



CITY OF OCEANSIDE

PUBLIC WORKS DEPARTMENT

ENGINEERING DIVISION

LANDSCAPE DEVELOPMENT

MANUAL

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Landscape Development Manual
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City Of Oceanside on
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CITY OF OCEANSIDE
GUIDELINES AND SPECIFICATIONS FOR
LANDSCAPE DEVELOPMENTS

1982

(REVISED 1985)

(REVISED 1991)

CITY OF OCEANSIDE

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INTRODUCTION

The City of Oceanside desires to have development in an attractive and high quality manner. These guidelines and specifications for landscape development will enable designers and developers to clearly understand the City's intent with respect to landscape design and management.

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

In order to permit and encourage a pleasing aesthetic interaction with the environment, a landscape design should provide a variety of shapes, textures, and colors, as well as providing practical applications such as lawns to walk or sit on, trees to produce shade and block high winds, and benches. Historical and sociological considerations should not be overlooked.

Wildlife is part of our environment and should be provided for by using plants that can be utilized for food and cover. In many cases, shrubs and trees can be grouped together to create wildlife corridors. Even small groups of the appropriate plants can support some wildlife.

Erosion is one of the major problems facing the City today. With the accelerated rate of construction, disturbance of our soils and the subsequent siltation of our storm drains, streams, rivers and lagoons has been magnified many times over the natural rate. Another very important reason for concern about erosion and slope stabilization is the damage erosion and soil movement can cause to property and human safety. Plants and their root systems are the most effective means of retarding raindrop impact and slowing the movement of water over a slope surface. For these reasons, the City has developed strict slope stabilization standards.

The City is very concerned about proper water management. The City encourages future design efforts to be conscious of water saving irrigation systems as well as drought tolerant plant materials. The use of California natives is highly recommended in landscape designs.

The judge of any design guideline is not how meticulously that guideline is followed but in how well it can act as a framework upon which to build high quality design. If, in that effort to provide projects of high design caliber, variations from these guidelines are necessary, any possible exceptions should be submitted to the City for approval.

These guidelines were adopted by the City Council of the City of oceanside on April 14, 1982 by Resolution No. 82-79.

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General Design Standards

Landscaping in the City of Oceanside must be economical and meet many needs. Below are some guidelines for sound design that will help a growing Oceanside achieve its goals of bringing harmony within the natural landscape (rather than obliterating it) and of bringing continuity to the existing developed areas in the City.

A well-founded design should:

- a. Integrate with, compliment, and improve the existing permanent landscape.
- b. Relate to and compliment the architecture of any structures on the site.
- c. Minimize grading and mitigate erosion.
- d. Provide for screening of unsightly areas and noise as well as provide for wind and sun control.
- e. Minimize the use of water. Water conservation is stressed within City limits.
- f. Provide for variety of design elements.
- g. Use native and drought tolerant plant materials where practical.
- h. Make provisions for wildlife where feasible.
- i. Reflect the needs and expectations of those persons affected by the landscape.
- j. Provide for human comfort by use of benches or other landscape structures where appropriate.

Landscape Architecture Plan Submittals

Owner/consultant shall submit to the City the required documents for all projects where landscape improvements are required as a part of the project development. Submittals may also include model complexes if so determined by the Planning Director and/or City Engineer. The construction of a single family home on an individual lot with no graded slopes does not require the submission of a landscape plan unless specific landscape requirements were made as a condition for approval. However, completion of a Street Tree Memorandum is required (see Appendix; IV-A) unless specifically waived. Single family units must still conform to any applicable sections of the City Code and ordinances pertaining to landscaping prior to occupancy. For further clarification, see Section 507, City of Oceanside Grading Ordinance. All plans submitted shall be prepared under the direct supervision of a Registered Landscape Architect, (State of California), with all drawings bearing his signature (unless specifically waived).

Preliminary Landscape Plans

Preliminary Landscape Plans for projects requiring a landscape plan as determined by the Planning Department shall be submitted to the Engineering Department at the time of the project application:

1. Such plans shall clearly indicate:
 - a. All existing vegetation (native, naturalized, or ornamental trees, shrubs and herbaceous areas including street trees and other parkway plantings).
 - b. All areas in natural state.
 - c. Tabulation of all vegetation to be removed to accommodate project.
 - d. Wildlife found on project site.
 - e. Existing topography.
 - f. Proposed slope gradients.
 - g. Maintenance responsibilities designated.
 - h. Trails, walks, fences, walls.
 - i. Cost estimates with quantities and unit costs.

2. Preliminary Plan Submittals:

- a. To Engineering Department:

Two sets preliminary landscape plan.

One set preliminary cost estimates.

*To be evaluated and incorporated into the design review process. Appropriate items will then become a part of the conditions of approval as a part of the final tract map acceptance by the City.

Landscape Plan Submittal and Review Procedures

1. Landscaping or the installation of an irrigation system in the City of Oceanside shall not be undertaken until the City Landscape Architect and the City Engineer have reviewed and approved plan submittals and specifications, covering the proposed use of plant materials and irrigation systems in order to determine:

- a. That proposed plant material will be suitable aesthetically, physiologically, and ecologically for the particular planting situation.
- b. That proposals for soil preparation are adequate as provided by a certified soils engineer report.
- c. That proposed planting will meet minimum requirements as set forth in Ordinance No. 81-20, Article XV, and will not violate any provisions of the City of Oceanside Grading Ordinance.
- d. That proposed irrigation system will be adequate to properly irrigate proposed planting and is in accordance with City of Oceanside Standard Details and Specifications.
- e. That improvements are permanent and of a nature and quality to insure low maintenance and operation costs.
- f. That all open space and landscaping requirements are met.

