Landscape Standards

City of Menifee
29714 Haun Road
Menifee, CA 92586
Phone: (951) 672-6777

March 2015

THIS PAGE INTENTIALLY LEFT BLANK

TABLE OF CONTENTS

SECTION 1. INTRODUCTION

These landscape standards are intended to inform developers, landscape architects, architects, planners, irrigation designers, project applicants, contractors, and the general public regarding requirements and procedures within the City of Menifee. The City conducts compliance reviews for improvements in private developments and public rights–of–way. Plans subject to review include planting plans, irrigation plans, hardscape plans, multi-purpose trails, fencing, thematic signage, median paving, and play areas.

A. PURPOSE

The City promotes sustainable landscapes that enhance community character; improve health and livability; protect and restore natural ecosystems; promote efficient use of water; minimize soil erosion; and diminish wildland fire danger. The landscape standards provide a framework for developments to successfully achieve these goals.

B. APPLICABILITY

1. Private Development Projects

   These Landscape Standards are applicable to private commercial, industrial, and residential developments (single family and multi-family), as well as model homes in new residential developments.

   Applicant shall submit complete landscape construction documents (plans, details, specifications, etc.) for projects that require landscape improvements as a condition of approval. Submittals may be required for model homes if so conditioned.

   1.1 Landscape design and construction documents shall be prepared by, or under direct supervision of, registered Landscape Architects (State of California) and shall bear Landscape Architects' signature and seal (unless specifically waived by the City).

   1.2 Five bond print sets of construction documents, plus fees and deposits, shall be submitted for review and approval.

   1.3 Private landscape improvements shall be bonded before final plan approval.

2. Public Improvement Projects

   2.1 These Landscape Standards are applicable to improvements including Community Facility District (CFD) and Capital Improvement Program (CIP) projects such as parks, right–of–way landscapes, open space areas, and slopes.

2.2 Plans shall be prepared by, or under direct supervision of, California registered Landscape Architects. Plans shall bear Landscape Architects' seal and signature.

2.3 If Community Facility District areas are within project boundaries, then construction documents for those areas shall be prepared and submitted separately from those for private developments.

2.4 Preliminary landscape plans for public improvement projects shall be reviewed and approved by Engineering Department and Community Services Department.

2.5 Community Facility District (CFD) improvements shall be bonded before final plan approval.

2.6 Five bond print sets of construction documents, plus fees and deposits, shall be submitted for review and approval.

3. Landscape Area Thresholds and Exemptions

The water–efficient landscape requirements contained in these standards shall apply to properties and projects in accordance with the City of Menifee "Landscape Water Use Efficiency Requirements" Ordinance No. 2009-61 (MMC Chapter 15.04) regarding landscape area thresholds and exemptions.

C. REGULATING DOCUMENTS

1. Legislation

1.1. California Building Code, including Title 24

1.2. State of California Assembly Bill (AB) 1881

1.3. Americans with Disabilities Act (ADA)

2. City of Menifee

2.1. City of Menifee Municipal Code

2.2. City of Menifee "Landscape Water Use Efficiency Requirements" Ordinance No. 2009–61 (MMC Chapter 15.04)

2.3. Standard Specifications for Public Works Construction ("Greenbook", latest adopted edition)

D. GENERAL PLAN POLICIES

The City of Menifee promotes landscape improvements that enhance community character; improve health and livability; enhance the City's economic viability, protect and restore natural ecosystems; and encourage efficient use of water by basing landscape design and installation on the following goals and policies:

Aesthetics: Landscapes should create a positive image by creating a unified and attractive community identity that complements the character of the City's distinctive communities. Similarly, landscaping should be used to appropriately buffer dissimilar land uses so that differences in type and intensity do not conflict. In both residential and commercial areas landscaping should recognize, preserve, and enhance the aesthetic value of the city's natural, scenic and landscape corridors.

Function: Landscapes should be functionally designed to create and enhance the visual character of the residential, commercial and industrial areas including the connecting roadway corridors. The standards contained within these guidelines are designed to insure high quality landscaping that promotes the efficient use of water, minimizes soil erosion and diminishes wildland fire dangers.

Economics: Landscapes should be designed for the allocated budgetary considerations. The design should incorporate low-maintenance components and the judicious use of water. The cost of parkways, public landscaped areas, and landscape corridors should be accommodated through Community Facility Districts, Lighting & Landscape Maintenance Districts, or similar assessment programs.

Health and Safety: Landscape designs should incorporate plant materials that minimize the risk from wildland fires, provide visual buffers between conflicting land uses, comply with the latest building and construction codes, and incorporate stormwater regulations. The General Plan also encourages a comprehensive network of hiking, biking, and equestrian recreation trails that provide a connection to the various land uses that provides safe passage and does not negatively impact the natural environment or cultural resources.

1. GENERAL PLAN POLICIES

- CD-1.3: Strengthen the identity of individual neighborhoods/communities with entry monuments, flags, street signs, and/or special tree streets, landscaping, and lighting.

- CD-1.4**:** Provide special landscaping and decorative monument signage in order to highlight arrival and departure from the city.

- CD-2.1**:** Require open space and recreation buffers, increased setbacks/step backs, landscape screening, sensitive site planning, and/or other buffer techniques, to the extent possible, between rural/equestrian-oriented land uses and dissimilar uses.

- CD-3: Design Quality. Projects, developments, and public spaces that visually enhance the character of the community and are appropriately buffered from dissimilar land uses so that differences in type and intensity do not conflict.

- CD-3.1: Preserve positive characteristics and unique features of a site during the design and development of a new project; the relationship to scale and character of adjacent uses should be considered.

- CD-3.2**:** Maintain and incorporate the city's natural amenities, including its hillsides, indigenous vegetation, and rock outcroppings, within proposed projects.

- CD-3.17: Encourage the use of creative landscape design to create visual interest and reduce conflicts between different land uses.

- CD-3.18: Require setbacks and other design elements to buffer residential units to the extent possible from the impacts of abutting roadway, commercial, agricultural, and industrial uses.

- CD-3.19: Design walls and fences that are well integrated in style with adjacent structures and terrain and utilize landscaping and vegetation materials to soften their appearance.

- CD-3.22: Incorporate visual buffers, including landscaping, equipment and storage area screening, and roof treatments, on properties abutting either Interstate 215 or residentially designated property.

- CD-3.9: Utilize Crime Prevention through Environmental Design (CPTED) techniques and defensible space design concepts to enhance community safety.

- CD-4: Corridors and Scenic Resources. Recognize, preserve, and enhance the aesthetic value of the city's enhanced landscape corridors and scenic corridors.

- CD-6: Community Design Features. Attractive landscaping, lighting, and signage that conveys a positive image of the community.

- LU-1.4**:** Preserve, protect, and enhance established rural, estate, and residential neighborhoods by providing sensitive and well-designed transitions (building design, landscape, etc.) between these neighborhoods and adjoining areas.

- LU-1.8**:** Ensure new development is carefully designed to avoid or incorporate natural features, including washes, creeks, and hillsides.

- OCS-2.1**:** Develop recreational trails for hiking, biking, and equestrian use throughout the city, making them, to the extent feasible, accessible to people of different neighborhoods, ages, and abilities.

SECTION 2. LANDSCAPE PLAN SUBMITTAL REQUIREMENTS

A. GENERAL REVIEW PROCESS

1. Reviews by the City are required at the preliminary conceptual design stage to insure that projects are in general conformance to City Municipal Code, Conditions of Approval, and other applicable regulatory requirements.

2. Reviews by the City are required at the Construction Document stage to verify that projects are in general conformance to discretionary approvals, approved conceptual preliminary landscape plans, Conditions of Approval, and City Municipal Code.

B. PRELIMINARY LANDSCAPE PLAN SUBMITTAL

1. Existing Conditions Plan

1.1 "Existing Conditions" plans shall be submitted with project applications and conceptual landscape plans for development review, unless waived by the City.

1.2 Existing vegetation (native, naturalized, and ornamental trees, shrubs and ground cover areas, street trees and other parkway plantings) shall be clearly shown. Living trees with trunk diameters in excess of three inches shall be surveyed and plotted on plan.

1.3 Existing on–site trees shall be retained unless approved for removal by the City of Menifee. Living trees that are approved for removal shall be replaced as required in the project conditions of approval. Replacement trees, including container sizes and quantities, shall be clearly indicated on the landscape construction documents.

1.4 Plan shall indicate areas to remain in natural state (undisturbed by grading and construction operations).

1.5 Plan shall indicate location, type, and quantity of vegetation to be removed.

1.6 Plan shall indicate existing topography and significant natural features.

1.7 Plan shall indicate buildings, trails, walks, fences, walls, and other existing improvements.

2. Landscape Concept Plans for all projects shall include, but not be limited to, the following items:

2.1 Five bond prints sets of landscape concept plans with conceptual site plans and preliminary grading plans for project development.

2.2 Proposed slope gradients of 5:1 and greater shall be clearly shown.

2.3 Turf areas represented distinctly and separately from shrub, ground cover and mulched areas. Percentage of landscape area in turf shall be noted on plans.

2.4 Plant legends identifying proposed plant materials by botanical name, common name, graphic symbols, container sizes, spacing, and WUCOLS designation.

2.5 Notes describing types of irrigation system, with planting areas utilizing different types of irrigation (i.e., drip vs. spray) clearly identified.

2.6 Description of landscape development and design procedures to achieve water conservation and efficient landscape water management, including landscape water use calculations (Maximum Applied Water Allowance and Estimated Annual Water Use).

C. LANDSCAPE CONSTRUCTION DOCUMENT SUBMITTAL

1. General Requirements

1.1 The following items are required for a complete construction document submittal for review and approval.

a. Five bond print sets required by the City for first plan check including:

- Complete landscape plans, specifications, details, notes, etc.
- City Council resolution of approval
- Agricultural suitability soils analysis report—submitted prior to start of construction
- Irrigation pressure loss calculations (worst case condition) for each meter
- Bonding cost estimate for landscape improvements

b. Landscape plans indicating easements, utilities, Fire Dept. connections, and all other improvements that may affect landscape construction as indicated on architectural and engineering plans.

c. First submittal of landscape plans shall include an estimate for bonding purposes, indicating total cost of landscape improvements. Landscape maintenance for one year shall be included as a separate line item in the estimate, unless requirement is waived by the City.

d. Approved Grading Plan, or current Grading Plan submittal, including water quality bioretention basins and required BMPs.

e. Approved architectural Site Plan, or current Site Plan submittal.

1.2 Second and subsequent review submittals to City shall consist of five sets of corrected bond prints and the original City redlined plan review sets.

1.3 After plan check is complete, final submittal to the City shall include following items:

a. Public Projects (CFD and public landscape improvement plans):
   - Wet signature mylar reproducibles (one set) to be kept by City for record purposes
   - Three bond sets of signed plans
   - One electronic scanned copy of the signed/approved plans (PDF format)

b. Private Development Projects:
   - Three sets of bond prints to be stamped/signed by City and kept for inspection and record purposes
   - One electronic scanned copy of the signed/approved plans (PDF format)

1.4 Landscape Architects' seal and signature

a. Registered license number and renewal date shall appear on construction documents.

b. Licensed contractors, working within classifications for which licenses were issued, may design systems and facilities only for work to be performed and supervised by those contractors. Requirements in this manual shall apply to such work.

1.5 Title block on each page shall contain the following information (use City standard Engineering Department title block on CFD, parks, and public improvement plans):

a. Project title, APN, and site address;

b. Tract number, tentative tract number, tentative map number, grading plan number, improvement plan number, CFD or Lighting & Landscape Maintenance District number, and other applicable reference numbers;

c. Name, address, telephone and license number of registered Landscape Architect.

1.6 CFD and Public Landscape Improvement Plans shall be prepared on City standard title block and border "D" size sheets measuring 24 inches by 36 inches.

1.7 An incomplete Construction Documents Submittal Package will be returned to Applicant. (Refer to submittal checklist at City plan intake counter)

1.8 Plans shall be prepared at one inch equal to ten feet (1 in. = 10 ft.) or one inch equal to twenty feet (1 in. = 20 ft.) minimum. If larger plan scales (40 scale and above) are proposed, the applicant shall obtain approval prior to plan submittal. Scale shall be clearly noted on each sheet.

1.9 North arrows shall appear on each sheet.

1.10 Match lines shall be shown clearly and labeled to provide easy plan reference.

1.11 Following items related to landscape construction shall appear on plans:

- Public rights–of–way
- Property lines, project limits, subdivision boundaries, lot numbers
- Building areas (existing and proposed)
- Paved areas (including street sidewalks)
- Walls, fences, gates, and trails (existing and proposed);
- Utilities, easements, streetlights, bus stops and fire hydrants as shown on public improvement plans;
- Electrical and water service Points of Connection for landscape construction.

1.12 Revisions to signed plans shall be reviewed and approved by the City and noted on each sheet prior to construction.

1.13 Text font size shall be 10 point minimum on CAD drawings and 12 point minimum for typewritten specifications.

2. Title Sheet Requirements

2.1 Project location/vicinity map with following information:

- Street configuration within or adjacent to tract or project
- Nearest arterial or highway intersection
- Street names
- North arrow

- Match lines, if applicable, and key map
- Site location
- Thomas Bros. map coordinates

2.2 Sheet index indicating Name & Number of each sheet in consecutive order.

2.3 General notes shall be included (not limited to the following):

Plans shall comply with City of Menifee "Landscape Water Use Efficiency Requirements" Ordinance 2009–61, MMC Chapter 15.04, and all other applicable municipal codes and ordinances.

Landscape work shall be in accordance with City of Menifee Development Standards and Codes for Landscape Improvements.

Contractor shall provide stormwater and non–stormwater pollution prevention measures and Best Management Practices in accordance with City of Menifee Grading Ordinance, Stormwater/Urban Runoff Ordinance, and other applicable codes and ordinances.

Contractor shall obtain an Encroachment Permit as determined by the City of Menifee Director of Public Works/City Engineer, for potholing or construction of improvements, including installation of required street trees, in public rights–of–way and City–held easements. Permits shall be reviewed and approved by the Department of Engineering.

Contractor shall obtain permits required to complete landscape improvements prior to start of construction.

California Public Utilities Code mandates that local utility companies are notified a minimum of two working days (48 hours) prior to start of construction. Contractor shall notify "DigAlert" (1-800-227-2600 or 811) prior to start of excavation in public rights–of–way and utility or City–held easements.

Contractor shall notify the Engineering Department and Community Development Department at least 48 hours (two working days) prior to starting construction.

A qualified soil testing laboratory shall perform soils tests for agricultural suitability at conclusion of final grading. Submit copy of agricultural suitability soil analysis report and recommendations to the City's representative prior to start of construction.

Contractor shall verify existing static water pressure at each point–of–connection prior to installing irrigation system. Verification shall be made with the Eastern Municipal Water District (EMWD).

Contractor shall provide irrigation system as–built drawings on mylar to City's representative prior to final acceptance. Contractor shall provide City with evidence of as–built plan submittal to Owner/Developer/HOA.

Landscaped areas shall be fully maintained in accordance with project conditions of approval on file with the City of Menifee.

Landscape improvements shall be completed, inspected and approved by the City prior to issuance of occupancy permits or Notice of Completion.

Prior to issuance of a certificate of occupancy, final landscape inspection, or acceptance of the project by the City, Property Owner and Landscape Architect shall sign and submit the required Certificate of Completion to the City of Menifee Community Development Department / Planning Division.

2.4 Total landscaped area, and percentage of landscaped area in turf, shall be noted on the title sheet.

2.5 On title sheet of CFD improvement plans, the Landscape Architect shall calculate and show the estimated value of the CFD improvements.

2.6 Title Sheet shall include Signature Block for Approval with signatures by the following:

a. Community Facilities Districts and Public Parks:
   - Director of Public Works/City Engineer
   - Director of Community Services
   - Consultant City Landscape Architect

b. Capital Improvement Projects:
   - Director of Public Works/City Engineer

c. For other projects requiring landscape plan review:
   - Consultant City Landscape Architect

2.7 Consultants providing landscape plan check services shall sign plans.

2.8 Title Sheet shall include Declaration of Responsible Charge and be signed by the Landscape Architect of Work.

3. DECLARATION OF RESPONSIBLE CHARGE

I hereby declare that I am the Landscape Architect of Work for this project, that I have exercised responsible charge over the design of the project as defined in Sections 5615 through 5683 of the California Business and Professions Code, and that the design is consistent with current standards.

I understand that the check of the project plans and specifications by the City of Menifee is confined to a review only and does not relieve me, as Landscape Architect of Work, of my responsibilities for project design. The plan check is not a determination of the technical adequacy of the design of these improvements.

The plans and specifications have been prepared in substantial conformance with all special conditions of approval related to landscape improvements.

I agree to comply with the requirements of MMC Chapter 15.04 and submit a complete Landscape Documentation Package.

Landscape Architect's Name: _____
Address: _____
Telephone No.: _____
Landscape Architect's Seal
(Affix and Sign/Date)

4. LANDSCAPE DOCUMENTATION PACKAGE: (MMC 15.04.050 Documentation Requirements)

An applicant proposing any new or rehabilitated landscape to which this chapter applies shall prepare and submit to the Community Development Director the following documentation along with an application and a fee as determined by resolution of the City Council.

A. Project information.
   1. Date of submission
   2. Applicant and applicant contact information
   3. Project owner and contact information
   4. Project address including parcel and lot numbers
   5. Total landscape area in square feet
   6. Project type (e.g., new, rehabilitated, public, private)
   7. Water supply (e.g., potable, well, recycled)
   8. Applicant signature and date with statement "I agree to comply with the requirements of MMC Chapter 15.04 and submit a complete Landscape Documentation Package"
   9. Information regarding recycled water, if any, as set out in 15.04.040

B. Planting plan. A planting plan shall meet the following requirements:
   1. The *Riverside County Guide to California Friendly Landscaping*

(*Landscaping Guide*) shall be used to assist with developing water efficient landscapes.

2. Applicants shall refer to and comply with the *City of Menifee General Plan* policies regarding use of landscaping for buffering, community design and enhanced landscape corridors.
3. Plant types shall be grouped together in regards to their water, soil, sun and shade requirements and in relationship to the buildings. Plants with different water needs shall be irrigated separately. Plants with the following classifications shall be grouped accordingly: high and moderate, moderate and low, low and very low. Deviation from these groupings shall not be permitted.
4. Trees for shade shall be provided for residential, commercial and industrial buildings, parking lots and open space areas. These trees can be deciduous or evergreen and are to be incorporated to provide natural cooling opportunities for the purpose of energy and water conservation.
5. Plants shall be placed in a manner considerate of solar orientation to maximize summer shade and winter solar gain.
6. Plant selection 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 Public Resources Code § 4291 (a) and (b). Fire–prone plant materials and highly flammable mulches shall be avoided.
7. Invasive species of plants shall be avoided especially near parks, buffers, greenbelts, water bodies, conservation areas and open spaces because of their potential to cause harm in to environmentally sensitive areas.
8. All exposed surfaces of non–turf areas within the developed landscape area shall be mulched with a minimum three–inch layer of material, except in areas with groundcover planted from flats where mulch depth shall be one and one–half inches.
9. Stabilizing mulching products shall be used on slopes.
10. Turf areas shall be used in response to functional needs and in compliance with the water budget.
11. Design retention/detention basins to be visually attractive and well integrated with any associated project and with adjacent land uses.
12. Decorative water features shall use recirculating water systems.
13. Where available, recycled water shall be used as the source for irrigation and decorative water features.
14. Identify and cite the following:
    - New and existing trees, shrubs, vines, ground covers, and turf areas within the proposed landscape area
    - Planting legend indicating all plant species by botanical name and common name, spacing, WUCOLS designation, and quantities of each type of plant by container size
    - Designation of hydrozones
    - Area, in square feet, devoted to landscaping and a breakdown of the total area by landscape hydrozones

- Property lines, easements, streets, and street names
- Building locations driveways, sidewalks, retaining walls, and other hardscape features
- Appropriate scale and north arrow
- Any special landscape areas
- Type of mulch and application depth
- Type and surface area of any water features
- Type and installation details of any applicable stormwater best management practices
- Planting specifications and details, including the recommendations from the soils analysis, if applicable
- Maximum Applied Water Allowance (MAWA):
  a. Planting plans shall be prepared using the following water budget formula:
     MAWA (in gallons) = (ETo)(0.62)[0.7 x LA+0.3 x SLA]
     Where:
     - ETo, is reference evapotranspiration (use 57.33)
     - SLA is the amount of special landscape area in square feet
     - LA is total landscape area (including the SLA) in square feet
  b. For the purposes of determining the maximum applied water allowance, average irrigation efficiency is assumed to be 0.71. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average irrigation efficiency of 0.71.
- Estimated Annual Water Use (EAWU):
  a. EAWU for a given hydrozone is calculated as follows:
     EAWU (in gallons) = (ETo)(0.62)[((PFxHA) / IE) + SLA]
     Where:
     - ETo, is reference evapotranspiration (use 57.33)
     - PF is plant factor
     - HA is hydrozone area in square feet
     - IE is irrigation efficiency (minimum 0.71)
     - SLA is the amount of special landscape area in square feet.
- Landscaping plans shall provide EAWU (in the same units as the MAWA) for each valve circuit in the irrigation hydrozone. The sum of all EAWU calculations shall not exceed the MAWA for the project.
- The plant factor used shall be from WUCOLS. The plant factor for low water use plants range from 0.1 to 0.3, for moderate water use plants range from 0.4 to 0.6, and for high water use plants range from 0.7 to 1.0.
- The plant factor calculation is based on the proportions of the respective plant water uses and their plant factor, or the plant factor of the higher water using plant is used.
- The surface area of water features shall be included in the high water use hydrozone area of the water budget calculation, and temporarily irrigated areas in the low water use hydrozone.

