – MISCELLANEOUS DOCUMENTATION
SLOPE EROSION CONTROL

Plan check Sheet

- { } Permanent Slope and Erosion Control is required on all slopes greater than 3' in vertical height and steeper than 5:1.
- { } Erosion control blankets on approved list.
- { } Ground cover – approved species, spacing, reference detail.
- { } Trees and Shrubs – approved species, spacing, reference detail.
- { } Irrigation – automatic, approved backflow device, piping, heads, reference details.

REVISIONS

1-22-08:

Page 7 – Commercial and Residential ET based controllers added

Page 68 – Detention Basin Landscaping Requirements were added back in – accidentally removed during editing.

1-25-08 – Linked Tiff and DWG files to word document to make them viewable

1-31-08 – corrected page numbers

2-06-08 – Corrected erosion control section to include the North American Green blankets and notice no Jute netting approved.

10-15-08 Updated entire document to comply with Water Ordinance # 1362 and electronic plan checking. Entire document accepted by City Council.

07/01/2010:

- Section G (14 & 15 – trees) – Residential Housing – corrected erroneous numbering and clarified tree planting requirements to be placed on plans.
- Corrected plan check sheets to remove the requirement for landscape plans to be reviewed and signed off by a certified water auditor
- Corrected Landscape Documentation Package –Page 6 of Water Budget Calculations Sheets C1- Maximum Applied Water Allowance – incorrect Conversion factor which was previous listed as .062 and should be .62
- Updated the Substandard Landscape Checklist in Section N Appendix F to clarify weed fabric; types of mulch; substandard tree & shrub removal; must pull landscape permit from engineering and have a preconstruction meeting.
- Added the requirement for Tract Housing to have a concrete or compacted access from the backyard gate to the front driveway.
- Clarified in all sections that bark mulch will not be allowed in the public right of way at all. Limited use of bark mulch on any project – if in a housing project – limited to planters adjacent to the house. Stabilized decomposed granite and rock mulch are the preferred mulches at this time.
- Reviewed and updated the approved plant list with Neal Weisenberger at the Antelope Valley College.
- Eliminated Rosemary from the slope and erosion control list of approved plant material at the request of the maintenance department.
- Remove pine trees from all Landscape Maintenance Districts and detention basins due to the pine needle problems and tree root invasion. Will only be allowed in parks and on large slopes from now on.
- Cleared up typos and clarified issues throughout the document.

- Added Irrigation Auditor Checklist and required paperwork
- Revised the erosion control standards for all projects to exclude the requirement for Elderica Pine trees to be placed in basins. Elderica Pine trees will now be banned for all Landscape Maintenance Districts and City Projects, unless there is a very large slope or it is to be located in a City Park area.
- Revised all title and note sheets to reflect changes made in the document.