2. Plan Check Procedures:

a. Initial landscape Plan Review Submittal

To City Landscape Architect:

Two sets bluelines

Two sets specifications

Two sets irrigation calculations

Two sets soil analysis report

Two sets cost estimate

One set conditions of approval

*Allow twelve (12) working days for initial Landscape Plan Check.

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

***All plans are to be checked by the Engineer of Work for consistency, accuracy, clarity and conformity with City Standard Specifications, drawings and design criteria before submission for approval. If during initial review by the City the plans are found to be incomplete, they will be returned unchecked to the Engineer of Work for completing.

b. Subsequent Review Submittals

To City Landscape Architect:

Two sets bluelines (corrected if required)

Two sets specifications (corrected if required)

Return marked set of plans and specifications if corrections were required.

*Allow six (6) working days for subsequent Landscape Plan Check.

c. Final Plans for Approval

One complete set of mylars for signature.

d. Approved Drawings

Upon City approval of plans, Owner/Developer shall deliver to City Engineering Department: 1. one (1) complete set of signed mylar reproducibles, reduced to 24 x 36" size; 2. two (2) complete sets of signed blueline prints (full size).

e. Approval Deadline

All landscape plan approvals must be accomplished prior to issuance of building permits and prior to commencing any landscape improvement work.

3. Record Set of Drawings for Public Improvements

- a. Prior to the City acceptance of landscape improvements within public areas (i.e. commencement of one (1) year maintenance period), Owner/Developer shall provide to the City:

One marked up set of blueline prints of "As-built" changes. Once reviewed by the appropriate City Landscape Inspector, these prints shall be returned to the Engineer of Work, and all annotations shall be transferred onto the City's set of mylars, checked out by the Engineer of Work. Return of final corrected mylars shall be accomplished prior to project acceptance.

Bonding Requirements

Slope stabilization planting and irrigation is bonded as a portion of the overall grading bond required by the Engineering Department prior to issuance of grading permits. As certain planting procedures are bonded at different rates, it is recommended that the applicant/owner check with the Engineering Department for the current bonding schedule.

Inspection and Acceptance of Planting and Irrigation System Installations

1. Revisions of the landscape plan must be approved by the City Landscape Architect before any plant materials are installed inconsistent with the original plan. Submit two sets of the revised plans to the City Landscape Architect for review.
2. After installation, but prior to backfill, an inspection of the irrigation system shall be made by the City Landscape Inspector of all points of connection, backflow protection devices, mainlines, electrical connections, automatic controllers, and control valves. Contact the City Landscape Architect to arrange inspection schedule at least 48 hours in advance of the desired inspection.
3. Prior to the release for occupancy, an inspection of the completed landscape installation shall be arranged. This inspection will include, but not be limited to:
 - a. An irrigation coverage test.
 - b. Compliance to approved landscape plans.
 - c. Condition of plant materials (including street trees and slope plantings).
 - d. Any special conditions or approval attached to the project by the Planning Commission and/or City Council.
 - e. Submittal of as-built drawings as well as manuals and controller charts.

Work Performed in Maintenance Assessment District or Public Area

Final acceptance of Landscape Improvements will be made at such time as all planting is in place and established in a healthy condition and irrigation systems are installed as shown on approved plans and in accordance with Oceanside City Standard Details and Specifications. Owner or agent in control of the property shall maintain landscaping and irrigation systems to the satisfaction of the City Landscape Architect for one (1) calendar year after acceptance of improvements by the City Council, at which time the Maintenance Assessment District will be available to service area for continuing maintenance, formally relieving the Contractor of his maintenance responsibilities.

Slope Stabilization

Slope stabilization is a primary concern in the City of Oceanside. All cut or fill slopes in excess of five (5) feet vertical height shall be landscaped and irrigated. This may be waived at the discretion of the City Landscape Architect. Plant materials on slopes must be established prior to release of landscape bonds.

All slopes or natural areas with elevation differences greater than 40 feet vertical rise, or slopes greater than 10 feet vertical rise along public streets or areas separated by a fence, wall or other barrier from the structure, shall be maintained by a Homeowner's Association, Maintenance Assessment District, or other method acceptable to the City. Slopes not within these categories shall be the maintenance responsibility of the individual homeowner.

Extreme Erosion Hazards

Extreme erosion hazards such as steep slopes of highly erodable soils, soils poor in nutrients or impermeable soils, etc., may necessitate the use of more stringent control measures as determined by the City Engineer and/or the City Landscape Architect. Such measures may include, but are not necessarily limited to:

- a. Erosion control planting by hydroseeding, plant pots, or cuttings beyond normal requirements.
- b. Placement of erosion control matting.
- c. Reduction of slope cuts and embankments.
- d. Construction of brow ditches and downdrains.
- e. Construction (or extension) of retaining walls.
- f. Soil stabilization treatment.
- g. Provisions for subsurface drainage.
- h. Special requirements for irrigation.

Fire Prevention

In high fire hazard areas, such as in the suburbs near Chaparral, landscaping should include efforts to prevent the spread of fire to structures. Research by the Fire Retardant Plant Research Project, Los Angeles State County Arboretum, has shown some plants to be relatively non-flammable since they withstand high temperatures for prolonged periods without igniting and do not support open flames when ignited.

Where development occurs adjacent to areas identified as being fire hazardous, owner shall comply with all appropriate recommendations for:

- a. Fire Prevention
- b. Fuel Management and Hazard Reduction
- c. Fire Control
- d. Fire Retardant Plantings

These measures are contained in "Background Report and Recommendations for the Reduction of Fire Hazard at the Natural Open Space/Urban Development Interface," Orange County, California, prepared by the Fire Protection Planning Task Force, September 1976. Refer to the Slope Planting List for Fire Retardant Plant Materials.