15. Planting plans and irrigation plans (division (C) below) shall be drawn at the same size and scale.
16. The planting plan shall be prepared by a landscape architect licensed by the State of California.

C. Irrigation plans. Irrigation plans shall meet the following requirements:

1. The *Riverside County Guide to California Friendly Landscaping* (*Landscaping Guide*) shall be used to assist the applicant in designing, constructing, and maintaining an efficient irrigation system.
2. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average irrigation efficiency of 0.71.
3. All irrigation systems shall be designed to prevent runoff, over–spray, low–head drainage and other similar conditions where water flows off site on to adjacent property, non–irrigated areas, walkways, roadways, or structures. Irrigation systems shall be designed, constructed, managed, and maintained to achieve as high an overall efficiency as possible. The irrigation system shall be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
4. Landscaped areas shall be provided with a smart irrigation controller which automatically adjusts the frequency and/or duration of irrigation events in response to changing weather conditions unless the use of the property otherwise prohibits use of a timer. The planting areas shall be grouped in relation to moisture control zones based on similarity of water requirements (i.e., turf separate from shrub and groundcover, full sun exposure areas separate from shade areas, top of slope separate from toe of slope). Additional water conservation technology may be required, where necessary, at the discretion of the Director of Community Development or City Engineer.
5. Water systems for common open space areas shall use non–potable water, if approved facilities are made available by the water purveyor. Provisions for the conversion to a non-potable water system shall be provided within the landscape plan. Water systems designed to utilize non–potable water shall be designed to meet all applicable standards of the California Regional Water Quality Control Board and the Riverside County Health Department.
6. Separate valves shall be provided for separate water use planting areas, so that plants with similar water needs are irrigated by the same irrigation valve. All installations shall rely on highly efficient state of the art irrigation systems to eliminate runoff and maximize irrigation efficiency as required by the Landscaping Guide.
7. Static water pressure, dynamic or operating pressure and flow reading of the water supply shall be measured. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements

shall be conducted at the installation.

8. The capacity of the irrigation system shall not exceed:
    a. The capacity required for peak water demand based on water budget calculations;
    b. Meter capacity; or
    c. Backflow preventer type and device capacity.
9. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer.
10. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
11. Non–turf areas on slopes greater than 25% shall be irrigated with drip irrigation or other low volume irrigation technology.
12. Long, narrow, or irregularly shaped areas including turf less than eight feet in width in any direction shall be irrigated with subsurface irrigation or low–volume irrigation technology.
13. Overhead irrigation shall not be permitted within 24 inches of any non–permeable surface. There are no restrictions on the irrigation system type if the landscape area is adjacent to permeable surfacing and no overspray and runoff occurs.
14. Overhead irrigation shall be limited to the hours of 8:00 p.m. to 9:00 a.m.
15. All irrigation systems shall be equipped with the following:
    a. A smart irrigation controller as defined in division (C)(4) above
    b. A rain–sensing device to prevent irrigation during rainy weather
    c. Anti–drain check valves installed at strategic points to minimize or prevent low–head drainage
    d. A manual shut–off valve shall be required as close as possible to the point of connection of the water supply, to minimize water loss in case of an emergency or routine repair
    e. A pressure regulator when the static water pressure is above or below the recommended operating pressure of the irrigation system
    f. Backflow prevention devices; and
    g. Riser protection components for all risers in high traffic areas
16. Dedicated landscape meters shall be required for all projects greater than 5,000 sq. ft. except single–family residences, or as required by the local water purveyor.
17. Irrigation design plans shall identify and cite the following:
    a. Hydrozones:
        - Each hydrozone shall be designated by number, letter or other designation
        - A hydrozone information table shall be prepared for each hydrozone
    b. The areas irrigated by each valve
    c. Irrigation point of connection (POC) to the water system
    d. Static water pressure at POC
    e. Location and size of water meter(s), service laterals, and backflow

preventers

f. Location, size, and type of all components of the irrigation system, including automatic controllers, main and lateral lines, valves, sprinkler heads and nozzles, pressure regulator, drip and low volume irrigation equipment
g. Total flow rate (gallons per minute), and design operating pressure (psi) for each overhead spray and bubbler circuit, and total flow rate (gallons per hour) and design operating pressure (psi) for each drip and low volume irrigation circuit
h. Precipitation rate (inches per hour) for each overhead spray circuit
i. Irrigation legend with the manufacturer name, model number, and general description for all specified equipment, separate symbols for all irrigation equipment with different spray patterns, spray radius, and precipitation rates
j. Irrigation system details for assembly and installation
k. Recommended irrigation schedule for each month, including number of irrigation days per week, number of start times (cycles) per day, minutes of run time per cycle, and estimated amount of applied irrigation water, expressed in gallons per month and gallons per year, for the established landscape; and
l. Irrigation design plans shall contain the following statement, "I agree to comply with the criteria of the ordinance and to apply them for the efficient use of water in the irrigation design plan"

18. For each valve, two irrigation schedules shall be prepared, one for the initial establishment period of six months and one for the established landscape, which incorporate the specific water needs of the plants and turf throughout the calendar year.
19. Irrigation plans and planting plans (division (B) above) shall be drawn at the same size and scale.

D. <u>Soil management plan requirements.</u>

1. After mass grading, the project applicant or his or her designee shall:
   a. Perform a preliminary site inspection
   b. Determine the appropriate level of soil sampling and sampling method needed to obtain representative soil sample(s)
   c. Conduct a soil probe test to determine if the soil in the landscape area has sufficient depth to support the intended plants; and
   d. Obtain appropriate soil sample(s)
2. The project applicant or his or her designee shall submit soil sample(s) to a qualified laboratory for analysis and recommendation. The soil analysis shall include:
   a. Soil texture
   b. Infiltration rate determined by laboratory test or soil texture infiltration rate tables
   c. pH and nutrient levels (N-P-K)

d. Total soluble salts
e. Sodium (SAR) and salinity (ECe)
f. Recommendations

3. The project applicant or his or her designee shall prepare documentation describing the following:
   a. Soil type
   b. Identification of limiting soil characteristics
   c. Identification of planned soil management actions to remediate limiting soil characteristics; and
   d. Submit the soil analysis report and documentation verifying implementation of soil analysis report recommendations to the City pursuant to the requirements of § 15.04.060(C)

E. Grading design plan. Grading design plan requirements, if applicable: The landscape documentation package shall include rough/precise grade elevations prepared for the project by a licensed civil engineer.

SECTION 3. LANDSCAPE WATER CONSERVATION

A. WATER EFFICIENT LANDSCAPES

Water efficient landscapes can be achieved through appropriate design and prudent water management. A substantial portion of urban water use is irrigating landscape areas. The purpose of this section is to establish minimum standards and requirements for designing, installing, and maintaining water efficient landscapes. These requirements may be used to improve water management practices and encourage water conservation in new and established landscapes. Water efficient landscape design employs techniques and materials to achieve water conservation without sacrificing attractive and functional landscapes. Principles of water efficient landscapes can be outlined in seven basic steps.

1. Development and Design

   This initial step is crucial to well–conceived, water efficient landscapes. Consideration should be given to use areas, circulation patterns, and budget. Site conditions, such as sunny and shady areas, low spots, soils, slopes, wind patterns, and views should be analyzed.

2. Soil Improvements

   Most plants do best with good soil drainage. Soil improvements should be directed toward providing adequate water penetration and drainage for healthy root development. Soil amendments and conditioners should be based on soil testing for agricultural suitability, and type of planting. Proper amendments improve water–holding capacity of soil.

3. Efficient Irrigation Systems

   Well–designed irrigation systems should be tailored to the needs of different plant groupings. Trees and shrubs may be watered with drip irrigation systems, point–source bubbler emitters, or low volume rotator sprinkler nozzles. Lawn areas are usually watered with overhead irrigation. However, low volume and low–angle nozzles should be used in lawn irrigation systems. Automatic controllers shall be weather/ET–based, and shall offer flexible and accurate timing of irrigation water application. Water efficient irrigation systems should apply water to the soil slowly, and only where it is needed.

   The City of Menifee encourages alternative landscape irrigation methods where appropriate, and as approved by the City. Recycled water and gray water are available in some areas, or will be soon, for use in landscape irrigation. Subsurface drip, or point–to–point, irrigation may be used in areas where runoff and overspray of irrigation water could be a problem.

4. Plant Selection

   Plants should be selected, and grouped together in the landscape, according to their watering needs. Soil conditions should also dictate type of plants used in landscapes. Plants with similar cultural requirements (sun, shade, soil type, water) should be placed together. Predominantly low water use planting should be used in the majority of landscaped areas.

5. Appropriate Lawn Areas

   Lawn grasses are the highest water users in the landscape. Lawns should be restricted to highly visible and active use areas for play, picnicking, sports, and entertainment. If lawn areas are necessary, then warm–season (such as hybrid Bermuda) grasses are most drought tolerant and should be used.

6. Mulches

   Surface mulches reduce evaporation and cool the soil, thereby conserving water for use by plants. Mulches also slow soil erosion and reduce weed growth. Mulches are either organic (bark chips, shredded plant trimmings, compost) or inorganic (cobble, decomposed granite, pea gravel). They are available in many textures and colors. Spread mulch in a uniform layer three inches deep throughout planted areas.

7. Maintenance

   Manmade landscapes require maintenance. However, water efficient landscapes should need less pruning, fertilizer, and water than conventional landscapes. Weeds should be removed at least monthly. Mulch should be re–applied where necessary. Check irrigation systems, especially emitters, sprinklers, and filters for blockages and leaks. Adjust irrigation watering cycles and timing to suit seasonal requirements.

B. GENERAL REQUIREMENTS

The following are requirements of the City of Menifee regarding water conservation in the landscape:

1. Planting Design

   1.1 Predominantly low water use plants shall be specified for the majority of planting areas. Most plants should be capable of surviving drought conditions for limited periods of time.

   1.2 Plants shall be grouped according to their horticultural requirements (water, soil, exposure). Similar plant types should be on the same irrigation circuits.

1.3 Planted areas shall be mulched and cultivated to retain soil moisture and reduce evaporation. A three–inch layer of mulch (minimum) shall be provided in planting areas (except herbaceous groundcover) with 3:1 slope gradient or less.

1.4 Lawns shall be limited to highly visible and active use areas only. If lawn areas are provided, then warm–season turf grass, such as hybrid Bermuda, should be specified.

1.5 Lawn shall be prohibited in street median islands, boulevards, public rights–of–way, and parking lot planter islands.

1.6 Consistent with County of Riverside Fire Department wildland vegetative fuel management requirements, native vegetation shall be preserved wherever possible.

2. Irrigation System Design

2.1 Highly efficient drip or bubbler irrigation systems only shall be specified in street medians, parkways, and parking lot planter islands. Irrigation systems should provide localized application of water, promote infiltration of water through soil, and prevent overspray onto pavement.

2.2 Spray nozzles shall be designed for head to head coverage. Overspray onto unplanted areas and hardscape such as driveways, walls, and sidewalks shall be prevented.

2.3 Spray heads shall utilize low precipitation rate, low angle nozzles where appropriate to maximize efficiency and minimize runoff or wind–drift.

2.4 Trees in lawns should be provided with low volume bubblers or emitters to promote deep watering. Irrigation circuits for these trees shall be valved separately from lawn circuits.

2.5 Automatic irrigation controllers shall be provided on commercial, industrial, and residential developments, including common open space areas.

2.6 Controllers shall include water conservation features such as weather station data, rain sensors, water budgeting, multiple programs and start time options.

3. Soil Improvements

3.1 Thorough soil analysis and testing shall be performed to determine necessary soil amendments and treatments.

3.2 Promote good drainage in lawns and planting areas through proper tilling and use of soil amendments. Soil percolation rate of one inch in one hour is considered good drainage.

3.3 Plants that are adapted to poor soil conditions shall be specified in areas where extensive soil improvements are not feasible.

4. Maintenance Recommendations

4.1 Trees and shrubs shall be pruned during their dormant season or before their new flush of growth in spring.

4.2 Mowers shall be well–maintained, and adjusted to cut turf grasses at their optimum heights.

4.3 Routinely aerate and de–thatch turf to facilitate water penetration into soil.

4.4 Planter areas shall be cultivated to control weeds that compete with desirable plants for nutrients and moisture.

4.5 Perform routine maintenance on irrigation systems to insure maximum efficiency and uniformity of coverage.

4.6 Repair malfunctioning, broken, and leaking irrigation equipment immediately.

4.7 Encourage deep rooting of plants by programming controllers to apply water slowly during longer irrigation cycles for low volume systems. Overhead spray systems in poor draining soils may require short, more frequent irrigation cycles to minimize runoff.

4.8 Automatic irrigation systems shall be carefully monitored and adjusted to deliver the correct amount of water to plants, with adjustments made for variations in weather conditions and seasonal rainfall. Moisture sensing equipment is encouraged to monitor soil moisture.

4.9 Operate spray irrigation systems during late evening and early morning hours to minimize evaporation and wind–drift.

4.10 Mulch shall be reapplied seasonally in landscape areas to maintain a uniform three–inch layer (minimum).

C. RECYCLED WATER USE FOR LANDSCAPE IRRIGATION

The City of Menifee requires the use of recycled water in landscape irrigation systems on sites where approved facilities are made available by the water purveyor. During the New

Development review process, the Eastern Municipal Water District (EMWD) will determine whether or not projects will be required to use recycled water. New development projects may be required to install “purple pipes” for future recycled water use. For information regarding recycled water system use requirements, contact EMWD.

D. GRAY WATER USE FOR LANDSCAPE IRRIGATION

The City of Menifee encourages the use of gray water for landscape irrigation, with all projects subject to the requirements of the California Plumbing Code as established under the Department of Housing and Community Development, Chapter 16, “Alternate Water Sources for Non–Potable Applications.”

SECTION 4. LANDSCAPE IRRIGATION SYSTEMS

The objective of this section is to aid in the preparation of irrigation plans and specifications, with special emphasis on water conservation, for landscape projects within the City of Menifee. Special conditions that the designer, contractor or owner finds during project design and installation, and not covered by these requirements, shall be submitted to the City at the earliest possible date. Refer to Section 8 for additional irrigation requirements in City–maintained areas and Community Facility District projects. Water–efficient landscape principles in the design and maintenance of irrigation systems are required by the City.

A. GENERAL REQUIREMENTS

1. Complete construction documents for automatic irrigation systems shall be submitted to the City for approval. Irrigation systems shall be designed and installed in accordance with the requirements set forth herein.

2. Highly efficient drip or bubbler irrigation systems only shall be utilized in street medians, parkways and parking lot planter islands. Drip irrigation shall be used in planted areas within 24 inches of any non–permeable surface to eliminate overspray onto hardscape and pavement.

3. Landscape irrigation systems shall be designed and programmed to prevent run–off and discharge of irrigation water onto roadways, driveways, structures, sidewalks, adjacent properties and areas not under City jurisdiction.

4. Due to the scale of drawings, it is not possible to indicate all offsets, fittings, and sleeves that may be required. Contractor shall carefully investigate structural and finished conditions affecting work and plan accordingly, furnishing fittings and other equipment required to meet site conditions.

5. Drawings are generally diagrammatic and indicative of work to be provided. Work shall be installed so as to avoid conflicts between irrigation systems, planting, utilities, and architectural features.

6. Irrigation drawings shall include a complete and comprehensive irrigation legend showing all types of equipment and materials to be used on the project with manufacturer, model number, size, and brief description clearly listed. Emitters and spray head types shall be shown with radius size, operating pressures, gpm or gph flows, precipitation rates, and spray patterns.

7. Pressure Constraints

    7.1 Systems shall be designed to operate with the lowest static pressure available at the meter.

7.2 Pressure loss calculations for the worst hydraulic condition at each point–of–connection shall be submitted at plan check. Water velocity in PVC pipe shall not exceed five feet per second for pressure main line piping and six feet per second for non–pressure lateral line piping.

8. Irrigation components and systems shall be designed to minimize vandalism (with special attention at schools, parks, along trails, roads, walks, and street medians).

9. Irrigation systems shall be designed to deliver water at a rate that matches the evapotranspiration (ETo) deficit of mature planting each week, without exceeding soil percolation rates. Irrigation systems shall be programmed to operate only between the hours of 9:00 p.m. and 6:00 a.m. the following day.

10. Germination and plant establishment periods shall be exempt from Item 9 above. Drip and bubbler irrigation may be operated at any time during the day.

11. Provide details indicating procedures and materials required for installation of major components of the irrigation system in accordance with City standard details.

12. Separate lateral circuits shall be designed for different exposures, plant type, hydrozones (low vs. high water use areas), slope gradient, and irrigation system type.

13. Irrigation plans shall indicate sleeve size and location for wiring and piping below all pedestrian or vehicular paving.

14. Irrigation systems shall deliver water efficiently and uniformly. Malfunctions and breaks shall be promptly repaired, and systems shall operate after repairs as originally designed and installed.

15. Water and Electric Service

    15.1 Separate dedicated meters for electrical and irrigation water services shall be provided on all CFD and public improvements projects.

    15.2 Irrigation Plans shall indicate point–of–connection sizes and locations of irrigation water meters and electrical meters for controllers. Indicate whether Contractor or Owner will be responsible for coordination with utility service company and installation of water and electrical service connections.

    15.3 Electrical and water meter locations for irrigation systems shall be checked for conflicts against public improvement plans.

    15.4 The following information shall be provided on plans at each irrigation water meter and point–of–connection:

- static water pressure in pounds per square inch (psi)—contact Eastern Municipal Water District
- meter size and meter elevation
- peak irrigation demand in gallons per minute (gpm or gph)
- service lateral type, size, and length

16. Temporary irrigation system design and installation shall be reviewed by the City. Irrigation plans must clearly indicate parties responsible for removal of temporary irrigation systems.

17. Overhead Spray Systems

    17.1 Pressure loss due to friction in sprinkler lateral line piping should not exceed 15 percent of sprinkler head operating pressure.

    17.2 Separate lateral circuits shall be designed for sprinkler heads with precipitation rates that vary by more than 15 percent.

    17.3 Spray heads and nozzles on lateral circuits shall have similar operating characteristics, including matched precipitation rates.

    17.4 Spray heads shall be spaced head–to–head to provide adequate uniform coverage of irrigated areas. Wind conditions and slope factors shall be considered during system design.

18. Drip and Bubbler Irrigation Systems

    'Drip and bubbler irrigation systems' refer to low pressure, low volume systems and equipment that apply water directly to the soil surface (or below the soil surface). Such systems include drip emitters, bubblers, and drip tubing. Overhead spray systems are not considered low pressure, low volume systems and equipment.

    18.1 System components shall be capable of normal operation at low pressures (10–50 psi) and low volumes (below one gpm).

    18.2 Design of irrigation systems shall provide balanced water application to plant materials of different sizes on the same drip or bubbler circuit.

    18.3 Adequate filtration and pressure regulation shall be provided in accordance with equipment manufacturer's recommendations.

    18.4 Drip irrigation circuits shall incorporate devices for flushing accumulated particulate matter from lines. Flushing of drip circuits shall not cause erosion and other impacts to adjacent landscaped areas.

18.5 Systems shall be designed for mature plant sizes, including eventual root pattern size and shape. A minimum of 50 percent of the root area of plant material shall be irrigated at all stages of growth, up to and including full mature size. Equipment required for mature plant size irrigation shall be installed initially. Future outlets for tubing shall be capped or otherwise sealed until needed.

18.6 Emitters shall be protected from soil and root intrusion and must be easily accessible by maintenance personnel (except approved subsurface emitter tubing).

18.7 Installation of drip, point-to–point, or bubbler irrigation systems is required in street medians, parkways, and parking lot planter islands to avoid overspray and runoff onto adjacent pavement.

B. MATERIALS AND SYSTEMS REQUIREMENTS

The following standards establish minimum requirements for major components and types of irrigation systems permitted in the City of Menifee. Materials and systems other than those noted below may be considered for use provided that such materials and systems can be proven to meet or exceed design and performance requirements contained herein.

1. Backflow Prevention Devices

1.1 Irrigation systems shall be isolated from potable water supplies by use of backflow prevention devices in accordance with requirements of Eastern Municipal Water District.

1.2 Reduced pressure backflow prevention devices shall be specified for all irrigation systems. Exceptions to this requirement shall be reviewed and approved by the City Engineer.

1.3 Unions, adapters, and fittings shall be copper. Water tube (pipe) shall be Type L hard copper, or brass.

1.4 There shall be no valves and accessories (i.e., hose bibs and drinking fountains) between water meter points–of–connection and backflow preventers.

1.5 Protective locking metal enclosures are required to prevent vandalism.

2. Control Systems

2.1 Weather/ET–based automatic controllers with battery backup shall be provided for all irrigation systems. Controllers shall be capable of multiple

programs and start times, water budgeting, repeat cycles, and moisture–sensing appropriate to requirements of the landscape design.

2.2 Controllers shall be equipped with rain–sensing, schedule override devices.

2.3 Controllers shall be located inside building structures, or installed outside in locking, weatherproof, vandal–resistant enclosures.

2.4 Control wiring shall be direct burial (DB) single strand copper wire, American Wire Gauge (AWG), Underground Feeder (Type UF), Underwriters' Laboratories (UL) approved, 600 volt.

3. Valves

3.1 Provide mainline isolation valves for sectional control of irrigation mainline. Isolation valves shall be brass, bronze or PVC Schedule 80 construction (150 psi minimum).