CITY OF OCEANSIDE
GUIDELINES & SPECIFICATIONS FOR
LANDSCAPE DEVELOPMENT

January 1982
(Revised August 1984)

SECTION I
PLAN PREPARATION - GUIDELINES/CRITERIA

SECTION I

PLAN PREPARATION

The outline which follows summarizes Plan Preparation information for those preparing plans and detailed drawings for projects within in the City of Oceanside.

1. GENERAL

All landscaping plans and correspondence (including transmittal letters) for projects, must bear the City's file number (usually such as T-17-83, D-14-84 or E-10-83, etc). If the material is for a specific unit within a project, the appropriate unit number is added. For example, Mission View Unit 4 would appear as T-15-81(4). When the map is submitted to the Plan Checkers for their processing, the necessary information to be shown on the map will be transmitted to them and will appear as a correction with the first plan check.

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

As the condition of approval for the landscape plan is normally required prior to recordation of the final map, this means that the cost estimate of the landscape plan must be sufficiently precise to allow the establishment of bonds to cover the cost of the construction.

- A. Standard size sheets shall be used for all plans submitted. All plans shall be of the same size. Final signed mylars (for City Record Set only) shall be reduced to 24" x 36".
- B. Incomplete designs, details, etc. will not be accepted. Checking will be done only on plans which are complete in all phases of design.
- C. Number sheets consecutively, "Sheet ____ of ____."
- D. Minimum scale: 1" = 40'. Scale shall appear on each sheet.

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- E. North arrow shall appear on each sheet.
- F. Show all match lines clearly, and label to provide easy plan reference.
- G. Vicinity map shall appear on title sheet and identify streets within project and those directly adjacent.
- H. The following items related to landscape and irrigation development shall appear on all plan sheets:
 - (1) definition of public right-of-way, as well as homeowner association maintenance area - (Show clearly)
 - (2) property lines/project limits
 - (3) building areas (existing and proposed)
 - (4) paved areas (including street sidewalks)
 - (5) all walls, fences (including gates) to be constructed by developers
 - (6) other appropriate information such as utilities, easements, street lights, fire hydrants, as they relate to landscape development.

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

2. COVER/TITLE SHEET

The first sheet is a title sheet and shall include:

- A. Project location on location map.
- B. Vicinity map showing the following:
 - (1) Street configuration within or adjacent to the tract or project
 - (2) Nearest arterial highway intersection
 - (3) Street names
 - (4) North arrow
 - (5) Match lines, if applicable
 - (6) Project limits
- C. Phasing Plan Index (plan indicating the anticipated phasing of the overall project if drawings are not going to be submitted all at one time).
- D. Sheet Index (plan indicating portion of project each sheet covers).
- E. General notes (not limited to the following)
 - (1) The Contractor must notify the City Landscape Architect (619/439-7157) 48 hours (two working days), prior to starting construction.
 - (2) The contractor or developer is required to fully maintain all landscaping for (1) year after City acceptance of all improvements within landscape assessment districts. All landscaping on individual lots shall be maintained until occupancy by the respective homeowner.
 - (3) Turfed areas shall have a maximum design slope of 4:1.
 - (4) Name of soils lab(s) performing agricultural and structural soils tests. Soils testing for agricultural suitability shall be accomplished at the conclusion of rough grading.

- (5) The landscape or irrigation contractor is to verify existing P.S.I. at job site prior to installing landscape irrigation system. Verification shall be made with the Oceanside Water Department.
- (6) Owner shall provide a 6" concrete mow strip between mowed turf and ground cover, and 8" concrete mow strip between mowed turf and walls. Refer to Standard Details 202, 203, and 204.
- (7) The Contractor is responsible for obtaining building and plumbing permits prior to commencing wall construction and irrigation installation, respectively.
- (8) Irrigation systems for individual parcels shall have points of connection for the system between the water meter and water service riser into dwelling and ahead of any water regulating device installed for dwelling.
- (9) Work shall be done in accordance with City of Oceanside Guidelines and Specifications for Landscape Development (1984).

F. Title Block

- (1) Project title
- (2) City File number, Tract number, Tentative Map number and parcel numbers if drawings reflect only a portion of the complete tract. These specific reference numbers shall conform to the approved tract map.
- (3) Project address or cross streets.

G. Signature Block for Approvals

Signature block shall be provided on Title Sheet for the following signatures:

- (1) City Engineer
- (2) City Landscape Architect
- (3) City Building Official
- (4) Fire Protection Analyst/Fire Marshall

Upon approval of plans by City, Owner/Developer shall deliver two signed sets of blueprints to City.

- H. Submittal Dates Block -- Clearly indicate date(s) plans were submitted (for each submittal).
- I. Landscape Architect's firm name, address, phone number, date plans were prepared, signature, and seal of Registered Landscape Architect.
- J. Owner/Developer's name, address and phone number.
- K. Hold Harmless Clause (see Appendix; IV-B)

3. PLAN SHEETS

A. Median Design Standards

- (1) Mounding in Medians: Mounding of turf and groundcover areas shall be limited to a maximum of 6" above top of curb and shall have a maximum cross sectional slope of 7%.
- (2) Quick couplers shall occur a minimum of every 200' for entire length of median.

B. Grading

- (1) Indicate existing and proposed grades with contours and spot elevations.
- (2) Mounded turf areas shall have a maximum design slope of 4:1. Mounded ground cover areas shall have a maximum design slope of 2:1.
- (3) Note all grades, flow lines, etc., within public right-of-way.
- (4) Bike grades: 10% maximum slope. Refer to Standard Detail #201.
- (5) Handicap grades: 12 1/2% maximum slope. Refer to City of Oceanside Engineers Manual Standard Detail No. M-11.
- (6) Minimum grade within turf and ground cover: 2%.
- (7) Parkway and common areas where drainage is to be allowed to drain directly onto private property must be accomplished to the satisfaction of the City Engineer. Subsurface drains shall connect into storm drain system or through curb-face.
- (8) All grading and drainage within public right-of-way shall be subject to approval by City Engineer.

- (9) All graded slope 5:1 or steeper and 5' or greater in height shall receive planting and irrigation to be approved by City Landscape Architect. Plant materials shall comply with approved Slope Plant Material List within this manual or as specifically approved.
- (10) Subsurface drainage (with cleanouts) for median islands may be required if gradients promote concentrations of water in specific locations.

C. Crossings

All pedestrian, equestrian and bicycle trails which cross arterial or collector streets shall receive appropriate signs, stripes and pavement markings per State of California Standards. Use of stamped concrete, various enriched paving, etc., shall require approval of City Engineer.

D. Trails

- (1) Equestrian Trails - Owner shall develop all trails with a 10' minimum width.
 - (a) Scarify trail area to a depth of 6", removing rocks, clods, and all undesirable material. Apply approved soil sterilant, fine grade and compact native soil to the satisfaction of the City Engineer.
- (2) Bike Trails - Asphalt concrete bike trails shall be constructed with a 10' minimum width. As specified in Caltrans Planning and Design Criteria for Bikeways in California. Trail designs exceeding City Standard #200 may be required.
- (3) Concrete Walks - Shall be constructed per San Diego Regional Standards G-7.1. Where treewells occur within sidewalk area, a minimum 4' width must be maintained between treewell and edge of sidewalk.

E. Fencing

- (1) Equestrian Trails - Shall be constructed per City Standard Detail #201 and shall occur on both sides of trail unless otherwise approved by City Landscape Architect or Planning Director.
- (2) All masonry perimeter wall designs shall be submitted to Oceanside Building Department for approval. (Ref. to City Approved Height Requirements)

F. Lighting

Wherever possible, lighting designed to accent landscaping, buildings, signs, etc., shall be located on private property. Any lighting systems to be located within the public right-of-way shall be designated by a registered Electrical Engineer. Electrical plans shall be submitted with standard landscape plans and shall be subject for approval by City Engineer and City Landscape Architect.

G. Landscaped Setbacks/Arterial Highways

A 5' minimum setback between property line and screen walls shall be established for arterial highways. This easement shall be landscaped with appropriate materials which effectively screen the walls and are low-maintenance types. Slope plant materials shall comply with approved Slope Plant Material List in these guidelines. Street trees shall conform to the City of Oceanside Approved Street Tree List in these guidelines.

H. Irrigation

The objective of the following guidelines is to aid in the preparation of landscape irrigation drawings and specifications for practices and material most commonly encountered in the field. However, any special conditions which the designer/owner finds during the progress of design, drawings, etc., not covered by these guidelines and specifications shall be submitted to the City at the earliest possible date.

- (1) Provide a complete, automatic landscape sprinkler irrigation design for all landscaped areas as required as a part of the project development. The irrigation system shall be installed in compliance with the Uniform Building Code most recently adopted by the City of Oceanside.
- (2) The landscape irrigation system shall be designed and operated to prevent or minimize run-off and discharge of irrigation water onto roadways, driveways, adjacent properties and all areas not under City jurisdiction.

- (3) Included on the irrigation drawings shall be a complete and comprehensive irrigation legend indicating sprinkler radius in feet, sprinkler operating pressure in P.S.I., sprinkler flow in G.P.M., and sprinkler pattern. All other equipment and materials utilized in the design shall also be included as a part of the irrigation legend. Indicate manufacturer, model number, size and brief description.
- (4) Indicate location of irrigation water meters, irrigation points of connection and electrical points of connection for automatic sprinkler controllers on the irrigation drawings. Indicate whether the contractor, the owner, the utility service company, etc., will be responsible for the coordination and installation of water and service connections.
- (5) The following information shall be provided at each irrigation water meter or irrigation point of connection:
 - (a) Static and residual water pressures.
 - (b) Meter size.
 - (c) Peak irrigation demand in G.P.M.
 - (d) Finish grade at backflow unit and highest head served.
 - (e) Maximum operating G.P.M. for each valve.
- (6) Submit pressure calculations for the worst hydraulic condition at each point of connection. Water movement in system shall not exceed 5 feet per second for pressure main line piping and 7 feet per second for non-pressure lateral line piping.
- (7) All irrigation systems shall be designed to minimize vandalism (with special attention at schools, parks, along trails, roads, walks, etc.).
- (8) Irrigation water system shall be designed to provide adequate moisture for all plant materials used within the design area.
- (9) Provide construction details indicating installation procedures and materials required for the installation of all major components used in the irrigation design in accordance with Standard City Details (see Appendix).