3.2 Manifold ball valves shall be same size as largest control valve in manifold.

3.3 Remote control valves shall be energy and flow–efficient, globe or angle type, with bodies constructed of brass or heavy–duty plastic. Control valves shall be of slow–closing design, and automatically close if power is interrupted and valves malfunction. Pressure–regulating modules shall be utilized if available.

3.4 Quick coupling valves shall be of heavy–duty brass construction, one or two–piece body design, with locking rubber or vinyl covers.

3.5 Anti–drain valves and spring–loaded check valves shall be of PVC Type I material with stainless steel springs and valve stems.

3.6 Master control valves shall be brass or heavy–duty plastic, normally open type.

3.7 Flush valves shall be in accordance with drip irrigation equipment manufacturer's recommendations

4. Pipe and Fittings

4.1 Irrigation pipe shall be manufactured from Type 1, Grade 1 or 2, 100 percent virgin polyvinyl chloride (PVC) compound in accordance with American Society for Testing and Materials (ASTM) specifications. Solvent–weld fittings shall be Schedule 40 PVC minimum.

4.2 Polyethylene (PE) tubing shall be manufactured of linear, low–density polyethylene resin with pressure rating of 50 psi (at 100 degrees F.) for nominal 0.5 inch (16 mm) tubing. PE tubing (0.5 inch) shall have minimum wall

thickness of 0.048 inch. Specialty fittings shall be compatible with PE tubing. Tubing material shall be UV–resistant.

4.3 Brass pipe shall be standard weight, iron pipe size (IPS), lead–free brass. Fittings shall be threaded, Class 125, lead–free brass.

4.4 Copper tubing shall be Type L, hard drawn.

5. Solvent Cement and Primer

Solvent cement and primer for PVC pipe shall be type recommended by pipe manufacturer. Cement used on pressure mainline pipe and fittings shall have medium set time and cure time of 24 hours minimum.

6. Spray Heads

Spray head types and operating characteristics shall be reviewed and approved by the City.

7. Sleeves

7.1 Pipe and wiring under vehicular and pedestrian use areas shall be installed in PVC Schedule 40 sleeves.

7.2 Sleeves shall be at least two times diameter of working pipe, or wire bundle, with minimum of two–inch size for irrigation pipe and wiring.

8. Trench Backfill

Backfill for irrigation trenches shall be clean, native or imported soil, free of rocks and debris larger than one inch in size.

9. Drip Irrigation Equipment

9.1 Drip emitters shall be self–flushing and pressure–compensating, with root intrusion deterrents.

9.2 Pressure gauges, or connections for gauges, shall be provided at drip valve control assemblies.

9.3 Emitter distribution tubing shall be flexible PVC or PE material.

9.4 Filters shall have flush valves and removable screens or disks, accessible for maintenance.

C. INSTALLATION AND MAINTENANCE REQUIREMENTS

1. Contractor shall not willfully install irrigation system as shown on drawings if obstructions, grade differences, or dimensional discrepancies exist in the field, which may not have been known during the design of the irrigation system. Notify City immediately in writing, when obstructions and/or differences are discovered. If notification of City (in writing) is not performed, Contractor shall assume full responsibility for field changes.

2. Irrigation system shall meet performance standards with respect to water application and conservation noted below:

   2.1 Irrigation water shall be applied at rates that do not exceed soil percolation rates. If varying soil types are present on site, irrigation system operation shall be compatible with soil having lowest percolation rate.

   2.2 Automatic irrigation systems shall be specified and programmed to prevent ponding and/or runoff of irrigation water. If runoff occurs before plant material water requirements are met, automatic controllers shall be re–programmed with shorter and more frequent watering cycles.

   2.3 Irrigation systems shall distribute water uniformly throughout all landscaped areas, with no excessively wet or dry areas.

3. Backflow Prevention Devices

   3.1 Reduced pressure backflow preventers shall be installed at all points–of–connection for potable irrigation systems in accordance with the requirements of the Eastern Municipal Water District.

4. Control Systems

   4.1 Each controller station shall operate one remote control valve only.

   4.2 Weather/ET–based controllers shall be set to adjust schedules automatically as warranted by seasonal and daily weather conditions.

   4.3 Provide conduit pipe for wire from electrical meter to controller in accordance with electrical code.

   4.4 Electrical work and equipment shall conform to National Electrical Manufacturers Association (NEMA) standards, UL requirements, National Electrical Code (NEC), and local codes.

5. Control Wiring

5.1 Depth of cover over control wires shall be same as main line piping (minimum).

5.2 Common (neutral) wires shall be white. Spare (extra) wires shall be red. Control wires shall be colors other than white and red.

5.3 Wire connections to remote control valves shall be made with epoxy–filled waterproof splice kits (wire nuts shall not be used).

5.4 Wire splices between controllers and valves are not permitted unless approved by the City. Approved wire splices shall be made in pull boxes only.

5.5 Wiring shall be bundled together with tape at 10–foot intervals and placed in same trench adjacent to irrigation main line piping.

5.6 Provide coil of extra control wire, 24 inches minimum length, at each remote control valve, and every change in direction (45 degrees and greater) of mainline piping.

5.7 Two spare control wires (min.) shall be installed for each mainline run, except City–maintained public improvement projects, which require one additional spare for every six control wires and one spare common wire (see Appendix G). Spare wires shall be installed from each controller to each end of main line runs.

6. Valves

6.1 Isolation valves shall be installed in main line piping at branches and “tees” in main lines.

6.2 Remote Control Valves

a. Install control valves in manifold where possible.

b. Install valves below grade in rectangular valve boxes with locking lids. Valve boxes shall be manufactured of heavy–duty HDPE plastic. Install one valve only in each valve box.

c. Clearance between top of valve flow control handles and valve box lids, and between bottom of valves and gravel sumps, shall be two inches (min.).

d. Clearance between top of piping and bottom of valve box “knock–outs” shall be one inch (min.). Knock–outs shall not be enlarged for non–standard valve installations.

e. Valves shall not be installed closer than 12 inches to paving and/or structures.

f. Valves shall be located in shrub and ground cover areas where possible unless otherwise approved by the City.

6.3 Quick Coupling Valves

a. Locations and spacing shall be as shown on irrigation plans.

b. When in valve manifolds with remote control valves, place quick couplers at ends of manifolds.

c. Valves shall be secured with rebar stakes (#4 by 18-inch length minimum).

d. Valves shall be located in shrub and ground cover areas, not in lawn or sports turf areas.

6.4 Check Valves and Anti–Drain Valves

a. Install anti–drain valves on spray heads to prevent low head drainage.

b. Check valves shall be installed on laterals as required to prevent drainage from piping or sprinklers due to changes in elevation.

7. Pipe and Fittings

7.1 Rigid PVC pressure main line and lateral line shall be installed below grade in accordance with City standard specifications and details. Pipe shall be “snaked” from side to side in trenches to allow for expansion and contraction.

7.2 Pipe shall be installed with markings clearly visible for inspection.

7.3 Brass pipe shall be installed with Teflon tape on threaded fittings.

7.4 Cut PVC pipe (2–inch dia. and under) and tubing cleanly with pipe cutters or shears. Cut larger pipe with saws and remove all burrs on inside and outside of pipe.

8. Spray Heads

8.1 Where irrigation spray heads are installed within eight feet of trails, paved areas, sidewalks, lawn, and high pedestrian–use areas, pop–up sprinkler bodies are required (6–inch or 12–inch pop–up height).

8.2 Irrigation heads shall be installed with triple swing joints and multiple–threaded street ells between heads and lateral piping.

9. Drip and Bubbler Irrigation Systems

9.1 PVC piping and drip components (other than bubblers and emitter outlets) shall be installed below grade in plastic access sleeves and valve boxes.

9.2 Drip tubing shall be installed at a minimum of four inches below finish grade. PVC lateral piping from control valves to emitters or drip tubing shall be installed at 12 inches depth (min.). Drip tubing may be installed on grade and covered with mulch with the approval of the City.

9.3 Emitters and bubblers on flexible tubing on grade (point–to–point), and drip tubing below grade, shall be held in place with galvanized metal stakes (6–inch length min.) at four feet on center (min.).

9.4 On slopes, emitter outlets shall be placed up–slope of plant rootballs.

9.5 Flexible tubing for on grade emitter assemblies (point–to–point) shall be non–rigid PVC, UV– and algae–resistant material. PVC Schedule 40 slip fittings shall be compatible with PVC tubing. Fittings and tubing shall be solvent–welded in accordance with manufacturer's recommendations

9.6 Low volume emitters shall be available in flow rates of one–half, one, two, and four gallons per hour.

9.7 Lateral lines and drip tubing shall be flushed immediately after installation, with lateral end flush valves fully open. Sustain flow until flushed water is visually clear and free of debris. Do not allow site run–off while flushing.

10. Trench Excavation and Backfilling

10.1 Trench Depth

a. Trenches shall be dug with straight runs. Bottoms of trenches shall evenly support pipes. Trenching shall follow layout indicated on plans, unless obstructions occur in the field.

b. Minimum depth of trench from top of pipe to finish grade (or surface) for pipe lines and wiring (over–excavate as required for pipe size and bedding material):

- 36 inches over irrigation main lines and lateral lines sleeved under roadways

- 30 inches over pressure main lines four inches (4”) in diameter, and irrigation lines sleeved under paving

- 24 inches over pressure main lines three inches (3”) and smaller

- 18 inches over non–pressure lateral lines to 12–inch pop–up sprinklers

- 12 inches over all other non–pressure lateral lines

- 24 inches, or same depth as main lines, for direct burial control wiring, and for irrigation electrical wires/cable in conduit.

10.2 Trench Backfill

- Trenches shall not be backfilled until after required tests and inspections are performed. Trenches shall be carefully backfilled with approved excavated materials (loam, sandy loam, sand, decomposed granite) free from large earth clods and stones over ½–inch in size. Backfill shall be mechanically compacted in landscaped areas to relative density equal to adjacent undisturbed soil. Backfill shall conform to adjacent grades without dips, sunken areas, humps and other surface irregularities.

- Flooding of trenches will be permitted only with approval of the City representative.

- If trench settlement occurs, then Contractor shall make required adjustments in elevation of pipes, valves, sprinkler heads, lawn and planting, and other construction.

- Contractor shall provide three inches minimum clean backfill (bedding) under irrigation lines.

- Irrigation pressure main line pipe shall be marked with metallic locating tape. Marking tape shall be installed 6 inches above, and along entire length, of main line piping. Tape shall be color–coded for potable (blue) or recycled (purple) water.

10.3 Trench Backfill Under Paving

- Trenches located below asphaltic concrete and PCC paving shall be initially backfilled with sand (six inches below and above pipe).

- Remaining backfill shall be compacted in six–inch lifts to 95 percent relative density with manual or mechanical tamping devices. Top of trench shall be flush with adjoining subgrade.

- Contractor shall set in place, cap and pressure–test all irrigation piping (main lines and laterals) under paving prior start of paving work.

- Installation of irrigation pipe under existing walks (six feet and less in width) may be accomplished by jacking or boring. If cutting or breaking of sidewalks is required, prior approval shall be obtained from the City representative.

- Provide minimum cover of 18 inches between top of pipe and bottom of aggregate base material for pressure and non–pressure pipe installed under paving.

- Schedule 40 PVC sleeves shall be installed for irrigation piping under paved areas.

- Irrigation pipe sleeves under paving shall be marked with metallic locating tape. Marking tape shall be installed 12 inches above, and along entire length of sleeves. Tape shall be color–coded for potable (blue) or recycled (purple) water.

11. Flushing and Pressure Testing

11.1 No testing shall take place, nor water allowed in pipe lines, before the solvent manufacturer's recommended curing time has elapsed.

11.2 Main line pressure piping shall be tested under hydrostatic pressure of 150 pounds per square inch and proved watertight prior to backfilling. No irrigation trenches shall be backfilled until piping has been inspected, tested, and approved.

11.3 Sustain pressure in pipe for not less than four (4) hours. If leaks occur, then repair leaks and repeat test until entire system is proven watertight.

11.4 Testing for main line pipe shall be completed and accepted prior to planting.

11.5 Sprinklers and drip lines shall be installed only after flushing and testing of the irrigation piping has been accepted in writing by the Engineer.

11.6 Flushing and testing of pressure main lines shall occur prior to installation of valves.

12. Manufacturer's Directions

    Refer to manufacturers' specifications, instructions and detailed drawings for work not shown in construction documents.

13. Ordinances and Regulations

    Applicable laws, ordinances and regulations governing irrigation design and installation are incorporated into these standards, and their provisions shall be carried out by designer and contractor. Requirements of this Section shall not be construed to conflict with applicable laws, ordinances and regulations. However, if above requirements describe materials, workmanship, and construction of better quality, higher standard, and larger size than is required by ordinances and regulations, provisions of this Section shall take precedence.

SECTION 5. LANDSCAPE PLANTING REQUIREMENTS

The City of Menifee requires water efficient landscape principles to be used in the design and development of landscapes within the city. Those principles directly related to planting include minimal use of lawn areas, adequate soil improvements, use of mulches, and selection of climate appropriate, non–invasive, low water use plants. Landscape planting shall be designed and installed in accordance with the requirements set forth herein.

A. GENERAL REQUIREMENTS

The following requirements pertain to landscape development within the City of Menifee.

1. Due to limitations on water supplies for landscape purposes, the City stresses the need for water efficient landscapes. Native plants, naturalized plants, and low water use plant species should be specified for most landscaped areas. Turf grass should be limited to active use areas only.

2. Tree size requirements (excluding slopes 4:1 or greater):

   2.1 The minimum nursery container size for trees shall be 15 gallon.

   2.2 The ratio of 15–gallon trees to 24–inch boxed trees or larger shall be 3:1.

3. Planting density of trees within open space and green belt areas shall be 60 trees per acre (minimum). This requirement may be modified in areas susceptible to wildland fires.

4. Planting plans shall represent true and accurate descriptions of proposed plant materials. On site review by the City will strictly enforce the representations, types and quantities that are shown on approved planting plans.

   4.1 Plants shall be specified by botanical and common names, with symbols and callouts clearly shown on each sheet.

   4.2 Plant legends shall list all plant species with symbols, sizes, quantities, spacing, remarks, and WUCOLS designation.

   4.3 Planting plans shall include installation details for trees, shrubs, groundcovers, succulents, and vines as shown on plans.

5. Plants with similar water requirements shall be grouped together in distinct hydrozones.

6. Plants used to provide screening (with or without fencing) as required by the City shall meet the following standards:

    6.1 Plants shall be evergreen and spaced to ensure dense screening within two years of installation.

    6.2 Plants shall consist of a mix of trees at 24–inch box size (minimum) and shrubs at 5 gallon (minimum) and 15–gallon size to provide required screening.

    6.3 Electrical transformers and other utility structures over 30 inches high shall be screened from public view with appropriate planting, in accordance with utility company guidelines and City of Menifee requirements.

        a. Utility structures and appurtenances (transformers, backflow preventers, utility meters/conduit on rear of buildings, etc.) shall require appropriate landscape screening from public view, whether or not such appurtenances were shown on approved landscape plans. Plans shall allow for field changes to provide additional plant material as necessary for required screening.

        b. Wireless Communication Facilities (cell sites): Cell sites shall have required landscape screening in accordance with the City's Development Code and landscape standards for dense vegetative screening herein. An automatic irrigation system utilizing an on site water source shall be provided to foster healthy and vigorous plant growth.

7. Plants shall be well–suited to site conditions and factors such as:
    - various on site soil types and microclimates
    - space available for development of mature structure and form
    - on site source of water (i.e., potable, recycled)
    - solar aspect and wind exposure
    - degree of required (and available) maintenance

8. Lawn Areas

    Turf grass is a high water use plant type and should therefore be limited to active use areas only. Several species have been developed with deep–rooting characteristics that may lessen the amount of water required. Warm season grasses can be allowed to go dormant, and are preferred over cool season grasses. Minor deviations from the standards below may be permitted, provided that the overall goal of minimizing the use of lawn areas is met.

    8.1 Lawn shall not be used in areas smaller than ten (10) feet in any direction.

    8.2 To minimize run–off, lawn shall have a maximum slope of 33% (3:1).

8.3 Lawn shall not be planted in street medians, boulevards, public rights–of–way, or parking lot planter islands.

8.4 Lawn designated for active use shall not be planted in locations inaccessible and unusable to the public and/or site occupants. Active use areas shall refer to open space for recreation, sports, picnicking, entertainment and similar activities.

8.5 Lawn shall not be planted in areas that are not visible to the public and/or site occupants; behind buildings, service areas, and behind fences and screens (unless designated for active uses).

8.6 Lawns planted with cool–season grass (see Table 5–1 below) that is not for active use shall not exceed 15% of the total landscaped area. Non–active spaces are primarily decorative areas.

8.7 Ball fields and parks shall be designed with emphasis on elimination of lawn if not essential to their function and operation.

9. Planting shall be installed in accordance with City of Menifee Standard Details. Details are reviewed/updated regularly, and are available on the City's website.

B. MATERIALS REQUIREMENTS

1. Plant Materials–General

1.1 Nomenclature: Scientific and common names of specified plants shall conform with approved names in "Sunset Western Garden Book" (latest edition), published by Oxmoor House.

1.2 Plant Quality and Labeling: Nursery stock shall be in accordance with State of California, Department of Food and Agriculture, Food and Agricultural Code, Division 18, Chapter 5 "Nursery Stock Grades and Standards."

a. Each group of plant materials delivered to job sites shall be clearly labeled by genus, species, variety, and nursery source.

b. Plants shall have normal structure and habits of growth, and be sound, healthy and vigorous. Plants shall be free of insect infestations, plant diseases, sunscald, fresh bark abrasions, and other objectionable disfigurements.

1.3 Right of Observation: The City reserves right to accept or reject plant material, upon delivery and after planting, based on size, variety and condition.

1.4 Size of plants shall correspond with that normally expected for species and variety of commercially available nursery stock, and as specified on plans.

1.5 Pruning: Do not prune, trim or top trees and other plant materials prior to delivery.

1.6 Protection: Carefully handle and store plants to protect them from drying out, wind burn, and other injury prior to planting.

1.7 Areas within Menifee are subject to periods of frost during winter, which may damage frost–sensitive plants. Plant material susceptible to frost damage should not be specified.

1.8 For projects served by recycled water, plant species should be selected for salt tolerance.

2. Container Stock (one, five, 15 gallon and tree box size)

2.1 Trees shall have straight trunks unless otherwise specified. Terminal leaders shall be uncut and undamaged. Trees with pruned or damaged leaders shall be rejected and removed from job site. Tree trunks shall be sturdy and well hardened off.

2.2 Container stock shall have been grown in containers delivered to project site for six months minimum, but not longer than two years.

2.3 Container stock shall have vigorous and fibrous root systems that are not root–bound, and are free of girdling roots.

2.4 In tree box containers, soil surface shall not be greater than six inches below the top of the box.

3. Flatted Plants

3.1 Groundcover plants from flats shall be grown and remain in flats until transplanted at job site.

3.2 There shall be minimum disturbance of root systems during planting.

4. Lawn

Lawn grasses can be classified as either warm–season or cool–season species. Generally, warm–season grasses use less water and are better adapted to the Southern California climate. The City encourages use of warm–season grasses, such as

hybrid Bermuda grass. Drought resistance comparisons of warm–season and cool–season grasses commonly specified in California are presented in Table 5–1 below.

4.1 Sod

Sod shall be fully mature, well–maintained, and specified variety, free of other grasses, weeds, diseases, and insects. Sod shall be evenly cut with sod cutting machines to uniform thickness. Material shall be from same growing grounds and delivered to job site within 24 hours of harvesting.

4.2 Stolons

a. Stolons shall be fresh, clean, living sections of runners of hybrid Bermudagrass. Stolons shall be free of turf disease, insects and their eggs, and weeds. Stolons shall be capable of healthy vigorous growth.

b. Sections of stolons shall be 1–4 inches long, with two or three nodes capable of rooting in soil.

TABLE 5–1
RELATIVE DROUGHT RESISTANCE OF COMMON TURFGRASSES

RELATIVE RANKING	TURFGRASS SPECIES	
RELATIVE RANKING	COOL–SEASON	WARM–SEASON
Superior		Bermudagrass (common)
Superior		Bermudagrass (hybrid)
Excellent		Buffalograss
Excellent		Seashore Paspalum
Excellent		Zoysiagrass
Good		St. Augustinegrass
Medium	Tall Fescue	
Fair	Perennial Ryegrass	
Fair	Kentucky Bluegrass	
Fair	Creeping Bentgrass	
Fair	Hard Fescue	
Fair	Chewings Fescue	
Fair	Red Fescue	
Poor	Colonial Bentgrass	
Poor	Annual Bluegrass	
Very Poor	Rough Bluegrass	
Source: Texas A & M University, Drs. Beard and Kim, 1989		

5. Seed

5.1 Seed shall be fresh, clean, and from latest season's crop. Mechanically pre–mix the seed to specified proportions.

5.2 Seed that has become wet, moldy, and otherwise damaged in transit and storage shall not be used.

5.3 Seed mixes shall be specified by quantity of pure live seed (PLS) of each species per acre.

5.4 Seed used for lawn planting, slope revegetation, and other purposes specified on plans shall be furnished in original sealed standard containers. Label seed containers with producers' guaranteed analysis: percentages of seed species, purity, germination, weed seed content, and inert material.

5.5 Seed mix composition shall be designed to reflect germination conditions during the wet season with 90% coverage of seeded areas by the end of the Establishment Period. Seeding should therefore occur at the times best suited for germination of the specified mix. If mix is applied in a dry season, then supplemental watering will be required.

6. Topsoil

6.1 Topsoil shall be "Class A," (Greenbook) natural, fertile, friable, sandy loam soils with characteristics of representative soils nearby, which produce heavy growth of crops, grasses, and other vegetation. Topsoil shall be native material obtained from natural well–drained areas, or from a local topsoil source.

6.2 Topsoil shall be free of undesirable insects, plant pathogens, weed and grass seeds, subsoil, refuse, heavy roots, large clay lumps, stones larger than one inch in size, brush, litter and other deleterious substances.

6.3 Topsoil shall be free of insoluble carbonates, and have the following properties based on laboratory analysis:

- pH: minimum of 6.0, maximum of 7.5 (acid–alkaline reaction)
- ECe: zero to three maximum (electrical conductivity)
- SAR: zero to six maximum (sodium absorption ratio)
- Organic content: 4% min.

6.4 Topsoil analysis shall be subject to review by City before start of construction.

7. Fertilizers and Soil Conditioners

7.1 General

Soil preparation is necessary in most planted areas. Materials and methods utilized to prepare sites for planting will vary according to soil conditions, type of planting (i.e., lawn vs. container stock), and topography, among other factors. Minimum standards for materials used for soil preparation are outlined below.

7.2 Soil Testing for Agricultural Suitability

a. Two (2) copies of soil test report prepared by a qualified agronomic soils testing laboratory shall be submitted to City prior to start of construction. Reports shall contain physical and chemical analysis with written recommendations for soil amendments. Contractor shall comply with recommendations in report. Textural analysis may also be required to determine suitable treatment of trail surfaces (if applicable), selection of plant materials, and appropriate irrigation systems and management.

b. Soil tests shall include 24–hour percolation test to determine soil drainage characteristics. Soil samples for testing should be taken after rough site grading is complete, and before start of planting. Sampling shall be in accordance with soil testing laboratory requirements.

c. Percolation tests shall be performed to determine soil drainage characteristics. Fill a one cubic foot hole (12 inches by 12 inches by 12 inches) at bottom of tree pit with water. Refill after water drains completely from hole. If any standing water remains in the hole 24 hours after refilling, Contractor shall submit proposed procedures to the City stating corrective measures to alleviate poor drainage. Percolation test results shall be submitted to the City prior to installation of plants.

d. Soil analysis shall measure following properties:
   - Fertility: nitrogen, phosphorus, potassium (N-P-K) and secondary nutrients (calcium, iron, sulfur)
   - Micronutrients
   - Salinity as measured by electrical conductivity (ECe in mmhos/cm @ 25 degrees C.)
   - Level of pH (acid–alkaline reaction)
   - Sodium Absorption Ratio–SAR (alkali/sodic soil)
   - Specific toxicities: elements that may restrict plant growth such as boron, chlorine, and sodium.

7.3 Soil amendments modify chemical and physical properties of soil. Types and quantities of amendments shall be based on soil test results and lab recommendations. Soil amendments shall meet the following requirements:

a. Composted organic soil amendments shall be stable, completely decomposed organic matter containing no toxins and harmful organisms that would inhibit plant growth.

b. Compost shall be from selected wood fibers (redwood, cedar, fir, pine) and green waste. Compost shall be leached, nitrogen–stabilized with residual nitrogen content of 0.5%–1.0%, and treated with iron and wetting agent.

c. Amendments (based on soil lab recommendations):
   - primary nutrients (nitrogen, phosphorus, potassium)
   - secondary nutrients (sulfur, calcium, iron)
   - iron sulfate (20% as metallic iron)
   - agricultural gypsum (hydrated calcium sulfate)
   - micronutrients (magnesium, manganese, zinc, etc.)

7.4 Fertilizer

Fertilizer shall be delivered to site in original, unopened packages, bearing manufacturer's guaranteed analysis. Damaged and caked material shall not be used.

a. Pre–planting and post–planting fertilizer (N-P-K) shall be commercial grade, pelletized or granular material having chemical analysis as specified in soil report recommendations or on plans.

b. Fertilizer planting tablets shall be tightly compressed commercial grade planting tablets with 12-8-8 or 20-10-5 formulation.

8. Staking and Guying Materials

8.1 Tree ties shall be flexible vinyl straps nailed to stakes with one inch roofing nails.

8.2 Nursery tape shall not be used to secure trees to support stakes.

8.3 Tree stakes shall be straight–grained lodgepole, treated and free from knots, splits and disfigurements. Stakes shall be a minimum of ten feet long. Stakes shall be of uniform thickness with minimum diameter of two inches (3–inch diameter stakes may be required for high wind areas).

8.4 Guying Materials

a. Tree guys shall be common grade 7–strand galvanized steel cable, $^{3}/_{16}$–inch minimum, and solid core. Wire covering on branches shall be ½–inch

diameter minimum, new two–ply garden hose, or reinforced rubber or plastic.

b. Guys shall be flagged, and ninety percent of wire length covered with ½–inch diameter white PVC pipe.

c. Wire anchors shall be redwood or concrete deadmen, 4 inches x 4 inches x 30 inches minimum.

d. Alternate staking and guying materials may be accepted by the City for review. Contractor shall submit material and installation specifications, and catalog cut sheets, to City representative for review prior to start of work.

9. Root Control Barriers and Trunk Guards

9.1 Street trees, parking lot trees, and trees planted within six (6) feet of hardscape shall require linear root barriers adjacent to hardscape. Root barrier materials shall be approved by the City prior to use on the project.

9.2 Trunks of trees planted in lawns shall be installed with trunk guards to protect bases of trunks from damage by mowers and trimmers.

a. Trunk protectors ("Arbor–guards") shall be plastic, eight inches long (min.), and shall allow for growth of tree trunks.

b. In lieu of plastic trunk protectors, the contractor shall install a mulched circle around the base of each tree trunk. The mulched area shall be a minimum of 36 inches in diameter.

10. Mulch Materials

10.1 Composted organic material–refer to item B.7.3. above. Prior to delivery to site, Contractor shall submit sample to City's representative for approval.

10.2 Bark chips shall not be specified, or installed as mulch in planting areas, unless approved by the City.

10.3 Inorganic mulch (cobble rock, pea gravel, decomposed granite, etc.) shall be approved by the City's representative.

10.4 Mulch consisting of chipped and shredded plant trimmings shall be clean and free of debris and foul odor. Particle size shall range from one inch to four inches. Prior to delivery, submit sample to City's representative for approval.

11. Hydroseeding Materials and Equipment

11.1 Hydromulch

a. Hydromulch shall be clean, 100% virgin, natural wood fiber. Materials that inhibit germination and growth of seed shall not be present in fiber mulch. Mulch shall be dyed green to facilitate metering of slurry. Fibers should disperse into homogeneous slurry when mixed with water. An absorptive and porous mat shall result when slurry is sprayed on ground surface.

b. Wood fiber mulch shall be applied at minimum rate of 3,000 pounds per acre on slopes.

c. Fiber mulch material specifications shall be submitted to the City for review and acceptance prior to use on the project.

11.2 Fertilizers and soil conditioners shall consist of organic materials comprised of decomposed animal, vegetable, and mineral matter, and composted to support soil bacterial activity. Quantity and type of fertilizer shall be approved by the City prior to use on the project.

11.3 Humectant/Wetting Agent specifications shall be approved by the City prior to use on the project.

11.4 Tackifier

a. Tackifier shall be an organically–derived, biodegradable solid formulation for adhesive binding of wood fiber and straw mulch.

b. Tackifier shall be applied at rate recommended by manufacturer.

11.5 Bonded Fiber Matrix (BFM)/Stabilized Fiber Matrix (SFM)

a. Submit product specifications to the City for review and acceptance prior to application.

b. BFM/SFM shall be applied at the rate recommended by the manufacturer and approved by the City

11.6 Hydroseeding Equipment

a. Mix hydroseed slurry in tanks with built–in continuous agitation and recirculation systems.

b. Tanks shall have sufficient operating capacities to produce homogeneous slurry of fiber, fertilizer, seed, tackifier, and water in specified unit proportions.

c. Discharge systems shall apply slurry to designated areas at continuous and uniform rates.

12. Wetting Agents and Soil Penetrants: Specifications (product formulations) shall be submitted to the City for approval prior to use on the project.

13. Weed Abatement: Herbicide specifications shall be submitted to the City for approval prior to use on the project. Herbicide application procedures shall be in accordance with Federal, State of California, Department of Agriculture and County of Riverside regulations for safe management of herbicides.

14. Synthetic (Artificial) Turf Materials
Synthetic turf may be installed subject to the requirements of the City's Development Code and other applicable ordinances. Synthetic turf materials shall be the highest quality, and shall meet the following criteria:

14.1 Synthetic turf shall have a minimum blade length of 1.5 inches.

14.2 Infill material consisting of washed silica sand and black cryogenic rubber shall be distributed evenly over the synthetic turf to provide cushioning and keep the blades upright.

14.3 Crushed rock with integrated weed barrier system shall be placed as base material prior to installation of synthetic turf.

C. INSTALLATION AND MAINTENANCE REQUIREMENTS

Refer to Section 8, "Engineering/Public Works Landscape Design & Maintenance" for additional planting requirements on public works projects.

1. Fine Grading and Soil Preparation

1.1 Rough grading shall be completed prior to soil preparation.

1.2 Planting areas shall be free of weeds, stones, clods, roots, and other debris (one inch in diameter and larger) for a minimum depth of two inches.

1.3 Soil preparation in planting areas shall be done completed in accordance with construction documents and soil report recommendations.

1.4 After soil preparation, planting areas shall be graded to smooth and even surface conforming to required finish grade. Finish grade adjacent to walks, paved areas, curbs, manholes, clean-outs, valve boxes, and similar features shall be one inch below surface of improvements in lawn, and three inches below in ground cover and shrub areas. Grades between such features shall be carefully maintained and blended to eliminate abrupt elevation changes.

1.5 Subgrade of areas to receive sod shall be at proper depth below adjacent finish surfaces (walks, paved areas, etc.).

1.6 Planting areas shall have finish grades conforming to approved plans and specifications after full settlement has occurred.

1.7 Eroded areas shall be repaired and restored to finish grade.

1.8 Planting areas shall have positive surface drainage (2% min.) with flows directed into on site bioretention/biofiltration basins. Landscape grading and drainage shall conform to the City's Grading Ordinance, Stormwater Ordinance, and other applicable codes and ordinances.

1.9 Soil in planting areas shall be scarified (loosened) to a minimum depth of 12 inches.

2. Trees, Shrubs, and Vines

2.1 Excavation of plant pits

a. Planting holes shall have vertical sides with scarified surfaces. Holes shall be at least two times the width and slightly less than the height of plant root balls. Holes shall be wide enough to permit handling and planting without injury and breakage to plant roots and root balls. Refer to City Standard Details.

b. Excess soil generated from planting holes may be distributed on site if in compliance with Grading Plan. Site soil shall be amended as specified in general soil preparation, or legally disposed of off site.

2.2 Planting Procedures

a. Plants shall be distributed, planted and watered–in on the same day.

b. Plants shall be removed from containers without breaking the root balls, and shall be watered immediately after removal from containers. Do not remove plants from containers prior to planting in holes.

c. Acceptable topsoil that is stockpiled during excavation of planting holes shall be amended and used for backfill.

d. Planting backfill shall be amended based on soil report recommendations and project specifications.

e. Root balls shall be inspected by the contractor during planting. Circling roots shall be cut and separated from the root ball, then spread out in planting holes. Root balls shall be slashed vertically 4-5 times with sharp tools to a depth of 2 inches maximum.

f. Plants shall be set in planting holes on firm native soil. Bottom of plant holes shall be scarified to improve drainage. After placement and settling, root crowns shall have the following relationships to surrounding finish grades:
   - one gallon size: slightly above finish grade
   - five and fifteen gallon size: one inch above finish grade
   - 24–inch box size and larger: two inches above finish grade

   Plants that settle deeper than noted above shall be raised to correct levels.

g. After plants have been placed in plant holes, backfill as follows:
   - five gallon container size and smaller: amended backfill mix shall be added to holes to cover approximately one–half the height of root balls
   - 15 gallon container size and larger: native soil shall be added to holes to within 12 inches of finish grade

   Fill holes with water to thoroughly saturate root balls and adjacent soil.

h. After water has completely drained from holes, fertilizer tablets shall be placed as indicated below. Tablets shall be placed on top of root balls while plants are still in containers to verify required quantity of tablets for each hole.
   - 1– 5 gram tablet per liner and flatted plant.
   - 1–21 gram tablet per one gallon container.
   - 2–21 gram tablets per five gallon container.
   - 4–21 gram tablets per 15 gallon container.
   - 1–21 gram tablet per four inches of tree box size.

   If 7–gram tablets are used, follow manufacturer's recommendations.

i. Planting holes shall then be completely backfilled and lightly tamped filled to finish grade with amended backfill mix and thoroughly watered.

j. After backfilling, earthen basins shall be constructed around plants. Inside diameter of basins shall be same size as root balls, and contain sufficient water to saturate root balls. Watering basins shall be constructed of amended backfill materials.

k. Immediately after planting, fill watering basins of trees and shrubs with water. Apply water in moderate streams, without disturbing backfill, until soil around roots is completely saturated.

l. During the plant establishment period (generally 90 days), provide sufficient irrigation to keep root zones moist for optimum plant growth.

m. Earthen berms around shrubs and trees on slopes shall be maintained, with periodic inspection to remove siltation around plant root crowns.

2.3 Staking and Guying

a. Trees that are not self–supporting shall be staked or guyed.

b. Five gallon trees shall be single–staked. Fifteen gallon and 24–inch box size trees shall be double–staked. Larger trees shall be guyed as required to support the trees.

c. Support stakes shall be placed outside plant root balls.

d. Two vinyl tree ties shall be used with single stakes, and four tree ties with double stakes. Installation of stakes and ties shall allow for adequate movement of tree trunks to ensure proper trunk development.

e. Trees shall not be staked or guyed for longer than two growing seasons.

f. Tree stakes shall not rub against trunks and branches. Trim tops of stakes to six inches below lowest canopy branches.

g. Vine Staking: Vines shall have wood nursery stakes removed without damage to plants. Train vines on adjacent posts and walls. Vines shall be attached to posts and walls with plastic adhesive vine ties, or approved substitution (no nails).

h. Guy wire anchors shall be buried 24 inches minimum.

i. In high–wind hazard areas, additional tree staking and guying requirements may be necessary as determined by the City, including installation of additional and/or larger stakes/guy wires, and additional ties.

2.4 Pruning

Pruning shall be limited to the minimum necessary to remove injured twigs and branches. Pruning for form shall begin the year after installation.

2.5 Root Control Barriers

a. Root barriers shall be installed in a linear fashion, parallel to adjacent hardscape, extending eight (8) feet on either side of tree trunk (sixteen feet total length, minimum).

b. Root barriers shall be installed with in accordance with manufacturer's recommendations.

3. Ground Cover

3.1 As part of soil preparation, ground cover planting areas shall receive pre–planting fertilizer as specified in soil report recommendations and specifications. Fertilizer shall be evenly broadcast throughout planting areas.

3.2 Ground cover plants shall be grown in flats or peat pots. Soil shall contain sufficient moisture for roots to be well–developed (soil will not fall apart away when plants are lifted from flats). If plants in peat pots are specified, pots shall be protected at all times prior to planting to prevent unnecessary drying of root balls. Plants shall be removed from peat pots prior to planting.

3.3 Ground covers shall be planted in straight rows and evenly spaced in a triangular pattern. On–center spacing shall be as noted on plans. Herbaceous ground cover shall be spaced to attain 90 percent coverage within one year after installation (two years for woody ground cover).

3.4 Plants shall be immediately watered after planting until the entire area is soaked to full depth of root zone. Spread mulch evenly in ground cover planting areas to a depth of 1½ inches (3–inch depth between woody groundcovers from containers).

4. Mulching of planted areas shall be to 3–inch depth (minimum) in areas of 2:1 slope and less, except areas with herbaceous ground cover, which shall be mulched to a depth of 1½ inches minimum.

4.1 Inorganic mulch cover with no living plant material installed within the same planting area shall not exceed 25% of the total landscaped area.

5. Lawn

5.1 Lawn shall be planted by broadcast seeding, stolons, hydroseeding, or sodding as indicated on the plans.

5.2 After soil preparation, areas to be planted with lawn shall be raked, floated, and rolled to level finish grade by an acceptable method. Finish grade shall be smooth and even, free of rocks and clods, and sufficiently compacted to prevent settling. Prior to planting, the upper two inches of soil shall be sufficiently loose and friable to receive seed, stolons, or sod. Planting areas shall be thoroughly irrigated to a depth of six inches.

5.3 Pre–planting Fertilization: Prior to planting lawn, approved fertilizer shall be evenly broadcast at rates specified in soils report and specifications.

5.4 Seed

a. A satisfactory method of sowing shall be employed, using hand seeder, or other approved equipment. Rate of application of seed shall be in accordance with plans and specifications. Seeding shall be done in two operations, with the second sowing at right angles to the first.

b. Seed shall be evenly top–dressed to a depth of ¼– to ½–inch with approved composted mulch. Seeded areas shall be smoothed and firmed immediately with a water–weighted roller, or other approved equipment. Final rolling of slopes shall be parallel to contours to prevent erosion.

c. Immediately after seeding, apply a light, fine mist spray of water to anchor the seed and top–dressing to soil, forming a protective crust to prevent wind erosion and drying of seed. Lawn areas shall be kept moist until fully germinated.

5.5 Sod

a. Requirements for soil preparation, finish grading and fertilization shall be as for seeded lawns. Subgrade elevation of areas to be sodded adjacent to walks and paving shall allow for proper relationship of finish grades after sod installation.

b. Sod shall be delivered and installed within 24 hours after harvesting.

c. Subgrade shall be moist, but not muddy, when sod is installed. Trench backfill shall be compacted, with no settling and depressions.

d. Lay sod in one direction only, with close–fitted butt joints. Ends of sod strips shall be staggered to eliminate continuous joints, with no gaps and voids. First course of sod shall be laid against longest adjacent straight paving edge.

e. Sod shall be lightly irrigated within two hours after being placed.

f. Sodded areas shall be allowed to dry sufficiently to permit rolling with a water–weighted roller to ensure soil contact with grass roots, and to provide firm, smooth mowing surfaces.

g. At the end of each day, sod installed that day shall be sufficiently watered.

5.6 Stolons

a. Stolons shall be planted in a moist prepared seedbed at the rate specified on the plans. However, planting areas shall be sufficiently dry to allow access by mechanical equipment. Stolons shall be kept evenly moist until turf is well established.

b. Stolons shall be worked into the soil to a depth of ½ to 1½ inches with an approved mechanical planter.

c. Hydrostolonizing may be permitted with written approval from City.

6. Hydroseed Application

6.1 Weed Control

a. After completion of the irrigation system, and existing weeds have been removed from planting areas, apply 200 pounds per acre of 16-6-8 commercial fertilizer in accordance with manufacturer's instructions. Irrigate planting areas until weed seeds have germinated. Apply only enough water to planting areas to germinate weeds. Slope soils shall not be saturated. After germination, watering shall cease for three days. A non–selective herbicide shall be applied to eradicate newly germinated weeds. Translocation period for herbicide shall be in accordance with manufacturer's instructions.

b. Allow herbicide to kill weeds. Remove dead weeds from planting areas.

c. If weeds are still found, repeat weed control procedure until new growth appears. Reapply non–selective herbicide and remove weeds after herbicide has had sufficient time to take effect.

6.2 Hydroseed Preparation and Application

a. Slurry preparation shall take place on site. Slurry tanks shall be thoroughly clean and free of seed species not specified.

b. Slurry components shall be mixed at rates of application indicated on Plans. Application shall commence as soon as slurry tank is full.

c. Application: Operator shall spray area with uniform visible coat using color of wood fiber and organic amendment as a visual guide. Slurry shall be applied in a downward drilling motion with fan stream nozzle.

d. Time Limit: Hydroseed mixture shall not be left in slurry tanks for more than two hours. Mixture not applied after two hours shall be rejected and disposed of off–site at contractor's expense.

e. Irrigation: Hydroseed areas shall be thoroughly irrigated prior to hydroseed application. Contractor shall note and correct inadequate coverage before and after hydroseeding.

6.3 Protection of Adjacent Areas shall be exercised by contractor to prevent slurry from being sprayed inside reservoirs, basins, drainage ditches, and channels, which may contaminate or impede the free flow of surface water. Slurry sprayed into restricted areas shall be cleaned up at contractor's expense, and to the satisfaction of the City.

6.4 Reseeding of bare spots shall be done within ten days after germination. Contractor shall be responsible for reseeding areas until an acceptable stand of hydroseeded material is established and accepted by the City.

6.5 Irrigation system shall provide uniform distribution of water to ensure proper germination of hydroseed mixture.

6.6 Fertilization of lawn with post–planting fertilizers shall be done at 45 and 90 days after start of the maintenance period.

7. Synthetic (Artificial) Turf Installation

7.1 Existing irrigation in areas to receive synthetic turf shall be removed and capped. Excavate areas to required depth for base material and drainage.

7.2 Crushed rock base shall be placed to a minimum depth of four (4) inches, and compacted to 90% relative density.

7.3 A permeable geotextile weed barrier shall be installed below the synthetic turf, or as part of the turf material to inhibit growth of weeds through the turf.

7.4 Synthetic turf shall be securely fastened to the ground with staples, nails, and specified adhesives. Cuts shall be straight with matching stitches—seams shall not be visible.

7.5 Infill material shall be spread liberally and evenly with a drop spreader over the synthetic turf in several passes with the spreader. Between passes of the spreader, grass fibers shall be brushed upright with a stiff bristled broom or carpet rake. When infill process is complete, entire area shall be evenly wetted to settle the material.