- (10) In an effort to provide a more efficient landscape sprinkler system with a continuing water conservation program as a prime objective, it is suggested that sprinkler head spacing for small sprinkler heads with an effective spray of five to thirty feet in diameter should not exceed 60% of the diameter. Sprinkler spacing for intermediate and large sprinkler heads with an effective spray of up to 120 feet in diameter should not exceed 55% of that diameter. In no case shall sprinkler spacing exceed the manufacturer's recommendations.
- (11) Pressure loss due to friction in sprinkler lateral line piping should not exceed 20% of sprinkler head operating pressure.
- (12) Provide check valves and/or anti-drain valves as may be required to prevent drainage of irrigation water from sprinkler system due to changes in elevation.
- (13) The on-site irrigation water system shall be designed and operated to meet the following conditions with respect to water application and conservation:
 - (a) Irrigation water shall be applied at a rate which does not exceed the infiltration rate of the soil. Where varying soil types are present, the design of the irrigation water system shall be compatible with the lowest infiltration rate present.
 - (b) When the application rate exceeds the infiltration rate of the soil, automatic systems shall be utilized and programmed to prevent or minimize the ponding and/or run-off of irrigation water. The sprinkler system shall not be allowed to operate for a time longer than the landscape's water requirement. If run-off occurs before the landscape's water requirements are met, the automatic controls shall be reprogrammed with additional watering cycles to meet the requirements. This method of operation will control and limit run-off.
- (14) Valves - Sectionalized gate valves shall be provided to allow shutting down various sections of the system independently without affecting the entire system.

Remote Control Valves - Locate remote control valves in shrub areas whenever possible.

Remote control valves located in designated athletic play areas shall be buried 6 inches with yellow valve markers.

Provide uniform coverage and G.P.M. from control valves in each system.

Master Control Valves - Use of master control valves may be required by the City Landscape Architect to protect slopes from erosion damage due to irrigation system malfunctions.

- (15) Slope condition - Provide separate control valves for sprinkler lines operating systems at the top, toe, and intermediate areas of slopes. Wherever possible, sprinkler lines shall run parallel to or as close to parallel to contour lines as possible. Plastic UVR-PVC pipe may be required on above grade application on slopes as determined by the City Landscape Architect. All valves shall be buried below grade and shall be located at the top/toe of slope as to be easily accessible for maintenance.

- (16) System pressure - Design systems to the low static pressure available.

The maximum potential pressure should be considered in the design and regulators provided if required. If water pressure exceeds 80 P.S.I. install pressure regulators at no more than 20% higher than system design pressure.

- (17) Equip all sprinkler heads located in athletic play areas with rubber covers.

- (18) Backflow prevention - A backflow preventer will be required as long as the irrigation water system is using potable water. Installation shall be a minimum of 12" above grade and shall be equipped with required test cocks.

All backflow devices must comply with requirements set forth by the San Diego Health Department, San Diego or Oceanside Water Department and City of Oceanside Building Department.

- (19) Quick coupling valves - Provide three quick coupling valves at each baseball field, to be located at home plate and first and third bases.

Provide quick couplers 100 feet on center in recreational areas and 200 feet on center in general landscaped areas. Provide one quick coupler within 12 inches of paved end sections of landscaped medians (if paved ends occur).

Locate quick couplers adjacent to hardscape.

- (20) If landscaped area requiring irrigation system does not represent the total area and future development of remaining site is under consideration, allowance shall be made in sizing pipe, etc.
- (21) Wherever irrigated areas occur adjacent to trails, paved areas, sidewalks, or any high-use pedestrian areas, pop-up sprinklers shall be used (6" or 12") to minimize vandalism. Avoid above grade sprinklers in these areas in all cases.
- (22) Any item, technique, or requirement set forth in the standard specifications, but not specifically mentioned under Guidelines and Criteria, should be considered in the design of irrigation systems.

I. Planting

- (1) All ornamental planting of parkway trees shall be in accordance with the appropriate City street tree ordinance and conditions.
- (2) Minimum Spacing Instructions for Street Trees:
- Thirty (3) feet apart
 - Twenty-five (25) feet from street intersections
 - Ten (1) feet from driveways, sewer and waterlines
 - Fifteen (15) feet from street light and utility poles
- (3) In no event shall trees or ornamental landscaping be placed so as to obstruct the vision of drivers and/or pedestrians within public rights-of-way.
- (4) New street tree planting in older areas of the City shall reflect those species which exist, and every effort shall be made to match or effectively blend with plant materials that are currently employed.
- (5) Street tree planting in new planting areas shall generally require a uniform tree variety per street(s) in order to assure ease of maintenance and maintain general aesthetic appearance.

- (6) Trees planted by the Developer as a part of the project development shall be installed as per City of Oceanside Standard Details #208-213.
- (7) Minimum acceptable sizes of street/parkway trees shall be 15-gallon container size, excepting larger parkways where some smaller container size materials may be appropriate.
 - (a) Local Streets - Minimum one tree per unit (2 per corner lot) as a solitary planting.
 - (b) Arterial - Minimum 40' on center, each side of street, as a solitary planting.
- (8) All herbicides and weed control materials proposed for use within publicly maintained areas are subject to approval by City Street Superintendent and City Landscape Architect.
- (9) Planting plans shall represent a true and accurate description of actual plant materials to be installed. On-site inspection will strictly enforce representations, types and quantities shown on planting plans.
- (10) Slope planting of Eucalyptus shall consist of 1 gallon or 5 gallon maximum size. All root bound material will not be accepted (see Page 45, Item 1, Paragraph A, Subdivision 3, for more complete discussion).
- (11) Generally planting density of trees within Greenbelt areas shall be a minimum of 60 trees per acre.
- (12) Replacement for Eucalyptus trees within existing windrows shall consist of one of the following, in 5 or 15 gallon containers:
 - (a) Eucalyptus leucoxylon - White Ironbark
 - (b) Eucalyptus cladocalyx - Sugar Gum

J. Graphics/Signage

All graphic and signing systems within public right-of-way for commercial, housing usage shall be subject to approval by the Planning Department and shall be in accordance with appropriate zoning ordinances.