8. Maintenance and Plant Establishment

8.1 Planting areas shall be maintained for the specified establishment period and shall include watering, mowing, fertilizing, pruning, weeding, and replacement of dead, dying, and injured plant material. Trees shall not be staked or guyed for longer than two growing seasons, unless directed otherwise by the City.

a. Irrigation scheduling shall ensure establishment of healthy root systems, without overwatering, and shall be monitored and adjusted for efficient operation and uniform coverage.

b. During the plant establishment period (generally 90 days), provide sufficient irrigation to keep root zones moist for optimum plant growth. Irrigation shall be gradually reduced after plants are established, to the lowest amount necessary to maintain healthy plant material.

c. Berms around shrubs and trees on slopes shall be maintained. Maintenance shall include periodic inspection to eliminate siltation around plant root crowns.

SECTION 6. SLOPE REVEGETATION

This section provides requirements to minimize surface erosion, sedimentation, and soil slippage on cut and fill slopes, as well as make slopes visually pleasing. Grading and slope revegetation shall conform to the City of Menifee Grading Ordinance and Stormwater Ordinance.

A. BONDING FOR SLOPE REVEGETATION

Slope stabilization planting and irrigation is bonded as a portion of the grading bond required by the Engineering Department prior to issuance of grading permits. Because specific planting procedures are bonded at different rates, the Applicant/Owner should check with the Engineering Department for the current bonding schedule. Plant materials on slopes must be established prior to release of bonds.

B. GENERAL REQUIREMENTS

1. Slopes of three (3) feet and greater vertical height and 3:1 (33%) and steeper slope gradient shall be permanently revegetated.

2. Slopes requiring permanent revegetation shall have fully automatic irrigation systems.

3. Temporary Revegetation Without Irrigation shall comply with approved Storm Water Pollution Prevention Plans (SWPPP) and Erosion Control Plans.

    3.1 Graded and brushed lots, on which no immediate building is intended to occur, shall receive temporary non–irrigated hydroseed approved by the City. Erosion control measures, including hydroseeding, on uncompleted grading projects shall be implemented by October 1st of each year.

    3.2 Properties intended to be sold as lots only shall have required temporary non–irrigated slopes hydroseeded prior to October 1st or finished grade approval, whichever comes first.

4. Permanent Revegetation

    4.1 Developments requiring permanent slope revegetation shall have such improvements completely installed on or before October 1st of each year, and prior to rough grading approval. If not practicable, then temporary erosion protection measures shall be undertaken as required by the City's Grading Ordinance.

    4.2 Developments shall have permanent slope revegetation measures in place and approved prior to occupancy permit issuance.

5. Slope revegetation plans must be prepared and signed by California licensed landscape architects.

6. City's Representative shall inspect installation of slope revegetation improvements for conformance to approved plans and specifications.

7. Cut slopes steeper than 2:1 may be allowed by the Engineering Department. These areas may be subject to special conditions, including slope serration. Slopes shall have sufficient soil coverage to support healthy plant growth, except exposed rock cuts.

C. SLOPE IRRIGATION REQUIREMENTS

1. Irrigation controllers utilized for slope revegetation projects shall be capable of a minimum of four start times per station per day. Control systems shall utilize flow sensors and master control valves to automatically monitor and shut down flows if irrigation main line breaks are detected.

2. Irrigation systems shall utilize low precipitation rate spray heads, drip irrigation, or both if practicable.

3. Irrigation systems for slopes shall utilize pressure booster pumps where water distribution system supply pressure is inadequate for system hydraulic requirements.

4. All piping and tubing shall be buried below grade, except emitters and bubblers with point–to-point irrigation. On–grade irrigation piping and tubing shall only be used where irrigation systems are intended to be temporary, or soil conditions limit the use of subsurface piping, as approved by the City.

5. Provide separate control valves for lateral circuits operating systems at the top, toe, and intermediate areas of slopes.

    5.1 Irrigation piping shall run parallel to contour lines, or as close to parallel as possible.

    5.2 Valves shall be installed below grade in valve boxes, and be located for easy maintenance access. Mainline pressure pipe shall be placed below grade at toe of slopes where possible.

6. Check valves and anti–drain valves shall be installed where necessary to eliminate low–head drainage.

7. Drip irrigation systems shall be used on slopes where overhead spray irrigation is not practicable (transition areas adjacent to native vegetation, highly erodible soils, tight clay soils, etc.).

D. SLOPE PLANTING REQUIREMENTS

1. Plant Material–General

1.1 A combination of smaller herbaceous and/or prostrate shrubby groundcovers, and larger deep–rooted shrubs and trees, shall be required to prevent both surface erosion and slope mass movement.

1.2 Low water use plant material appropriate to site conditions, from seed and container stock, shall be required for slope revegetation.

1.3 Species that germinate quickly and spread rapidly shall be planted to provide quick cover and prevent surface erosion. Long–lived, slow–growing plant material shall also be utilized to ensure long term slope stability.

1.4 Germination of hydroseed shall be required before final project acceptance.

a. A germination rate of 90 percent overall, and 50 percent coverage of soil surface, shall be required by the end of the Establishment Period.

b. After one year, coverage of soil surface in hydroseeded areas shall be minimum 90 percent.

2. Plant Material Installation

2.1 Trees shall be planted at the rate of one tree per 750 square feet of slope area (liners: one per 375 square feet).

2.2 Shrubs shall be planted at the rate of one shrub per 100 square feet of slope area (liners: one per 50 square feet).

2.3 Tree and shrub planting shall consist of deep–rooted species. “Deep–rooted” means that roots are capable of reaching at least three to five feet deep in favorable soil conditions.

2.4 Plant material container sizes shall be as follows:

a. Trees:
   - minimum size: liners (no more than 20 percent of total tree quantity may be liners) and one gallon
   - maximum size: 15 gallon

b. Shrubs and Vines:

- minimum size: liners (no more than 20 percent of total shrub quantity may be liners) and one gallon
- maximum size: five gallon

2.5 Groundcovers shall be hydroseeded, or hand planted rooted cuttings from flats appropriately spaced to eventually control soil erosion.

2.6 Tree placement should favor lower slopes to preserve viewsheds. Trees planted on upper slopes should be placed in relation to property lines at the top of slopes in order to enhance and protect existing and potential view corridors.

E. ROLLED EROSION CONTROL PRODUCT (RECP)

1. Materials (blankets, netting, mats)

1.1 Erosion control netting shall be open weave, furnished in rolled strips. Provide materials specifications to the City for review and acceptance prior to use on the project.

a. Erosion control netting shall be manufactured from 100% coconut fiber loosely twisted, open weave, not varying in thickness by more than one–half its normal diameter.

1.2 Erosion control blankets shall consist of a core composed of coconut, coconut and straw, or excelsior, surrounded by two non–synthetic nets for shear strength. Provide materials specifications to the City for review and acceptance prior to use on the project.

1.3 Staples for rolled erosion control netting and blankets shall be 11 gauge steel wire, bent to form a 'U' shape, six inches minimum length and one inch wide. RECP shall be stapled in place (4 feet on center spacing max.) and firmly embedded into soil by means of tamping or rolling.

2. Installation of erosion control netting and blankets shall be in locations specifically delineated on the drawings, and as required due to field conditions.

2.1 Surface of slopes shall be uniformly smooth and even with debris and rocks larger than two inches in diameter raked out. Soil shall be sufficiently moist to permit placing of rolled erosion control product and to prevent sloughing of topsoil.

2.2 Erosion control matting materials shall be laid in the direction of flow of surface drainage, and installed in accordance with the manufacturer's directions. Matting shall be cut to provide a visually pleasing slope installation.

3. On slopes 3:1 and steeper, and covered with rolled erosion control products, irrigation and planting of deep–rooted species shall be required to control erosion and provide permanent slope revegetation.

F. ADDITIONAL EROSION CONTROL MEASURES

1. Extreme erosion hazards such as steep slopes, highly erodible soils, and impermeable soils may necessitate the use of more stringent erosion control measures as determined by the City Engineer. Such measures may include, but are not necessarily limited to:

   1.1 Erosion control planting with hydroseed, container stock, and cuttings beyond minimum requirements.

   1.2 Placement of rolled erosion control products.

   1.3 Reduction of slope cuts and embankments.

   1.4 Construction of brow ditches and down drains.

   1.5 Construction or extension of retaining walls.

   1.6 Soil stabilization treatment.

   1.7 Provisions for subsurface drainage.

   1.8 Special requirements for irrigation.

   1.9 Application of chemicals to stabilize soils.

G. TRANSITIONAL LANDSCAPES

Manufactured slopes and disturbed areas designated as transitional planting between non–native landscapes and native vegetation shall be revegetated with visually and ecologically compatible planting prior to acceptance of the project. The following requirements shall apply:

1. City of Menifee prohibits removal and disturbance of native vegetation, with limited exceptions. Refer to Grading Ordinance for further information and permit requirements for clearing of native vegetation.

2. Areas of natural vegetation adjacent to development are subject to review by the County of Riverside Fire Department. Appropriate vegetative fuel management programs (fuel modification) may be required as part of the project review.

3. Additional restrictions may apply adjacent to environmentally sensitive areas (riparian habitat, burrowing owl habitat, oak woodlands, etc.) and natural preserves.

4. Plant species selected for transitional areas shall be ecologically and visually compatible with native vegetation and appropriate to site conditions.

5. Areas immediately adjacent to native vegetation should be planted with native species only. Non–invasive exotic plant species may be used for quick cover and short–term erosion protection as approved by the City.

6. Temporary irrigation only shall be installed adjacent to existing native vegetation. Temporary systems shall be removed or abandoned after transitional planting is established.

7. Invasive exotic pest plant species that sprout in transitional areas shall be promptly removed.

8. Refer to the County of Riverside, *California Friendly Plant List* (http://rctlma.org/Portals/7/documents/landscapingguidelines/comprehensiveplantlist.pdf) for a list of plant species appropriate for use in transitional landscapes.

SECTION 7. LANDSCAPE GRADING AND CONSTRUCTION

This Section establishes minimum requirements for landscape grading, drainage, and construction improvements. Additional information regarding codes and permit requirements for grading and wall construction should be obtained from the City of Menifee Engineering Department, and Building & Safety Department.

A. LANDSCAPE GRADING REQUIREMENTS

Landscape grading is defined as minor alterations and finished manipulation of landforms, involving relatively small amounts of earth, as opposed to rough (or mass) grading, which significantly alters landforms. Landscape grading is performed to create playfields, recreational trails, pedestrian circulation, bike paths, earth mounds for screening, contours for adequate drainage, and other decorative or functional landforms.

1. Existing and proposed finish grades shall be indicated by contours and spot elevations on landscape grading plans. Landscaped areas shall have positive drainage away from structures and toward collection points.

2. Grades, flow lines, drainage structures, and other grading improvements within public rights–of–way shall be indicated on landscape grading plans.

3. Grading plans shall conform to the following slope criteria:

    3.1 Bike path grade: 5 percent maximum slope (steeper grades will be permitted for distances up to 500 feet).

    3.2 Disabled access: 8.33 percent maximum slope. Refer to California Building Code, Title 24, Part 2, California Code of Regulations, and current supplements for additional requirements (latest adopted editions).

    3.3 Minimum grade of lawn and groundcover areas: 2 percent.

    3.4 Mounded lawn areas shall have a maximum design slope of 3:1 (33%). Groundcover areas shall have a maximum design slope of 2:1. Landscaped areas with mulch only shall have a maximum slope of 3:1.

    3.5 Recreational Trails: Refer to Appendix B for Recreational Trail Design Standards.

    3.6 Gradients for turf grass playfields:

        a. Open play areas—3% maximum
        b. Active sports fields—1.5% minimum and 2% maximum

3.7 Hardcourts (tennis, basketball, etc.) shall be constructed with a slope of one inch per ten feet.

4. Grading and drainage improvements affecting adjoining properties (public and private) shall conform to City of Menifee Grading Ordinance. Subsurface drain lines shall connect into storm drain systems or discharge to treatment areas.

5. Grading and drainage improvements within public rights–of–way shall be subject to approval by City Engineer.

B. LANDSCAPE CONSTRUCTION REQUIREMENTS

1. Bike Paths (Class I Bikeways)

1.1 Bike paths shall be constructed in accordance with Caltrans *Highway Design Manual*, Chapter 1000 "Bicycle Transportation Design," latest edition. Bike paths shall have a ten–foot minimum width. Testing for expansive soils may be required in areas where bike paths are planned. Designs exceeding Caltrans standards may be required, if warranted by soil conditions.

1.2 Asphalt concrete for bike paths shall be Type "A" or "B" in accordance with Caltrans Standard Specifications (½-inch maximum aggregate and medium grading).

2. Concrete Walks

2.1 Concrete walks shall be constructed in accordance with City Standard Details, and Standard Specifications for Public Works Construction (latest edition), unless noted otherwise. If tree wells occur within sidewalk paving, then four–foot clearance shall be maintained between tree trunks and edges of sidewalk to allow for pedestrian access.

2.2 Multi–family residential, commercial, and industrial developments shall provide convenient separate access for pedestrians from streets to main building entrances.

3. Lighting

Lighting designed to accent landscape features, buildings, and signage shall be located on private property, not in public rights–of–way unless approved by the City Engineer. Lighting systems approved within public rights–of–way shall utilize available line voltage (low voltage systems prohibited), and shall be designed by qualified electrical engineers. Electrical plans shall be submitted with landscape improvement plans, and shall be approved by City Engineer. Refer to the Menifee Municipal Code, Chapter

6.01, Dark Sky/Light Pollution Ordinance for lighting requirements and “dark skies” restrictions.

4. Landscaped Setbacks along Major Roads

   Setbacks between property lines and sound attenuation walls, as determined by noise attenuation studies, shall be established for major roads. Setbacks shall be landscaped with appropriate low maintenance planting that effectively screens sound walls. Landscape setbacks shall be a minimum of five feet wide, excluding wall footings.

5. Concrete Mow Curbs

   5.1 Concrete shall be a mixture of general purpose Portland cement, clean water, and aggregates.

   5.2 Concrete admixtures may be used with approval of the City Engineer.

   5.3 Concrete shall be Class 560–C–3250 with a minimum compressive strength of 3,250 psi at 28 days.

   5.4 Mow curbs adjacent to pilasters and walls shall maintain minimum width as shown on plans.

   5.5 Ends of mow curbs shall meet hardscape elements and walls with expansion joint separations.

6. Decomposed Granite Paths

   6.1 Paths shall have edges to contain decomposed granite, such as redwood 2x6 headers or concrete mow curbs.

   6.2 Subgrade shall be well–compacted, well–drained, and treated to control vegetative growth.

   6.3 Decomposed granite shall be wetted and compacted to 90 percent relative density after placement.

7. Asphalt Concrete Pathways

   7.1 Subgrade shall be treated with City–approved soil sterilant in accordance with manufacturer’s recommendations.

   7.2 Subgrade shall be scarified to depth of six inches and compacted to 90 percent relative density.

7.3 Asphalt concrete shall be three inches minimum thickness over compacted subgrade in accordance with Standard Details.

8. Bus Stops: Contact City's Community Services Department for approved bus stop shelter design.

9. Chain Link Fencing and Gates

9.1 Concrete for footings and other improvements shall be Class 560-C-3250.

9.2 Fence posts, rails, and braces shall be Schedule 40 galvanized steel pipe in accordance with ASTM A12053.

9.3 Chain link fabric shall conform to ASTM A392. Fabric shall be nine–gauge for fences over 60 inches in height (11–gauge for fences 60 inches high and less). Fabric shall be woven into 1¾–inch mesh and galvanized after fabrication.

9.4 Hinges, fittings, latches, and post tops shall be of galvanized metal.

9.5 Reinforcing tension wires shall be at least seven–gauge galvanized coil spring steel wire. Tension bars used in fastening fabric to end and corner posts and gate frames shall be galvanized high carbon steel bars not smaller than $^{3}/_{16}$ x ¾ inches.

9.6 Truss and tension rods shall be adjustable 3/8–inch diameter galvanized steel rods. Adjustment shall be provided by galvanized turnbuckles or other approved tightening devices.

9.7 Installation of chain link fencing shall be in accordance with Standard Specifications for Public Works Construction, and City of Menifee Standard Drawings.

10. Recreational Trail Fences shall be installed in accordance with Appendix B for "Recreational Trail Design Standards".

11. Concrete Masonry Unit (CMU) walls shall be subject to review and approval by the City of Menifee Community Development, Engineering/Public Works, and Building & Safety Departments.

SECTION 8. ENGINEERING/PUBLIC WORKS LANDSCAPE DESIGN & MAINTENANCE

A. GENERAL REQUIREMENTS

1. This section outlines the requirements of the City of Menifee for design and maintenance of landscapes created by new developments, the maintenance of which is financed through developer fees and assessments levied annually on property owners for Community Facilities District (CFD) improvements. These standards shall also apply to Engineering Department Capital Improvement Projects (CIP) and Lighting & Landscape Maintenance District (L&LMD) landscape improvements.

2. Conceptual plans for each new development or CFD project require review and approval by the City. These plans shall identify CFD project boundaries including CFD, utility and City–held easements; street medians; City–dedicated open space and rights–of–way; creeks; parks; and recreational trails. Conceptual landscape plans shall identify areas to be landscaped and display the landscape treatment of the development or project. Conceptual landscape plans shall be approved as a condition of tentative tract maps, conditional use permits, and other discretionary actions.

3. Comprehensive landscape plans for CFD areas shall be reviewed by the City and shall conform to requirements in this Section related to workmanship, materials, and equipment in public rights–of–way and other City–dedicated areas of public works landscape improvement projects.

    3.1 The Title Sheet shall note the square footage of CFD areas.

4. Plans shall be prepared in conjunction with final approved Grading Plans and Conditions of Approval. CFD plans shall be completed and approved prior to issuance of building permits.

5. The City may authorize extensions of time schedules relating to conceptual CFD plans, comprehensive landscape plans, and completion of landscape improvements due to extenuating circumstances.

6. CFD/Public Works landscape maintenance requirements can be found in Subsection D below.

    6.1 The required landscape maintenance and plant establishment period for CFD areas (excluding parks and capital improvement projects) shall be one year, unless noted otherwise. The warranty period for all CFD and public projects shall be one year from date of City acceptance.

6.2 The Contractor shall continuously maintain landscaped areas within public rights–of–way and CFD areas during the progress of work and establishment period until final acceptance of work by the City.

6.3 The City reserves the right to assume maintenance of projects at the Developers' or Contractors' expense during the establishment period. Developers and Contractors may also request, at their expense, that the City assume maintenance responsibilities of the project.

7. Bonding for CFD Improvements

Bonds are required by the City of Menifee in accordance with the approved bonding estimate submitted with the landscape plans. CFDs include recreational trails, parks, landscaped rights–of–way, landscaped easements, medians, and open space, which are considered public improvements. Cash deposits and certificates of credit may also be used to bond projects. Bonds shall be posted with the Engineering/Public Works Department. If the Director of Public Works/City Engineer determines that maintenance work is not being performed to standards established within this manual, then the maintenance period shall be extended. Bonds held against projects shall not be released until CFD areas are satisfactorily maintained in accordance with these requirements, and City Council acceptance of all landscape improvements.

8. Refer to Sections on "Water Conservation," "Irrigation," and "Planting" of this manual for additional requirements not contained in this Section. Refer to Section 9 of this manual for pre–installation, installation, and post–installation inspection requirements.

B. DESIGN REQUIREMENTS

1. Street Parkway and Median Island Design Standards (Off Site)

1.1 Drip or bubbler irrigation (low volume) only shall be utilized in these areas.

1.2 Planting areas shall be within 100 feet of quick coupling valves.

1.3 Medians and parkways shall have separate water and electrical meters and services unless otherwise approved by the City.

1.4 Automatic irrigation controllers shall be as manufactured by Calsense, 2075 Corte del Nogal, Suite P, Carlsbad, CA 92011 (800.572.8608) unless otherwise approved by the City. Consultants shall provide a "Calsense Design Memo" from the manufacturer's representative prior to irrigation plan approval to verify that the controller assembly includes proper specifications to integrate into the City's central irrigation control system.

1.5 Irrigation piping and control wiring shall be located in PVC sleeves where crossing of public streets is required.

1.6 Medians shall have 18–inch wide (minimum) maintenance walks adjacent to six–inch wide curbs around planting areas. Paving material shall be approved by the Engineering Department.

1.7 Medians that are five feet in width and less, shall receive enhanced paving only (no planting). Enhanced paving shall be concrete paving with special finish treatment, such as color, pattern, texture, or a combination thereof, to enhance appearance of paved areas.

1.8 Plant material in medians adjacent to turning lanes and left turn pockets, and other areas where sight distance is critical, shall be 24 inches and less in height (or enhanced paving as approved by the City).

1.9 Turf grasses (lawn) shall not be planted in medians and parkways.

C. SYSTEMS AND MATERIALS REQUIREMENTS

All landscape construction materials and methods for public works/CFD projects in the City of Menifee shall conform to the "Standard Specifications for Public Works Construction" ("Greenbook"), latest adopted edition including modifications and supplements. Greenbook specifications are referenced, and the modifications and supplements are contained, in Appendix G of this manual.

D. LANDSCAPE MAINTENANCE — GENERAL REQUIREMENTS

Requirements for acceptance of CFD/public works landscape improvements are outlined in Section 9, "Inspection and Acceptance of Improvements."

1. The objectives of this Section are general results to be specified by designers, and achieved by Contractors in their methods of performing work. The purpose of these objectives is to allow Contractors to assist in interpreting requirements for long–term appearance of landscaped areas, and to ensure that design criteria and objectives established by the City are met. If specified methods are not adequate to meet general appearance requirements, or if additional work and special maintenance programs are required, Contractors shall adjust maintenance schedules accordingly, with approval of the City.

2. City of Menifee has established the goal of CFD landscapes to visually unify various land uses, maintain high standards of quality for community appearance, lower urban temperatures, and reduce water used for landscape irrigation.

2.1 The objective of these landscape plantings is to establish an informal, natural appearance. Pruning activities that create formal hedge and topiary effects shall be avoided. Lawns should be minimized and well–groomed, and ground covers should be maintained to have sharply defined edges adjacent to hardscape improvements.

2.2 Landscaped areas such as street median islands, and parkways and slopes adjacent to streets, trails, and sidewalks, shall have a well–maintained appearance. Trash, as well as dead branches, leaves and flowers, should be removed from plants and landscaped areas on a continuous and regular basis, with extra attention to the appearance of highly visible areas.

2.3 Plant masses (except groundcovers) shall be allowed to develop informal edges adjacent to structures, masonry, and other landscape elements.

2.4 In general, plant material in CFD landscaped areas shall be selected for low water use characteristics, with a gradual transition made from normal water use during the plant establishment period, to a reduced water use situation once established. This transition shall take place over a three to four month period. Irrigate only as required to allow water penetration through soil to maximum rooting depth, avoiding any run–off. After plant material is established, water only to maintain healthy plant growth.

3. Scope of Work—CFD Maintenance

3.1 Contractor shall furnish labor, equipment, materials, tools, services, and special skills to perform complete landscape maintenance of CFD areas. Scope of work shall include, but not be limited to irrigation, pruning, shaping, trimming, and training of trees, shrubs and ground cover plants; tree surgery; fertilization; cultivation; weed control; control of plant diseases and pests; mowing, thatching, and aeration of lawns; sweeping; maintenance and repairs of trails, pathways, irrigation, and drainage systems, including natural drainage features; litter removal; removal of illegal dumping; plant replacement and other work required to maintain CFD and public landscaped areas in a safe, attractive, and usable condition. Plant material shall be maintained in healthy condition with horticulturally acceptable growth and color.

3.2 Maintenance standards in this manual shall apply to work of Developers and Contractors during the required maintenance period for Lighting & Landscape Maintenance District (L&LMD) improvements, CFD contract maintenance areas, City parks, and Capital Improvement Projects.

3.3 Contractor shall submit Maintenance Schedule Charts approved by the City. Schedule of maintenance operations shall include, but not be limited to, tree pruning; weed control; insecticide and herbicide application; fertilizer types

and frequency of application; growth inhibitor application; thatching, mowing, and aeration of lawns. Contractor shall provide irrigation controller schedules with controller identification numbers (keyed to as–built irrigation plans), station numbers, cycles per day, total time per station per week, and comments to City for approval prior to start of the plant establishment period.

E. IRRIGATION SYSTEM MAINTENANCE

1. Irrigation systems shall be operated efficiently to conserve water and maintain healthy plant growth. Application of water should consider soil types, topography, weather conditions, and be tailored to distinct planting areas (hydrozones). Special attention shall be directed to slopes to avoid prevent soil saturation and run–off. Contractor is responsible for replacing plant materials that die because of poor irrigation scheduling.

2. Contractor shall observe irrigation systems while functioning at least once every week to ensure proper and efficient operation.

3. Contractor shall maintain irrigation equipment to provide proper coverage and operating capability. Adjust irrigation systems to prevent excessive run–off and overspray into streets, sidewalks, rights–of–way, and other areas not intended to be irrigated. Sprinkler heads shall be maintained and adjusted, clean, and free from plant growth that may obstruct normal operation. Valves and heads shall be adjusted to keep systems operating at design pressures. Pressure–regulating valves and pressure–compensating screens shall be employed to prevent heads from fogging.

4. Contractor shall check weather and rain sensors monthly throughout the year to verify that sensors function properly. Normal controller schedules shall be bypassed if rainfall is sufficient to meet landscape water requirements.

5. Areas where irrigation system is temporarily inoperable shall be hand watered by Contractor to insure healthy and thriving plant material. Contractor shall be responsible for providing equipment, nozzles, hoses and couplers to accomplish the task.

6. Contractor shall replace plants lost due to irrigation system malfunctions, except malfunctions caused by natural disasters. Contractor is responsible for, and shall prevent to the greatest extent practicable, irrigation water run–off and overspray that impacts surrounding properties, and creates traffic hazards.

7. Remote control valves shall not be operated manually unless electrical power is unavailable or temporarily interrupted, except for testing and periodic valve maintenance.

8. Moisture sensors and weather stations/sensors shall be monitored and adjusted monthly (or as required) by the Contractor to assure proper performance.

9. Repairs to irrigation systems shall be made in accordance with original contract documents. Contractor shall make required repairs and operate systems as originally intended.

10. Contractor shall submit copies of irrigation schedules for automatic controllers to City for approval.

11. Irrigation system repairs caused by conditions over which Contractor has no control shall be performed by others, or paid for by the City. Repairs under this category shall be "extra work" and are noted below:

    11.1 Loss due to theft

    11.2 Storm damage and other natural occurrences

    11.3 Damage by vandalism, and accidents caused by other than Contractor and his/her employees.

12. Contractor shall adjust heights of sprinkler risers to compensate for growth of plant materials.

13. Strainers at backflow preventers shall be flushed out semi–annually as a preventative maintenance measure.

14. Drip and bubbler irrigation (low volume) systems

    14.1 Strainers and filters shall be cleaned monthly, or as required, to maintain efficient operation.

    14.2 Manual flush valves shall be flushed monthly, or as required, to eliminate accumulated debris in irrigation lines.

    14.3 Plant growth and vigor shall be monitored closely for signs of stress due to lack of water, which may indicate clogged emitters and other system malfunctions.

    14.4 System pressure shall be monitored periodically to ensure proper emitter operation.

F. PLANTING MAINTENANCE

1. Trees

Trees are a vital element of community character and provide important environmental benefits. The City's goal is to maintain trees in CFD areas, parks, and other public area facilities in a healthy, vigorous, and growing condition for current and future residents. The objective of the following guidelines requirements is to promote proper tree maintenance.

1.1 Pruning

a. Trees shall be pruned for safety and appearance, and to encourage sound structure, healthy growth, and good form. Pruning shall be supervised and performed by certified consulting arborists and qualified tree care personnel utilizing proper arboricultural practices.

b. Contractor shall provide pruning and tree care in accordance with professional tree care industry standards, including Western Chapter of the International Society of Arboriculture and National Arborist Association standards.

c. Evergreen trees shall be thinned out and shaped when necessary to prevent wind and storm damage. Major pruning of deciduous trees shall be performed during the dormant season. Damaged trees, and those that constitute health and safety hazards, shall be pruned when necessary to improve poor appearance and structure, as directed by the City's representative.

d. Pruning cuts shall be made just above lateral branches and buds, or just outside branch bark collars, utilizing natural target pruning practices. "Stub cuts" and "topping" shall not be permitted.

e. Tree pruning shall be performed in accordance with ANSI Safety and Tree Care Standards, latest published editions. Contractor shall observe adequate safety precautions for protection of tree workers and the public.

f. No more than 25 percent of a tree's foliage shall be removed during pruning operations unless authorized by the City representative.

g. Trees shall be pruned periodically (through maturity) to achieve adequate vertical clearances for vehicles and pedestrians.

h. Lower branches of young trees shall not be removed except for safety purposes. Lower branches may only be "tipped back" to encourage caliper growth large enough to support trees without stakes and guys.

i. Surface tree roots that present maintenance and/or safety problems may be removed or pruned upon approval by the City, especially those adjacent

to paved areas. Surface roots shall be properly pruned, treated, and covered without delay.

j. If necessary, trees shall be trimmed during the dormant season only (November 15th to February 15th) to reduce pruning shock, allow sufficient recovery time for maximum summer shade, and lessen possibility of insect infestation.

1.2 Watering and Mulching

a. Watering basins shall be maintained around tree root balls during plant establishment periods. Irrigate as needed to establish adequate moisture throughout plant root zones.

b. Deep–rooting of trees is desirable and can be encouraged with appropriate irrigation scheduling and frequency of irrigation cycles.

c. Mulches shall be maintained at least three (3) inches deep to reduce evaporation and weed growth. Do not apply mulch in contact with tree trunks (maintain 6 inches clearance minimum).

d. Soil moisture checks shall be made periodically at locations representing various climatic exposures and plant material types. Soil moisture probes shall be used to check moisture in root balls and surrounding soil. Moisture requirements of plants shall determine watering frequency and timing by automatic irrigation systems.

1.3 Fertilizer Application and Pest Control

a. Fertilizers shall be City–approved, balanced commercial types determined by soils testing. Fertilizers should be applied to entire root zones of trees. Gently cultivate and thoroughly water fertilized areas to prevent burning tree roots. Apply fertilizers at minimum rates required to keep trees healthy and vigorous.

b. Unhealthy and/or stunted trees that fail to meet horticulturally acceptable standards for growth and vigor shall receive appropriate supplements to correct nutrient deficiencies.

c. Plant pests and diseases, and weeds, shall be controlled with proper application of insecticides, fungicides, and herbicides. Tree wells shall be weeded monthly.

d. Pesticides and herbicides shall be applied by licensed and certified pest control applicators.

1.4 Staking and Guying

a. Tree stakes, ties, and guys shall be checked monthly and adjusted if necessary. Ties shall be adjusted to prevent girdling of tree trunks. Broken stakes and guy wires shall be replaced. Stakes, ties, and guys shall be removed as directed by the City Representative.

b. Re–stake trees as deemed necessary by the City with two–inch diameter by ten–foot long treated lodge pole stakes. Tree ties shall be flexible vinyl straps. Nail straps to sides of stakes with one–inch roofing nails.

c. Stakes on fast–growing tree species, such as Eucalyptus species, shall be removed one year after planting, or at the start of the next growing season, whichever comes first.

d. For trees other than fast–growing species, existing stakes and guys shall be removed after two years, or after trees attain a trunk caliper of four inches. If trees are unable to support themselves, removal of stakes shall be determined by the City.

e. In CFD areas, 15 gallon size trees shall be double–staked, 24– and 36–inch box size trees shall be double–staked or guyed, and trees larger than 36–inch box size shall be guyed, unless directed otherwise by City representative.

2. Shrubs

Shrubs shall be maintained to promote vigorous and healthy growth in accordance with standard horticultural practices. Utilize proper pruning techniques, fertilizer applications, and pest control procedures.

2.1 Pruning

a. Prune shrubs as required to maintain public safety, as well as general health and appearance of plants.

b. Shrubs shall not be clipped into topiary forms. Natural characteristics and branching structure of plants shall be retained.

c. Pruning cuts shall be made just above lateral branches and buds, and just outside branch bark collars. “Stubbing” shall not be permitted.

d. Pruning shall be accomplished by removing woody stems from inside of shrubs at least twice yearly. Heading back of shrubs shall be performed

only after completion of interior selective branch pruning. Shrubs shall not be sheared and hedged unless directed by the City.

e. Dead flower stalks and spent blossoms shall be removed regularly to present a tidy, well–groomed appearance.

2.2 Fertilizer Application and Pest Control

a. City–approved balanced commercial fertilizers shall be applied to promote optimum growth and vigor. Fertilizers shall be watered in after application to prevent burning of plant tissues.

b. Insecticides, fungicides, and herbicides shall be applied as necessary by licensed pest control applicators only.

2.3 Mulches shall be maintained uniformly at least three (3) inches deep to reduce evaporation and weed growth. Do not apply mulch in contact with shrub stems.

3. Vines

Vines shall be maintained to promote vigorous and healthy growth in accordance with best horticultural standards. Utilize proper watering, tying, fertilizing, and pest control procedures to promote optimum growth.

3.1 Deep water vines in planting pockets to assure optimum growth and root depth.

3.2 Prune and maintain espaliered vines properly. Nails shall not be used in masonry walls. Secure vines with epoxy vine ties to promote directional growth.

3.3 City–approved, balanced commercial fertilizers shall be applied to promote optimum growth and vigor. Vines shall be watered after fertilizer application to prevent burning of roots.

3.4 Insecticides, fungicides, and herbicides shall be applied as necessary by licensed pest control applicators only.

4. Groundcover

Ground cover shall be maintained to promote vigorous and healthy growth according to best horticultural standards. Utilize proper trimming, fertilizing, pest control, and renovation procedures.

4.1 Trimming

a. Groundcover shall be maintained within intended planting areas. Maintain edges of planting so that groundcover does not encroach into lawns, shrub beds, sidewalks, and adjacent areas.

b. Groundcover shall be trimmed away from controller enclosures, valve boxes, quick couplers, other plants, structures and walls, and walks. Maintain well–edged beds adjacent to walks for best appearance and safety.

4.2 Fertilizer

Apply City–approved, balanced commercial fertilizers at minimum rates required to promote healthy and vigorous growth. One application should be in early spring after new growth begins.

4.3 Pest Control

a. Groundcover areas shall be cultivated regularly and kept free of litter.

b. Control weeds, insects, diseases, gophers and snails.

c. Chemical pest controls shall be applied only if necessary by licensed pest control applicators.

4.4 Renovation and Replacements

a. Groundcover shall be renovated by cutting and mowing to promote new vigorous growth. Apply City–approved, balanced commercial fertilizer after renovation of groundcover areas.

b. If replanting is required to replace dead groundcover areas, then replacements shall be determined by City, using cuttings from adjacent groundcover areas, or other approved sources.

5. Lawns

Lawns shall be maintained to promote vigorous and healthy growth in accordance with best horticultural standards. Utilize proper watering, mowing, renovation, fertilizing, and pest control procedures.

5.1 Watering

Lawns shall be irrigated to maintain healthy seasonal growth and to encourage deep rooting. Avoid daily irrigation in favor of every other day, or twice weekly. Additional irrigations may be scheduled if unusually hot and dry weather conditions prevail for extended periods of time. Lawn areas shall not be in soggy, saturated condition, especially before mowing and aeration operations.

5.2 Mowing and Edging

a. Lawns shall be mowed to an optimum height on a weekly basis during growing seasons. Frequency of mowing should decrease during cooler months. Rotary and reel (for Bermuda grass) mowers with sharp blades shall be used. Avoid removing more than one–third of grass blade length at one mowing.

b. Damage to trees, obstacles, and lawns caused by wheel ruts shall be repaired by Contractor. Grass clippings shall be mulched in place with mulching mowers.

c. Trimming and edging shall be performed weekly. Frequency of trimming and edging may need to be adjusted during cooler months.

5.3 Renovation

a. Lawn areas shall be renovated yearly when the least amount of stress to lawns is likely, usually in winter. Scheduling shall be recorded on Maintenance Schedule Charts approved by the City.

b. Lawns shall be mechanically aerated with plug aerators (one–half inch tines minimum) at least yearly to reduce compaction and improve water penetration to roots. Hybrid Bermuda grass shall be verticut as required to remove thatch.

c. Shaded and well–worn areas of lawn shall be re–seeded with approved seed species.

5.4 Fertilizing

City–approved, balanced commercial fertilizers should be applied to keep lawns green and healthy. Fertilizer types will vary seasonally in accordance with good turf management practices.

5.5 Pest Control

a. Lawn areas shall be inspected regularly for signs of diseases and pests. Contractor shall have licensed pest control applicators apply appropriate controls at recommended rates.

b. Contractor shall maintain weed–free lawns by approved means. Contractor shall exercise caution if applying chemicals to control weeds to avoid damage to lawns and adjacent areas. Before herbicide applications are made, lawns should be well–established and in vigorous condition.

6. Hydroseeded Planting

Hydroseeded areas shall be maintained in the same manner as ground cover areas.

7. Pest Control

7.1 Contractor shall provide complete and continuous control and eradication of plant pests and diseases, including weeds. Comply with City, County, State, and Federal regulations and laws regarding chemical controls.

7.2 Contractor shall assume liability and responsibility for use of chemical controls.

7.3 Procedures for chemical use shall follow those outlined by State of California Department of Food and Agriculture, and County of Riverside for safe handling of pesticides, fungicides and herbicides.

7.4 Contractor shall obtain all necessary licenses for application of pesticides.

8. Weed Control

8.1 Basins and planting areas shall be free of weeds. Trees in lawn areas shall have 36–inch diameter mulched circle maintained around bases of trunks. Avoid damage to tree trunks and roots by machinery and excess water. Properly applied growth regulators may be used to control vegetation in open areas around trees. Use mulches to help prevent weed seed germination. Weeds that have germinated shall be eradicated (do not use string trimmers near tree trunks) within three weeks of germination, or before setting seed.

8.2 Weeds shall be completely removed from lawn and shrub areas, groundcover beds, and planters. Remove weeds weekly from cracks in paved areas: sidewalks, curbs, asphalt, hardscape, and areas covered with ornamental rocks. For the purpose of these requirements, weeds will be considered as “any undesirable or troublesome plants.” Weeds shall be controlled by hand, mechanical, or chemical methods. The City may restrict use of chemical weed control in certain areas.

8.3 Groundcover and hydroseeded plants that occur within four feet of improved surfaces (sidewalks, service roads, and pathways) should be continuously trimmed so that height does not exceed 12 inches.

8.4 Invasive plants are unacceptable in CFD–maintained areas, and shall be promptly removed.

8.5 Annual plants over six inches in height shall be mechanically controlled upon completion of growth cycle in areas deemed necessary by the City.

8.6 Open space areas adjacent to homes shall be kept free of weeds.

8.7 Weeds shall be removed in street median islands, including those growing in paved and unpaved areas.

9. Fertilizer Application

9.1 Contractor shall inform City at least 48 hours before beginning fertilizer application. Contractor shall have previously submitted schedules showing sites, dates, approximate times of fertilizer application, type of fertilizer and quantity of fertilizer to be applied.

9.2 Fertilizers shall be delivered in original unopened containers bearing manufacturers' guaranteed analysis. Damaged packages will not be acceptable to the City. Contractor shall furnish the City with duplicate signed, legible copies of certificates and invoices for fertilizer. Invoices shall state grade and quantity of fertilizer delivered to site. Copies retained by the City and Contractor shall be signed by the City's Representative before materials may be used. Contractor shall not begin fertilizer application until requirements noted above have been met.

9.3 Fertilizers shall have City–approved guaranteed analysis. Contractor shall follow manufacturer's recommendations for rates of application.

9.4 Fertilizers shall be applied to lawns as recommended by soils test results and at times noted below.

- Nitrogen: as needed to maintain health and appearance
- Complete: October 1-15, March 1-15

9.5 Fertilizers shall be applied to shrubs, groundcover, and small trees (three-inch caliper and smaller) at times noted below.

- Complete: March 1-15, July 1-15, October 1-15

9.6 Adequate irrigation shall precede and immediately follow applications to carry fertilizers into soil. After fertilizer applications, adjust irrigation schedules to eliminate runoff and leaching of fertilizers.

9.7 Weather conditions may require adjustments to fertilizer application schedules. If possible, avoid application of fertilizers prior to forecast of windy weather and heavy rains.

9.8 Precautions shall be taken during broadcast application of fertilizers with cyclone spreaders to avoid overthrow onto paved areas. Use of gravity flow spreaders is encouraged to keep fertilizers contained in planting areas, eliminating or reducing sidewalk stains.

9.9 Fertilizer tablets shall be applied to new replacement trees and shrubs at required rates noted in Section 5, "Planting Requirements," of this document. Tablets (21–gram) shall also be applied to trees and shrubs that require supplemental fertilization. Annual fall fertilization of trees and shrubs shall be at the rate of one 21–gram tablet for each one–half inch of trunk caliper. Place tablets six to eight inches into root zones with soil probes and water in thoroughly.

10. Replacement of Plant Material

10.1 To ensure vigorous, healthy growth and pleasant appearance of plantings in CFD areas, it may be desirable to replace plants periodically. Plant replacement shall be determined by the City. Plants may be provided and installed by City forces at no expense to Contractor (if plants are not under Developer's or Contractor's guarantee/warranty), or may be replaced by Contractor with cost negotiated prior to planting.

10.2 Contractor shall notify City representative within two days of plant material losses due to any cause. Dead plants that are not replaced within one week after notification will be replaced by the City at Contractor's expense.

10.3 Contractor shall supply labor and materials to replace plants that are damaged or die resulting from Contractor's faulty maintenance or negligence. Container sizes and species of replacement plant materials shall be determined by the City Representative.

10.4 Plants damaged due to storm events or other natural causes, vehicular damage, theft, or events not resulting from negligence or inadequate performance of work by Contractor shall be replaced–in–kind with sizes as approved by the City. At City's request, Contractor may supply and install replacement plants selected by City's Representative, and shall bill total replacement costs separately from normal maintenance billing.

10.5 Replacement planting shall conform to the requirements herein.

G. MAINTENANCE OF OPEN SPACE AREAS

Open space areas designated by easement or dedication are necessary to protect resources, relieve density of community development, and provide greenbelt buffers between built–up neighborhoods.

1. The City's goal is to establish healthy native plant communities in designated open space areas, and to maintain these areas as close as possible to natural conditions prevailing in the region.

2. The City Engineer and/or Public Works Maintenance Operations Manager shall determine maintenance activities and practices in open space areas that best meet public works requirements for safety and appearance.

3. Litter and trash removal shall be scheduled monthly, or more often as required.

H. CLEAN–UP

1. Contractor shall promptly remove landscape debris generated by pruning, trimming, weeding, edging, and other work required in CFD–maintained areas. Areas near public streets, walks, driveways, and paved areas shall be cleaned immediately with suitable equipment. Debris and green waste shall be removed and disposed of off–site in a legal manner. No debris will be allowed to remain in CFD public areas at end of work days.