K. Existing Eucalyptus Windrows

The following outlined policy shall apply to existing Eucalyptus windrows which occur within proposed tracts/housing developments:

- (1) Existing trees shall be evaluated by the City to determine which trees can be saved and which trees, due to general decline, decay, etc., shall be removed. Those trees which can be topped, trimmed, etc., shall be preserved. City Landscape Architect shall determine height to which trees shall be topped.
 - (2) Those trees which are determined to be unsafe, diseased, etc., shall be removed, and the stump section ground to finish grade.
 - (3) Subsequent to trimming/topping, ornamental landscaping proposed in areas surrounding existing windrows shall accommodate, as much as possible, the existing tree root system. Trenching for irrigation shall be minimized.
 - (4) Continuing City maintenance in the form of pruning, thinning, etc., shall eliminate top heavy or overgrown windrow trees.
- L. City of Oceanside Zoning Ordinance - All ornamental landscaping, both on private property and within public right-of-way, shall comply with City Zoning and Subdivision Ordinance, in all respects (open space requirements, fencing, front and side yard landscaping, etc.)

CITY OF OCEANSIDE
GUIDELINES & SPECIFICATIONS FOR
LANDSCAPE DEVELOPMENT

January 1982
(Revised August 1984)

SECTION II
SPECIFICATIONS/MATERIALS & INSTALLATION

SECTION II

SPECIFICATIONS/MATERIALS AND INSTALLATION

II-A - IRRIGATION

1. GENERAL

A. Permits and Fees

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

B. Manufacturer's Directions

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

C. Ordinances and Regulations

All local, municipal and state laws, and rules and regulations governing or relating to any portion of Irrigation work are hereby incorporated into and made a part of these specifications, and their provisions shall be carried out by the Contractor. Anything contained in these specifications call for or describe materials, workmanship, or construction of a better quality, higher standard, or larger size than is required by the above rules and regulations, the provisions of these specifications and drawings shall take precedence.

D. Explanation of Drawings

- (1) Due to the scale of drawings, it is not possible to indicate all offsets, fittings, sleeves, etc. which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan his work accordingly, furnishing such fittings, etc. as may be required to meet such conditions.

Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting, and architectural features.

- (2) The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that unknown obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the City as soon as possible. In the event this notification is not performed, the irrigation Contractor shall assume full responsibility for any revision necessary.

2. SUBMITTALS

A. Material List

- (1) The Contractor shall furnish the articles, equipment, materials, or processes specified by name in the drawings and specifications. No substitution will be allowed without prior written approval by the City.
- (2) Equipment or materials installed or furnished without prior approval of the City may be rejected and the Contractor required to remove such materials from the site at his own expense.
- (3) Manufacturers warranties shall not relieve the Contractor of his liability under the guarantee. Such warranties shall only supplement the guarantee.

B. Record and As-Built Drawings

- (1) The Contractor shall provide and keep up to date complete "as built" drawings indicating locations, sizes and kinds of equipment installed. Prints for this purpose may be obtained from the architect at cost. This set of drawings shall be kept on the site and shall be used only as a record set.
- (2) These drawings shall also serve as work progress sheets, and the Contractor shall make neat and legible annotations thereon daily as the work proceeds, showing the work as actually installed. These drawings shall be available at all times for inspection and shall be kept in a location designated by the City.
- (3) Before the date of the final inspection, the Contractor shall turn over all information recorded on the "as built" prints to the Engineer of Work.

- (4) The Contractor shall dimension from two (2) permanent points of reference (building corners, sidewalk, or road intersections, etc.) the location of the following items:
 - (a) Connection to existing water lines.
 - (b) Connection to existing electrical power.
 - (c) Gate valves.
 - (d) Routing of sprinkler pressure lines (dimension max. 100' along routing).
 - (e) Significant changes in routing of lateral lines from those indicated on plans.
 - (f) Sprinkler control valves.
 - (g) Routing of control wiring.
 - (h) Quick coupling valves.
 - (i) Other related equipment as directed by the City.
- (5) On or before the date of the final acceptance of improvements (start of 1-year maintenance period) the Contractor/Developer shall deliver one (1) set of corrected "as-built" mylars as described in Section 3-a, page 4, to the City. Delivery of the mylars will not relieve the Contractor of the responsibility of furnishing required information that may be omitted from the prints.

C. Controller Charts

- (1) As-built drawings shall be approved by the City Landscape Architect, before controller charts are prepared.
- (2) Provide one controller chart for each controller supplied.
- (3) The chart shall show the area controlled by the automatic controller and shall be the maximum size which the controller door will allow.
- (4) The chart is to be a reduced drawing of the actual as-built system. However, in the event the controller sequence is not legible when the drawing is reduced, it shall be enlarged to a size that will be readable when reduced.

- (5) The chart shall be a blackline or blue line ozalid print and a different color shall be used to indicate the area of coverage for each station.
- (6) When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum 10 mils thick.
- (7) These charts shall be completed and approved prior to final inspection of the irrigation system.

D. Operation and Maintenance Manuals

- (1) Prepare and deliver to the City prior to acceptance of improvements (start of 1-year maintenance period) two hard cover binders with three rings containing the following information:
 - (a) Index sheet stating Contractor's address and telephone number, list of equipment with name and addresses of local manufacturer's representatives.
 - (b) Catalog and parts sheets on every type of material and equipment installed.
 - (c) Guarantee statement.
 - (d) Complete operating and maintenance instruction on all major equipment.
- (2) In addition to the above mentioned maintenance manuals, provide the City's maintenance personnel with instructions for major equipment.

E. Equipment to be Furnished

- (1) Supply the City's maintenance personnel with the following tools:
 - (a) Two (2) sets of special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied.
 - (b) Two (2) five foot valve keys for operation of gate valves.
 - (c) Two (2) keys for each automatic controller.
 - (d) One (1) quick coupler key and matching hose swivel for every five quick coupling valves installed.

- (2) The above mentioned equipment shall be turned over to the City at the conclusion of the project. Before final inspection can occur, evidence that the City has received this material must be shown to the City Landscape Architect.
- (3) In the event the Developer elects to allow his Contractor to complete his responsibilities prior to final acceptance of improvements, it is strongly recommended these foregoing requirements be completed at that earlier date; otherwise the Developer shall be solely responsible for completing these requirements.

F. Handling of PVC Pipe and Fittings

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

G. Guarantee

- (1) The guarantee for the sprinkler irrigation system shall be made in accordance with the attached form.
- (2) A copy of the guarantee form shall be included in the operations and maintenance manual.
- (3) The guarantee form shall be re-typed onto the Contractor's letterhead and contain the following information:

GUARANTEE FOR SPRINKLER IRRIGATION SYSTEM

We hereby guarantee that the sprinkler irrigation system we have furnished and installed is free from defects in materials and workmanship, and the work has been completed in accordance with the drawings and specifications, ordinary wear and tear and unusual abuse, or neglect excepted. We agree to repair or replace any defects in material or workmanship, including settling of backfilled areas below grade, which may develop during the period of one year from date of acceptance and also to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the City. We shall make such repairs or replacements within 72 hours of notification that repair work is necessary. In the event of our failure to make such repairs of written notice within a reasonable time after receipt of written notice from the City, we authorize the owner to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.

PROJECT: _____

LOCATION: _____

SIGNED: _____
Contractor

ADDRESS: _____

PHONE: _____

DATE OF ACCEPTANCE: _____

3. MATERIALS

A. General: Use only new materials of brands and types noted on drawings, specified herein, or approved equals.

B. Asbestos-Cement Pressure Main Line Pipe and Fittings

- (1) Pressure supply lines 8 inches and larger shall be Class 150 irrigation pipe, complying with AWWA C400, in 10-foot lengths, unless otherwise noted.
- (2) Fittings (couplings excepted) in A.C.P. shall be case iron, Class 150, complying with ANSI B21.10 and AWWA C110, with hubs modified to accept the pipe ends of the A.C.P. Sealing shall be by means of solid rubber rings. All ring grooves shall be free of casting imperfections and shall comply with dimensional tolerances as published by the manufacturer of the A.C.P.
- (3) Connections to laterals shall be tapped cast-iron tees and bossed couplings except as follows:

Double strap service clamps with rubber seals and flat bronze straps may be used for connections of 50% or less than the diameter of pipe.

Tapped A.C.P. couplings with brass inserts may be used for connections of 3/4, 1, 1-1/4, 1-1/2, and 2 inches.

C. PVC Pressure Main Line Pipe and Fittings

- (1) Rubber gasket type pressure main line piping for sizes 2 1/2" and larger shall be Ring-Tite PVC Class 200.
- (2) Pipe shall be made from an NSF approved Type I, Grade I, PVC compound conforming to ASTM resin specification D1784. All pipe must meet requirements as set forth in Federal Specifications PS-22-70, with an appropriate standard dimension (S.D.R.) (Ring-Tite Pipe).
- (3) Ring-Tite PVC fittings shall be fabricated from Schedule 40, 1-2, II-I NSF Solvent weld PVC fittings conforming to ASTM testing procedure D-2466 and PVC ring-tite bell adapter using solvent and solvent welding procedures recommended by the manufacturer.
- (4) Fabrication shall be performed at the manufacturer's plant location or at an authorized distributor shop location. Field fabrication of ring-tite fittings will not be allowed.

- (5) Solvent-welded type pressure main line piping for sizes 2" and larger shall be PVC Class 315.
- (6) Pipe shall be made from an NSF approved Type I, Grade I, PVC compound conforming to ASTM resin specification D1784. All pipe must meet requirements as set forth in Federal Specification PS-22-70 with an appropriate standard dimension (S.D.R.) (Solvent-Weld Pipe).
- (7) Pressure main line piping for sizes 1 1/2" and smaller shall be PVC Schedule 40 with solvent welded joints.
- (8) Pipe shall be made from NSF approved Type I, Grade I PVC compound conforming to ASTM resin specification 1785. All pipe must meet requirements as set forth in Federal Specification PS-21-70. (Solvent-weld pipe).
- (9) PVC solvent-weld fittings shall be Schedule 40, 1-2, II-I NSF approved conforming to ASTM test procedure D2466.
- (10) Solvent cement and primer for PVC solvent-weld pipe and fittings shall be of type and installation methods prescribed by the manufacturer.
- (11) All PVC pipe must bear the following markings:
 - (a) Manufacturer's name
 - (b) Nominal pipe size
 - (c) Schedule or class
 - (d) Pressure rating in P.S.I.
 - (e) NSF (National Sanitation Foundation) approval
 - (f) Date of extrusion
 - (g) U.P.C. Shield Logo (IAPMO Approval)
- (12) All fittings shall bear the manufacturer's name or trademark, material designation, size, applicable I.P.S. schedule and NSF seal of approval.

D. PVC Non-Pressure Lateral Line Piping

- (1) Non-pressure buried lateral line piping shall be PVC Class 200 with solvent-weld joints.
- (2) Non-pressure on grade lateral line piping shall be brown-line UVR-PVC pipe. Galvanized steel pipe on grade shall not be used without prior approval of the City Landscape Architect.

- (3) Pipe shall be made from NSF approved, Type I, Grade II PVC compound conforming to ASTM resin specification D1784. All pipe must meet requirements set forth in Federal Specification PS-22-70 with an appropriate standard dimension ratio.
- (4) Except as noted in Paragraphs 1 and 2 of part C (this section), all requirements for non-pressure lateral line pipe and fittings shall be the same as for solvent weld pressure main line pipe and fittings as set forth in part C of this section.