2. Contractor shall remove litter from CFD areas immediately. Litter shall include, but is not limited to, bottles, animal droppings, cans, paper, cardboard, metallic items and other debris, and illegally dumped materials.

3. Shrub areas not planted with ground cover shall be raked, weeded, and cultivated at least twice monthly.

4. Walks shall be kept clean and free of soil, debris, and hazards to foot traffic at all times during maintenance operations.

SECTION 9. INSPECTION AND ACCEPTANCE OF IMPROVEMENTS

A. GENERAL REQUIREMENTS

1. The purpose of inspections on landscape projects is to determine substantial conformance to approved landscape plans, and to verify project Conditions of Approval are met prior to acceptance of the project by the City.

2. Inspections by the City's Representative are required during installation of landscape improvements on all projects. Inspections shall be made and work accepted by the City's Representative before projects can receive final acceptance from the City. Contractor shall request inspections by notifying the City at least 48 hours (two working days) in advance of scheduled inspection times. Notification should be made by Owner's or Developer's representative, and only when Contractor agrees that work is completed and ready for inspection. If scheduled inspection visits cannot be performed due to incomplete work or Contractor's absence, then Owner/Developer will be charged for additional time for rescheduled inspections.

3. Changes

    3.1 Revisions to approved landscape plans shall be reviewed and accepted by the City before work is performed, to verify that the revisions are consistent with original construction documents. Submit two sets of revised plans to the City for review. Refer to "Submittal Requirements" for additional information.

    3.2 Changes in the field to approved landscape construction documents (materials and installation) shall be prohibited unless written approval of changes are provided by the City's Representative. Approved field changes shall be reflected on record drawings submitted to City at project closeout.

B. INSPECTION REQUIREMENTS—PUBLIC WORKS/CFD AREAS

1. Work items listed below are subject to inspection by the City's Representative. Inspection requirements are variable from project to project, and shall be determined during the plan review and approval process. However, additional inspections other than the following may be required during the course of work as determined by the City's representative.

2. Required inspections (some may be combined into one site visit, if possible):

    2.1 Pre–construction meeting prior to start of work

    2.2 Grading and Construction

a. Finish grading.

b. Staking of flatwork.

c. Concrete formwork and reinforcement.

d. Trail improvements.

e. Boulder placement.

2.3 Irrigation

a. Trenching for irrigation main lines and lateral pipe.

b. Installation and pressure testing of main lines and lateral lines prior to backfilling trenches.

c. Installation and testing of backflow prevention devices, remote control valves, control wires, and automatic controllers.

d. Operation and coverage tests (prior to planting) after irrigation system completion.

2.4 Planting

a. Soil preparation and application of amendments (supply delivery slips and invoices).

b. Completion of finish grading prior to planting.

c. Approval of plant materials upon delivery to site.

d. Tree and shrub locations, before excavation of planting pits.

e. Installation of plant material.

2.5 Completion and Maintenance

a. Approval/acceptance of completed landscape installation, start of maintenance period.

b. Final site inspection at completion of maintenance period.

c. Additional inspections may be required as determined by the City's Representative.

3. CFD Inspections

3.1 Initial inspections of completed CFD area landscape improvements shall be performed prior to start of the maintenance and plant establishment period. Work shall be complete and in accordance with City requirements as determined by the City representative.

a. Upon completion of irrigation installation, the entire Calsense controller assembly(s) shall be inspected and tested for proper connections, and complete and full operation by the Calsense field service representative, including full and proper operation and interface with flow sensor, sensor data interface, master control valve, and other sensor components as installed. Written certification of installation and operation in accordance with manufacturer's specifications shall be provided to the City's representative.

3.2 Projects in CFD areas that have not been maintained to City standards during maintenance period shall be held without acceptance until requirements and conditions of the project and City have been met.

3.3 Final inspections of CFD improvements shall be performed at the end of the maintenance period. City representative will determine whether or not maintenance requirements have been met by Contractor prior final acceptance/notice of completion. Refer to CFD acceptance procedures in Subsection D below.

C. INSPECTION REQUIREMENTS—PRIVATE DEVELOPMENT

1. The following inspections shall be performed on private development projects (not maintained by City or CFD):

1.1 Pre–construction meeting.

1.2 Installation and hydrostatic test of pressure main line pipe prior to backfilling trenches.

1.3 Testing and certification of backflow prevention devices; certificate from qualified backflow tester is required prior to final acceptance.

1.4 Installation of irrigation valves, wiring, and automatic controller.

1.5 Operations test (prior to planting) after completion of irrigation system.

1.6 Review of soil test report; provide delivery slips and invoices for soil amendments.

1.7 Review and acceptance of street trees prior to planting.

1.8 Acceptance of completed landscape installation prior to occupancy. Controller assemblies shall be certified in writing by the manufacturer's or distributor's representative. Certificate of Completion, filled–out and signed, shall be provided to the City's representative.

1.9 12month post–installation inspection. This inspection is required to be passed for release of performance securities.

a. Contractor shall arrange for the irrigation controller manufacturer's representative to be present at the inspection for bond release to verify that the controller is functioning properly, and that maintenance personnel are familiar with controller capabilities and are operating the system within design parameters.

1.10 Additional inspections may be required as determined by the City's Representative.

2. Landscaped areas shall be maintained in a healthy and thriving condition—free of weeds, trash, and debris. Dead plants shall be replaced in–kind with new healthy container stock.

3. A Certificate of Completion shall be submitted to the City's Community Development Department pursuant to Chapter 15.04 MMC.

D. ACCEPTANCE OF IMPROVEMENTS—GENERAL REQUIREMENTS

Refer to Section 8 of these standards for CFD public works landscape design and maintenance requirements.

Acceptance of CFD and public works landscape improvements by the City will be made after work is substantially complete in accordance with approved construction documents and City of Menifee landscape standards. Maintenance/plant establishment and warranty periods shall be for the following time periods unless otherwise approved by the City:

- Parks: Owner or agent in control of properties shall maintain planting and irrigation systems for ninety (90) calendar days. Warranty period shall be for one (1) calendar year.
- CFD areas, except parks: Owner or agent in control of properties shall maintain planting and irrigation systems for one (1) calendar year. Warranty period shall be for one (1) calendar year.

- All other public works projects: As specified in the approved construction documents.

After final inspection of improvements by City's Representative at the satisfactory conclusion of maintenance and the plant establishment period, and City acceptance of improvements, the Community Facilities District will be available to service the area for continuing maintenance, formally relieving Contractor of maintenance responsibilities.

1. CFD Public Works Acceptance Standards

1.1 Landscape improvements, walls, walkways, curbs, utilities, trails, benches, public improvements, and special conditions required within Community Facilities District and public works project boundaries shall be provided in accordance with approved construction documents prior to initial inspection and City acceptance of improvements.

1.2 Plant material standards outlined below shall be met prior to final inspection by the City's Representative.

a. Lawn: Lawn areas shall be completely filled in with grass. Turf shall be green and healthy with no discolored and dead patches, weeds, and insect pests. Turf shall be mowed weekly for at least two consecutive weeks, and at correct mowing heights.

b. Hydroseeded areas (non–turf): Plant material shall be at least three inches in height, with 90 percent coverage of hydroseeded areas. If hydroseed has not germinated within 30 days after application, then bare areas shall be re–seeded. At that time, all hydroseeded areas shall be free of weeds and litter.

c. Hand–planted groundcover: Planted areas shall be healthy, vigorous, and free of weeds and litter.

d. Shrubs, Vines, and Trees: Plant material shall be healthy, showing no signs of discoloration, injury, fungus, and insect infestation. Plants shall be pruned, trimmed, and neat in appearance. Trees shall be staked as required with approved tree ties. Nursery tape shall be removed.

1.3 Irrigation systems shall be fully functional and operating in accordance with project construction documents and City landscape standards.

2. CFD Public Works Acceptance Procedures

2.1 The City's Representative will recommend acceptance of improvements in CFD—maintained areas after initial inspections are performed. Work shall be substantially complete as determined by the City's Representative.

2.2 After initial inspection and approval of installation work by the City's representative, and provided that project Conditions of Approval have been met, the Contractor shall begin the maintenance/plant establishment period.

2.3 After initial acceptance, bonds, cash deposits, and secured letters of credit held against Developer or Contractor may be reduced. Securities will be released after satisfactory completion of maintenance/plant establishment period, and upon approval by the Director of Public Works/City Engineer.

2.4 At end of the maintenance and plant establishment period, the project shall undergo final inspection by City's representative for turnover to the CFD. Project will be approved if maintenance requirements and standards have been met by the Contractor.

3. Acceptance of other public landscape improvements after construction and maintenance period are completed shall be based on condition of the project at final inspection. City's Representative shall determine whether or not requirements have been met, procedures followed, and equipment installed satisfactorily before recommending acceptance of the project.

SECTION 10. STREET TREE PROGRAM

Street trees integrate new development into existing neighborhoods, reduce air pollution, visually buffer busy streets, and enhance the visual qualities of streetscapes. It is the intent of the City of Menifee to promote the planting and long–term maintenance of street trees. Refer to "Irrigation," Section 4 and "Planting," Section 5, for additional requirements.

A. GENERAL REQUIREMENTS

1. Planting of street and parkway trees shall be in accordance with the appropriate City ordinances and standard Conditions of Approval.

2. Trees and other landscape improvements within the public right–of–way shall not be placed in locations that would obstruct the vision of drivers and pedestrians.

3. New street tree planting in older and developed areas areas of the City shall be compatible with plantings that currently exist. New street trees shall blend with tree planting in adjacent existing residential and commercial developments.

4. Street tree planting in new developments shall generally require a theme tree for each street. There should be a variety of tree types in neighborhoods to reduce potential for disease and pest problems.

5. Minimum acceptable size of street and parkway trees shall be 15–gallon container size, unless larger tree container sizes are required by Conditions of Approval or as determined by the City during the landscape plan review process. A variety of container sizes may be appropriate for larger parkways and projects.

6. Spacing of street trees shall be 30 feet on center (average), and as appropriate to selected species. Exceptions to the requirement shall be determined by the City of Menifee Public Works/Engineering Department.

7. Street trees shall be planted in City–held or utility easements, only on approval by the Public Works/Engineering Department, and appropriate utility companies.

    7.1 Street trees are required by the City as a condition of approval for development. Property owners/developers may be required to obtain from the City a Right–of–Way Permit or Encroachment Maintenance and Removal Agreement as determined by the Public Works/Engineering Department prior to the construction of any private improvements, including installation of required street trees, in the public rights–of–way and City–held easements.

8. Street trees in residential tracts shall be planted prior to issuance of occupancy permits.

8.1 Front yards: Street trees in front yards shall be planted at the rate of three (3) trees minimum per residential lot. Two trees shall be planted on property, and one tree planted in the right–of–way (three trees may be planted on property if there is insufficient space in the right–of–way).

8.2 Required front yards trees, whether planted on property or in the right–of–way, shall be maintained by the individual property owner or Homeowner's Association.

B. PLANTING REQUIREMENTS WITHIN PUBLIC RIGHTS–OF–WAY

1. Plant Placement and Location

1.1 Plant materials (mature height) and landscape improvements (boulders, fencing, walls, etc.) over 30 inches in height shall be prohibited within landscape restricted zones at street intersections (refer to City Standard Details).

1.2 Plant materials (mature height) and landscape improvements over 30 inches in height in public rights–of–way and CFD areas shall not be placed within landscape restricted zones adjacent to driveways as follows (measured from edge of driveway—refer to City Standard Details):

a. Commercial driveways: 15 feet

b. Residential driveways: 10 feet

1.3 Trees shall be located and maintained to preserve clearance zones of at least ten feet from street lights, fire hydrants, utility poles/meters and cable TV boxes, and backs of street and directional signs to tree trunks.

a. Trees shall be planted a minimum of five feet horizontally from trunk to edge of underground utilities (verify clearances with utility companies).

b. Tree placement shall be carefully determined to avoid limiting visibility of traffic control signals and signs.

c. Comply with local utility companies' requirements for vegetative management and clearances in utility easements and adjacent to utility structures/facilities. The more restrictive requirements (City or utility) shall apply.

1.4 The following minimum clearances shall be observed when planting:

a. Trees: 30 inches from back–of–curb and edge of sidewalk to trunk;

b. Shrubs: three inches from back–of–curb and edge of sidewalk to outer spread of mature growth.

1.5 Trees within six (6) feet of hardscape improvements shall be installed with root control barriers to promote deep rooting. Root barriers shall be installed adjacent, and parallel to, hardscape—not encircling root balls. Length of root control barriers shall be a minimum of sixteen (16) feet, centered on the tree trunk. Root control barriers shall be installed in accordance with manufacturer's recommendations.

2. Plant Material Selection

2.1 Street and parkway tree species shall be approved by Public Works/Engineering Department.

2.2 Plant material selected for installation in rights–of–way and CFD–maintained areas shall have the following characteristics:

- trees shall be deep–rooting (no major surface roots)
- require minimal maintenance
- relatively free of diseases and pests
- low to moderate water requirements

2.3 Trees planted beneath overhead utility lines shall be carefully selected for mature heights less than height of wires in utility easements, and shall be approved by the utility companies prior to planting.

3. Plant Material Installation

3.1 Trees and other plant material shall be installed in accordance with Section 5 herein.

3.2 Required front and street side yard setbacks along streets and major roads (excluding sidewalks and driveways) shall be landscaped.

3.3 Areas not planted with groundcover or paved shall be covered with mulch at 3–inch depth minimum.

3.4 Trees planted in paved areas shall have adequate space for root growth through maturity. Planting area of 25 square feet minimum shall be provided for each tree.

3.5 Tree grates and trunk guards shall be utilized in paved areas with pedestrian traffic.

4. Plant Material Maintenance

4.1 Trees and shrubs shall be pruned to avoid blocking walks, building entries, windows, etc.

4.2 Mature trees shall be maintained to create the following minimum vertical clearances between sidewalks and streets, and lowest lateral branches.

- eight (8) feet above sidewalks
- thirteen feet, six inches (13'-6") above streets

4.3 Shrubs shall be maintained three inches from edge of sidewalks and back of curbs.

4.4 Planting areas shall be kept free of weeds and litter.

4.5 Property owners/HOA and developers shall permanently and fully maintain landscaped areas within adjacent public rights–of–way, which are not maintained by the City–wide CFD or L&LMD.

4.6 Trees shall not be topped. Tree pruning shall be in accordance with ANSI A300, and other currently adopted, arboricultural industry standards.

5. Irrigation Requirements

5.1 Street trees shall be irrigated with fully automatic systems utilizing low volume, low flow irrigation techniques and equipment, where practical (bubblers, drip emitters, drip tubing, etc.)

5.2 If overhead spray irrigation systems are operated adjacent to streets, then there shall be no runoff and overspray onto sidewalks and pavement.

5.3 Drip or bubbler irrigation systems only shall be installed to water planting in street median islands.

5.4 Additional requirements are outlined in Section 4, "Irrigation," herein.

SECTION 11. APPENDICES

APPENDIX A

DEFINITION OF TERMS

Agricultural Suitability Soil Test
Test to determine soil fertility, texture, pH, salinity, and alkalinity; generally includes recommendations for soil amendments.

Automatic Irrigation Controller
An automatic timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers shall schedule irrigation events using either evapotranspiration (ETo)/weather–based, or moisture sensor data.

Backfill
Soil that is replaced in a hole or trench after excavation and placement of irrigation lines or plant materials.

Building Permit
A permit to engage in a certain type of construction on a specific location.

Certified Landscape Irrigation Auditor
A person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other accredited certification program.

Community Facilities District (CFD)
An area of landscape that is the City's responsibility to maintain and is funded through assessments.

Construction Documents
A set of precise plans and details with written specifications used for the construction of a landscape project.

Developer
A person who seeks or receives permits for, or who undertakes, land development activities, and who is not a single–family homeowner. Developer includes a developer's partner, associate, employee, consultant, trustee or agent.

Director
The Director of a City department (Public Works/Engineering, Community Development, Community Services), or anyone to whom the Director has appointed or hired to administer or enforce this chapter.

Discretionary Permit

Any permit requiring a decision–making body to exercise judgment prior to its approval, conditional approval or denial.

Drip Irrigation (see “Micro–irrigation” below)

Drought Tolerant Plant
Plants that can survive drought conditions for limited periods of time.

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

Estimated Annual Water Use (EAWU)
The estimated water use in gallons per year for a landscaped area.

ET Adjustment Factor (ETAF)
A factor that when applied to reference ETo, adjusts for plant water requirements and irrigation efficiency, two major influences on the amount of water that is required for a healthy landscape.

Evapotranspiration (ETo)
The quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time period. "Reference evapotranspiration” means a standard measurement of environmental parameters, which affect the water use of plants. ETo is given in inches per day, month, or year and is an estimate of the ETo of a large field of four–inches to seven–inches tall, cool season turf that is well watered. Reference ETo is used as the basis of determining the MAWA so that regional differences in climate can be accommodated.

Grading
Any importation, excavation, movement, loosening or compaction of soil or rock.

Greenbelt
An area specifically planted to buffer differing uses; i.e., a landscaped easement along the side of a major road may buffer adjacent uses from traffic noise and fumes.

Hardscape
Any durable surface material, pervious or non–pervious.

Homeowner–provided Landscaping
Landscaping installed either by a private individual for a single–family residence or installed by a licensed contractor hired by a homeowner.

Hydrozone
A portion of the landscape area having plants with similar water needs. A hydrozone may be irrigated or non–irrigated.

Invasive Species
Any species of plant not historically found in California that spreads outside cultivated areas and may damage environmental or economic resources.

Irrigation Audit
An inspection which includes an in–depth evaluation of the performance of an irrigation system conducted by a certified landscape irrigation auditor. An irrigation audit may include, but is not limited to, inspection, system tune up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule.

Irrigation Efficiency
The measurement of the amount of water beneficially used divided by the water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices.

Landscape
A combination of plants, natural materials and intentionally/purposefully placed physical materials arranged in such a manner as to affect and enhance the design on the land.

Landscape Architect
One whose profession is the design of the land for human use and enjoyment. The practice of landscape architecture is regulated by the State of California.

Landscape Contractor
One skilled in the planting and construction of landscapes. Landscape contracting is regulated by the State of California.

Lighting & Landscape Maintenance District (L&LMD)
An area of landscape that is the City's responsibility to maintain and is funded through assessments.

Landscape Standards Manual
The manual, approved by the City Council, that establishes specific design, installation, and maintenance criteria and guidance to implement the requirements of the City of Menifee "Water Efficient Landscape Ordinance."

Landscaped Area
An outdoor area with trees, shrubs, turf and/or other vegetation. A landscaped area may include a water feature either in an area with vegetation or that stands alone. A landscaped area may also include design features adjacent to an area with vegetation. A landscaped area does not include the footprint of a building, decks, patio, sidewalk, driveway, parking lot or other hardscape. A landscaped area also does not include an area without irrigation

designated for non–development such as designated open space, or an area with existing native vegetation.

Low Head Drainage
A sprinkler head or other irrigation device that continues to emit water after the water to the zone in which the device is located has shut off.

Low Volume Irrigation
The application of irrigation water at low pressure through a system of tubing or lateral lines with low volume emitters such as drip lines or bubblers.

Mass Grading
The movement of soil as defined by the City Grading Ordinance.

Maximum Applied Water Allowance (MAWA)
The maximum allowed annual water use for a specific landscaped area based on the square footage of the area, the ETAF and the reference ETo.

Micro–irrigation (also “drip” or “low volume irrigation”)
Low volume, low pressure irrigation systems that generally deliver water directly to the root area of plants; includes drip line, micro–spray emitter, bubbler, and point–to–point systems.

Mulch
An organic material such as leaves, bark, straw or inorganic mineral materials such as rocks, gravel or decomposed granite left loose and applied to the soil surface to reduce evaporation, suppress weeds, moderate soil temperature or prevent soil erosion.

Native Plants
Plants that are indigenous to Southern California or the Southwestern United States and Northwestern Mexico.

Naturalized Plants
Plants introduced into Southern California from other places that have become established in wildlands without cultivation.

Open Space
Areas set aside for resource conservation or recreational use. Many of these areas are natural and undisturbed. Many are parks and/or recreational facilities.

Ornamental Plants
Plants that are nursery–cultivated for use in ornamental landscapes.

Overspray
The water from irrigation that is delivered outside an area targeted for the irrigation and makes contact with a surface not intended to be irrigated.

Parkway
The area of a public street that lies between the curb and the sidewalk, or between the sidewalk and the property line of an adjacent property owner. This area is used for planting or for pedestrian access.

Pervious (also “permeable”)
Any surface or material that allows the passage of water through it and into underlying soil.

Plant Factor
A factor when multiplied by the ETo, estimates the amount of water a plant needs.

Public Water Purveyor
A public utility, municipal water district, municipal irrigation district or municipality that delivers water to customers.

Recycled Water
Waste water that has been treated at the highest level required by the California Department of Health Services for water not intended for human consumption. "Tertiary treated recycled water" means water that has been through three levels of treatment including filtration and disinfection.

Revegetation
Restoration or re-creation of a self–sufficient and self–regenerating plant community on a disturbed site, with native and naturalized plant species.

Runoff
Water that is not absorbed by the soil or by plants, that is flowing from landscaped areas or the development site.

Slope
An expanse of rising or falling land, especially on a hillside.

Special Landscaped Area (SLA)
An area of the landscape dedicated to edible plants, an area irrigated with recycled water, or an area dedicated as turf area within a park, sports field or golf course where turf provides a passive or active recreational surface.

Street Trees
Trees planted along City streets for environmental and aesthetic benefit of the general public.

Subsurface Irrigation
An irrigation device with a delivery line and water emitters installed below the soil surface that slowly and frequently emit small amounts of water into the soil to irrigate plant roots.

Topsoil
Soil that is within the upper horizon of a soil profile, containing organic matter, nutrients, and the microorganisms necessary for normal plant growth.

Transitional Area
A portion of a landscaped area that is adjacent to a natural or undisturbed area and is designated to ensure that the natural area remains unaffected by plantings and irrigation installed on the property.

Turf
A surface cover of mowed grass.

Water Conservation
Water management procedures, including design and maintenance procedures, which direct their result to saving water.

Water Feature
A design element where open water serves an aesthetic or recreational function. A water feature includes a pond, lake, waterfall, fountain, artificial streams, spa and swimming pool. Constructed wetlands used for on–site wastewater treatment or stormwater best management practices are not water features.

Wildlife
Indigenous or naturalized bird, reptilian, mammalian, fish, or invertebrate life found outdoors.

WUCOLS
"Water Use Classification of Landscape Species" and refers to the Department of Water Resources publication. WUCOLS IV is the most current version. WUCOLS provides evaluations of irrigation water needs of plants in California landscapes.

APPENDIX B

RECREATIONAL TRAIL DESIGN STANDARDS

A. GENERAL REQUIREMENTS

1. Street Crossings

Recreational trails crossing City streets shall receive appropriate signs and pavement markings in accordance with City of Menifee and State of California standards. Although encouraged, use of stamped concrete and enriched paving requires approval of Director of Public Works/City Engineer. All concrete paving for trails shall be six inches thickness (min.) with a heavy broom finish.

2. Based on trail classification and soil report recommendations, trails shall be constructed as noted below. Owner or Developer shall provide structural soils tests, including soil classification, in areas where recreational trails are planned.

2.1 All developed areas, and areas with expansive soil: Excavate to six–inch depth and apply City–approved herbicide. Construct six–inch deep stabilized decomposed granite trail in accordance with City standard details.

2.2 Non–expansive soil/open space areas: Scarify trail area to a depth of six inches and remove rocks, clods, and other unsuitable material. Apply City–approved herbicide, fine grade, and compact native soil to satisfaction of Director of Public Works/City Engineer.

2.3 Community trails shall be 8 feet wide (10 ft.–14 ft. wide easement). Regional trails shall be 10 feet wide (14 ft.–20 ft. wide easement). Local feeder trails shall be 5 feet wide minimum.

2.4 Landscaped borders adjacent to recreational trails may be used rather than trail fencing, with approval of the City. Trails adjacent to streets shall have approved fencing between trails and streets.

2.5 Recreational trail fencing shall be constructed in accordance with City standards. Fencing shall occur on both sides of trails unless otherwise approved by Director of Public Works/City Engineer, or Community Services Director.

2.6 Concrete for paving, mow curbs and post footings shall be Class 560-C-3250.

2.7 Fencing for posts and rails shall be City–approved 2– or 3–rail PVC vinyl, UV–resistant material (height varies). Construction grade lodgepole fencing shall be used only with prior City review and approval.

B. TRAIL STANDARDS

1. Recreational Trail Types

Designation	Trail Width
Regional trail:	10 feet
Community trail:	8 feet
Local feeder trail:	5 feet

3. Trail Tread Design and Construction Standards

3.1 Trail Clearances

a. Vertical clearance shall be at least eight feet for pedestrian use (ten feet for bicycles, twelve feet for equestrians) from trail surface with brush, weeds, debris and rocks removed from trail tread.

b. Horizontal clearance (shoulder) shall be at least two feet free of hazards adjacent to both sides of the trail. Maintained landscaping may be allowed in areas where space is limited.

c. Where topography, right–of–way configuration, grading, and existing vegetation prevent full width construction of trails as noted above, the Public Works/Engineering Department or Community Services Department, with input from Public Works, may reduce trail width requirements.

3.2 Trail Grades and Tread Construction

a. Vertical grades:
   - 0–5% optimum (recommended)
   - 5–10% maximum for distance over 500 feet
   - 10–15% maximum for distances limited to 250 feet
   - 15–20% maximum for short distances under 100 feet

b. Switchbacks: May be required on steep slopes as a special condition.

c. Cross slopes:
   - 1–1.5% optimum (recommended)
   - 2% maximum

d. Drainage:

Prevent erosion by proper grading and use of diversionary devices such as water bars and berms.

e. Culverts:
Where trails cross over streams, culverts, bridges and stream fords shall be installed with trails.

f. Trail excavation/minor grading may be required on routes that traverse steep slopes. Grading for construction of trail treads shall be approved by the Engineering Department. Side slope cuts and fills: 2:1 maximum gradient.

g. Slopes shall be compacted to prevent erosion. Retaining walls shall be required if slopes are not compacted, or exceed 2:1 gradient.

h. Trail Surfaces:

Native soils (if suitable for construction) and decomposed granite shall be used for trail treads. Trail treads shall be cleared of rocks over one inch in diameter, debris, and roots, then surfaces graded evenly. In poor soil areas, decomposed granite or base material, with Public Works/Engineering Department approval, shall be furnished and placed.

i. Above–ground utilities, utility boxes, and concrete drainage ditches shall not be permitted within recreational trail easements.

4. Trail Structure Design and Construction Standards

4.1 General Requirements

a. Fences shall follow grades of trail treads. Posts shall be leveled and in line with one another. Fences shall follow contours of landforms upon which they are constructed. Where fencing is required on both sides of trails, fences shall run parallel and level with one another. Fences shall be constructed on easement lines.

b. Fence post footings shall be concrete. Footings shall not be visible upon completion of trail construction.

4.2 Trail Fencing Standards

a. Regional and community trails:

City–approved PVC vinyl fencing shall be provided.

b. Hazardous areas:

Other fencing materials may be required in hazardous (i.e., steep) areas.

4.3 Off Road Vehicle (ORV) Barriers

ORV barriers shall be constructed where breaks in fences occur that would allow vehicle access onto trails. If trails are dedicated to the City of Menifee, the City will provide locks upon completion of trails. ORV barriers shall be at least eight feet and eight inches in width, and attached to ends of fence posts nearest to roads.

4.4 Trail Signs

a. Trail identification signs shall be placed every one–half mile. Trail signs on community and regional trails shall be constructed in accordance with Riverside County trail design standards.

b. Hazard signs shall be constructed to County trail design standards present—for example, steep embankments and 20 percent, or greater, trail grades.

D. TRAILS MAINTENANCE (during Developer's maintenance period)

1. Contractor shall be responsible for replacing damaged fencing and mow curbs on trails. Contractor shall also reposition and maintain mow curbs that have been displaced from original positioning.

2. Shrubs and trees shall be trimmed along trails to allow safe clearance for trail users. Required vertical clearances:
   - Pedestrian Use: Eight (8) feet
   - Bicycle Use: Ten (10) feet
   - Equestrian Use: Twelve (12) feet

3. Contractor shall maintain weed–free trails with approved mechanical or chemical methods.

4. Trails shall be dragged and rolled monthly.

5. Holes greater than three inches in diameter shall be filled–in weekly.

APPENDIX C

CITY STANDARD LANDSCAPE DETAILS

Standard details for landscape and irrigation work in the City of Menifee shall be referenced on landscape construction documents for public improvement (CIP and CFD) projects. The Standard Details are updated regularly, and are available on the City of Menifee website.

APPENDIX D

GUIDELINES for LANDSCAPE IMPLEMENTATION of STORMWATER REQUIREMENTS

Implementation of landscape requirements and CASQA Best Management Practices (BMPs) related to stormwater regulations in the City of Menifee shall conform to applicable codes and ordinances, or recently adopted updates or revisions, including Chapter 15.01 MMC, Stormwater/Urban Runoff.

A. GENERAL REQUIREMENTS

Many City soil disturbance permits and approvals (including "major" and "minor" precise grading permits) are discretionary, and allow for site–specific landscape design features to accomplish pollution protection. For these types of projects and permits, the information below establishes some performance standards, and provides several available options to allow project designers to incorporate the construction and post–construction BMP features that are most practical and effective for their sites. All required water quality BMPs and bioretention basins shall be shown on landscape plans submitted to the City.

1. Landscape and Irrigation Design Considerations

    1.1 Landscaping that stabilizes disturbed soils or that filters pollutants from stormwater flows can be an effective BMP option provided continued maintenance and protection are assured.

    1.2 Vegetate slopes with native or drought tolerant vegetation.

    1.3 Direct rooftop runoff to pervious areas such as yards, rain barrels, or vegetated areas, and avoid routing rooftop runoff to the roadway or the stormwater conveyance system.

    1.4 When feasible, use permeable materials for private sidewalks, driveways, parking lots, golf cart paths, trails, or interior roadway surfaces.

    1.5 Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.

    1.6 Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plant species.

    1.7 Promote natural vegetation by using parking lot islands and other landscaped areas.

1.8 Preserve riparian areas and wetlands, and protected streams.

1.9 Use efficient irrigation systems and landscape design. Projects shall design the timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the stormwater conveyance system. The following methods to reduce excessive irrigation runoff shall be considered, and incorporated and implemented where determined applicable and feasible:

- Rain shutoff devices shall be employed to prevent irrigation after precipitation.
- Irrigation systems shall be designed to each landscape area's specific water requirements.
- Flow reducers or shutoff valves triggered by a pressure drop shall be used to control water loss in the event of broken sprinkler heads or lines.
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

2. Landscape Maintenance Requirements

2.1 Pesticides, fertilizers and other chemical products shall be used in accordance with applicable federal, state, and local laws and regulations.

2.2 Pesticides, fertilizers and other chemical products shall be stored in closed, labeled containers, under cover and off the ground.

2.3 Landscaping waste shall be properly disposed by composting on site or at an approved composting location or permitted landfill, and in accordance with environmental health regulations.

2.4 Stockpiles shall be placed away from watercourses, bermed, and covered to prevent the release of materials to the Stormwater Conveyance System or Receiving Waters, or protected areas.

2.5 Where practicable, native vegetation shall be retained or planted to reduce water, fertilizer and pesticide needs.

2.6 Areas where work is being actively conducted shall be routinely cleaned up using dry methods (e.g., sweeping, raking, etc.). Wet methods (e.g., hosing, etc.) may only be used if adequate precautions have been taken to prevent the discharge of wash water or other materials to the Stormwater Conveyance System or Receiving Waters.

2.7 The use of blowers is permitted so long as materials are collected and properly disposed. Leaving blown materials in the Stormwater Conveyance System or

Receiving Waters shall be prohibited. The Stormwater Conveyance System includes driveways, streets, curb inlets and gutters, etc.

2.8 Measures shall be taken to reduce or eliminate landscaping and irrigation runoff. Examples of practices include proper irrigation programming, programming shorter irrigation cycle times, and decreasing frequency after the application of fertilizers and pesticides. Irrigation shall be shut down during, and for a period of time after, rain events.

2.9 Fertilizers and pesticides shall not be applied several days prior to, or during, rain events.

B. Bioretention Facilities

Bioretention facilities are shallow, vegetated basins (lined or unlined), and filled with an engineered biofiltration soil media. These basins are a commonly used BMP in landscaped areas to treat stormwater runoff. The design of such facilities should utilize an integrated approach among disciplines to ensure that various basin design elements such as soil, liner materials, irrigation, trees and shrubs, and drainage function as a whole to provide maximum performance with the least amount of maintenance. An integrated design approach should also reduce the potential for conflicts between design elements—basin liners and tree root ball space requirements, for example.

Healthy plants and biological activity in the root zone within bioretention basins are critical to their function, allowing plants to maximize uptake of runoff and pollutants. The specifications for the soil mix design utilized in the basin to promote plant growth and vigor is an important consideration.

1. Engineered Biofiltration Soil Media (EBSM) Specifications

1.1 The general requirements for EBSM are to 1) provide a long–term and in–place infiltration rate as specified by project engineering documents (typically five inches per hour), and 2) to support plant growth and vigor while treating pollutants in stormwater runoff. A soil mixture of sand, sandy loam, and compost is best to achieve these requirements.

1.2 Recommended composition of EBSM shall be as follows:

a. By volume: Sand—65%; Sandy Loam—20%; Compost—15%

b. By weight: Sand—75% to 80%; Silt—10% max.; Clay—3% max.; Compost—9% max. (9% compost by weight is approx. 5% organic matter by weight)

1.3 Submittals for EBSM to the City's Representative should include manufacturer's product data and installation instructions, required substrate

preparation, soil test analysis from certified agronomic testing laboratory, and permeability rate. Manufacturer and/or supplier of EBSM shall submit a certificate of compliance to verify that the product meets or exceeds all physical property, performance, and specification requirements.

2. Mulch shall be installed on the surface of the bioretention soil after planting is complete, and if hydroseed is not applied to bioretention basins. Mulch should of a type that is not subject to floating (i.e., bark chips, etc.), which may cause clogging of overflow inlets during intense storms.

    2.1 Apply approved mulch in basin planting areas to a minimum depth of 3 inches.

    2.2 Composted mulch shall not be used in basins due to the potential for contributing pathogens and nutrients to the bioretention facility.

APPENDIX E

PARKING LOT LANDSCAPE TREATMENT

PARKING LOTS

Parking lots are a common feature of the urban landscape. Without areas of planting, these large unbroken expanses of paving are unsightly. Unshaded pavement absorbs solar energy and radiates energy back as heat, which raises urban temperatures. The intent of this Section is to reduce the negative visual and environmental effects of parking areas. Refer to Section 4, "Irrigation," and Section 5, "Planting," for additional requirements.

A. GENERAL REQUIREMENTS

1. In general, parking lot landscape standards in the City of Menifee shall conform to the requirements of the County of Riverside Ordinance 348, Section 18.12, "Off Street Vehicle Parking." Parking area landscape standards herein shall be in addition to requirements of County Ordinance 348. In case of conflict, the higher standard, or more stringent requirement, shall be enforced by the City. In addition, refer to the City of Menifee General Plan for policies regarding landscaping (Land Use Element and Community Design Element).

2. Parking lots shall be planted with trees, shrubs and vines to screen them from adjacent walkways and streets. Plant canopy trees to screen views of parking lots from upper floor windows in adjacent buildings.

   2.1 The landscape objective for new and redeveloped surface parking lots shall be to have the tree–shaded paved areas within fixed time periods after completion of landscape installations. Effective shade canopy coverage goals are based on several factors, including:

   - growth rate of selected shade tree species
   - tree spacing in parking lots
   - projected crown size of trees after fixed time periods
   - canopy area that actually shades pavement

   2.2 Trees selected to provide shade in parking lots shall have the following characteristics:

   - Moderate to fast growth rate
   - Broad spreading crown
   - Relatively clean and free of pests
   - Deep–rooting (no surface roots)

3. Parkways and pedestrian medians should be used to separate pedestrians and vehicular traffic. Planting islands shall be utilized to break large expanses of parking into smaller areas. Provide separation between vehicles and buildings with landscaped buffers.

4. Permeable pavement and stormwater detention areas within parking lots are encouraged to facilitate groundwater recharge, and to filter pollutants from runoff before entering the storm drain system.

5. Trees within six feet of hardscape require installation of root control barriers adjacent to the hardscape (not encircling root balls).

6. Trees shall not be planted closer than ten feet to lighting standards, 15 feet to driveways, and within landscape restricted zones at street intersections.

B. REQUIREMENTS FOR PARKING LOT DEVELOPMENT

1. Site Development Standards

1.1 Required landscaped areas shall occur within paved parking lots, and shall not include landscaped setbacks and buffer areas adjacent to buildings.

1.2 Parking lots shall be screened from views from public streets. Screening shall be at least 36 inches in height, except in areas where sight distance is a factor. Screening shall be accomplished with earth berms, walls, planting or a combination thereof.

1.3 Tree wells may be used to satisfy parking lot tree planting requirements. Tree wells shall be six feet square minimum (25 square feet planting area min.), face–of–curb to face–of–curb. Concrete walks are not required in tree wells.

1.4 Refer to Section 10, “Street Tree Program,” for sight distance and driveway setback requirements for landscape materials.

1.5 In parking stalls adjacent to planters, wheel stops shall be placed two feet from landscaped areas.

1.6 Landscaped areas between buildings and parking should be at least eight feet wide, not including sidewalks. Any deviation is subject to the approval of the Director of Community Development.

1.7 Setbacks between parking and property lines shall be landscaped.

1.8 Landscaped islands shall occur between every 8–10 parking spaces to break up long rows of parking. Planter islands shall be the same length as parking stalls.

1.9 Landscaped islands between rows of parking without access for pedestrians are discouraged.

1.10 Centrally located and shaded walkways for pedestrian access are encouraged in large parking lots.

1.11 In parking areas where AC paving is adjacent to concrete walkways with no landscaped buffer, site/improvement plans shall provide "half–diamond" triangular–shaped planters for trees adjacent to the pedestrian areas. Planter spacing shall be one (1) tree planter for every three (3) parking spaces.

2. Plant Material Requirements

2.1 Plants for parking areas shall be selected for low maintenance, and low water use characteristics.

2.2 Except in small parking lots, three or more tree species should be utilized to provide diversity and avoid pest problems.

2.3 Plant material container sizes for parking areas shall be as follows:

- Trees shall be planted at a minimum ratio of one 24–inch box size tree (or larger) to three 15–gallon size trees.
- Shrub planting shall be five–gallon container size plants.
- Ground cover from flats shall be planted at twelve inches on center minimum.
- Place shredded wood mulch in planter islands at a depth of three inches minimum (one and one–half inch depth in groundcover areas).

2.4 Enhanced paving is encouraged in parking lots. Use of enhanced paving shall not alter requirements for tree planting and landscaped area within parking lots.

2.5 Tall shrubs shall not be planted within five feet of ends of planter islands to provide adequate sight distance. Plant materials used in this five–foot area shall not exceed 24 inches in height.

3. Irrigation Requirements

3.1 Parking lot planting shall be irrigated with fully automatic systems. Refer to Section 4 "Irrigation," in this manual for complete requirements.

3.2 Parking lot planter islands shall utilize drip or bubbler irrigation systems only. Drip or bubbler irrigation should be used in other landscaped areas adjacent to parking lots, where practical, to eliminate overspray onto paving.

4. Tree Maintenance Requirements

4.1 If tree pruning is necessary, trees shall be trimmed during the dormant season only (November 15th to February 15th) to reduce pruning shock, allow sufficient recovery time to develop maximum canopies for summer shade, and lessen possibility of insect infestation.

4.2 Trees shall not be topped. Tree pruning shall be in accordance with ANSI A300, and all currently adopted arboricultural industry standards for proper tree care.

4.3 Trees planted for shade in parking areas shall be maintained to promote full canopy development to provide maximum shading as required by this section. Pruning to reduce canopy coverage for any purposes other than tree health, or hazard reduction, shall be strictly prohibited.

APPENDIX F

GUIDELINES for VEGETATIVE MANAGEMENT
(FUEL MODIFICATION)
in Very High Fire Hazard Areas of Riverside County

California Public Resources Code, Section 4291, established state–mandated requirements for the reduction and mitigation of "flammable vegetation or other combustible growth" around buildings or structures in, upon or adjoining very high fire hazard areas prone to wildland fires—the "development–wildland interface." The requirements are subject to local enforcement, and governing agencies may adopt additional code requirements in response to local conditions. Fuel modification plans intended to implement code requirements of vegetative fuel management for development in and adjacent to the wildland interface in the City of Menifee shall conform to County of Riverside Ordinance No. 787; Riverside County Fire Department, Fire Protection Planning Section (RCFD FPPS) Information Bulletin No. 08–05 (IB #08–05) and all other applicable codes and standards.

For additional information regarding development in proximity to high fire hazard areas refer to Riverside County Fire Department standards and requirements. Fuel modification plans required for development projects in the City of Menifee shall be reviewed and approved by the Fire Department prior to landscape plan approvals for such development by the City.

A. DEFINITION OF VEGETATIVE FUEL MANAGEMENT

To prevent the spread of wildland fires, management of vegetative fuels shall be implemented around structures and developments in and adjacent to riparian, coastal sage scrub, and grassland plant communities. Vegetative fuels shall be managed to control flame length, rate of spread, and heat intensity. Developers/Owners of structures and development projects located within and adjacent to wildland areas shall comply with Agency requirements for:

1. Fire Protection (including building design, materials, and setbacks).

2. Vegetative Fuel Management (fuel reduction and removal thinning).

3. Fire–Resistant and Low–Fuel Plantings.

B. GENERAL REQUIREMENTS

1. Fuel Modification Plans:

   Plans shall be approved by the Riverside County Fire Department prior to fuel modification work. Plans shall be based on site plans and grading plans showing elevation contours (slopes). Plans shall indicate the widths of the fuel modification

zones on the site, including slopes. Plans shall include, at a minimum: (1) plan showing existing vegetation; and, (2) plans showing location of proposed structures, roads, streets, etc.

2. Fuel modification plan review/approval by the Riverside County Fire Department shall be required prior to landscape plan approval by the City of Menifee. Agency–approved Fuel Modification Plans shall be provided as reference to the City with all landscape plan submittals.

3. Fuel Modification Installations:

   All fuel modification work shall be completed prior to the final inspection for issuance of a Certificate of Occupancy, or release of bonds.

APPENDIX G

STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK")

CITY OF MENIFEE

LANDSCAPE STANDARD SPECIFICATIONS

The "Standard Specifications for Public Works Construction" ("GREENBOOK"), published by BNi Building News, Inc., latest adopted edition with modifications, shall be the standard specifications for landscape and irrigation work on public improvement (CIP, L&LMD, and CFD) projects in the City of Menifee. The standard specifications are updated regularly, and are available on the City of Menifee website.