E. Brass Pipe and Fittings

- (1) Where indicated on the drawings, use red brass screwed pipe conforming to Federal Specification #WW-P-460.
- (2) Fittings shall be red brass conforming to Federal Specification #WW-P-460.

F. Galvanized Pipe and Fittings

- (1) Where indicated on the drawings, use galvanized steel pipe ASA Schedule 40 mild steel screwed pipe.
- (2) Fittings shall be medium galvanized screwed beaded malleable iron. Galvanized couplings may be merchant coupling.
- (3) All galvanized pipe and fittings installed below grade shall be painted with two (2) coats of Koppers #50 Bitumastic or other approved listed pipe protection coating in accordance with the Uniform Plumbing Code and IAPMO installation Standard IS-13.

G. Copper Pipe and Fittings

- (1) Copper pipe shall be Type "K", hard tempered ASTM B 88 and fittings shall be wrought solder joint type in accordance with ANSI B 16.11.
- (2) Joints shall be soldered with silver solder, 45% silver, 15% copper, 16% zinc, 24% cadmium, and solidus at 1,125 F and liquidus at 1,145 F, conforming to ASTM B-206 and Federal Specification QQB 00655.

H. Thrust Blocks

- (1) Thrust blocks for all specified piping shall be of size and type required by the manufacturer's installation guide.

- (2) Form thrust blocks in such a manner to prevent any concrete from coming in contact with pipe. Thrust blocks shall be between solid soil and the fitting.

I. Quick Coupling Valves

- (1) Quick coupling valves shall have a one or two piece brass body designed for working pressure of 150 P.S.I. operable with quick coupler.
- (2) Quick coupling valves shall be 3/4" size and shall be equipped with a locking vinyl cover yellow in color.
- (3) Quick coupling valves shall be similar to those manufactured by Rainbird or approved equal.

J. Backflow Prevention Units

- (1) Backflow preventers and/or vacuum breakers shall be of size and type as indicated on the drawings. All sprinkler irrigation systems that are using water from the potable water system shall require backflow prevention. All backflow prevention units shall be installed in accordance with requirements set forth by local codes and the County Health Department (see Page 10, Section 19).
- (2) Wye strainers at backflow prevention units shall have a bronzed screwed body for sizes 2" and smaller and 125 lb. cast iron flanged body for sizes 2 1/2" and larger. All wye strainers shall have a minimum 30 mesh monel screen and shall be similar to Bailey #100B or approved equal.

K. Check Valves

- (1) Swing check valves 2" and smaller shall be 200 pound W.O.G. bronze construction with replaceable composition, neoprene or rubber disc, and shall meet or exceed Federal Specification WW-V-51d, Class A, Type IV.
- (2) Anti-drain valves shall be of heavy duty virgin PVC construction with F.I.P. thread inlet and outlet. Internal parts shall be stainless steel and neoprene. Anti-drain valve shall be field adjustable against drawout from 5 to 40 feet of head. Anti-drain and excess flow valve shall be similar to the Valcon "ADV" or approved equal.

L. Gate Valves

- (1) Gate valves 4" and larger shall be iron body, bronze mounted, double discs, parallel seats with pin disc spreader mechanism and shall conform to the American Water Works Association specification C500.
- (2) Gate valves 4" and larger shall have 2" square operating nut, with arrow cast in metal indicating direction of opening.
- (3) Gate valves 4" and larger shall have ends compatible with pipe in which they are being installed.
- (4) Gate valves 4" and larger shall be similar to those manufactured by Kennedy Valve Mfg. Co., or approved equal.
- (5) Gate valves 3" and smaller shall be 125 lb. SWP bronze gate valve with screw-in bonnet, nonrising stem, and solid wedge disc, and shall conform to federal specification WW-V-54, Type 1, Class A.
- (6) Gate valves 3" and smaller shall have threaded ends and shall be equipped with a bronze handwheel.
- (7) Gate valves 3" and smaller shall be similar to those manufactured by Hammond (609 Series) or approved equal.
- (8) All gate valves shall be installed per detail (Standard Detail 114).

M. Control Wiring

- (1) The electrical system shall be installed in accordance with the national Electrical Code most recently adopted by the City of Oceanside. Connections between the automatic controllers and the electric control valves shall be made with direct burial copper wire AWG-U.F. 600 volt. Pilot wires shall be a different color wire for each automatic controller.

Common wires shall be white with a different color stripe for each automatic controller. Install in accordance with valve manufacturer's specifications. Wire sizes shall be 14 ga. up to 750', 12 ga. up to 1200', 10 ga. up to 2000', from valve to controller.

- (2) Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines wherever possible.



CITY OF OCEANSIDE

PUBLIC WORKS DEPARTMENT

ENGINEERING DIVISION

LANDSCAPE DEVELOPMENT

MANUAL

Resolution No. 82-79
Landscape Development Manual
Adopted by the City Council
City Of Oceanside on
April 14, 1982

Resolution No. 85-44
Revised Landscape Development Manual
Adopted by the City Council
City Of Oceanside on
March 13, 1985

Resolution No. R91-286
Revised Landscape Addenda
Adopted by the City Council
City Of Oceanside on
November 6, 1991

Resolution No. R97-158
Revised Landscape Addenda
Adopted by the City Council
City Of Oceanside on
November 5, 1997

CITY OF OCEANSIDE
GUIDELINES AND SPECIFICATIONS FOR
LANDSCAPE DEVELOPMENTS

1982

(REVISED 1985)

(REVISED 1991)

CITY OF OCEANSIDE

Planning Department
Engineering Department

BERRYMAN & STEPHENSON, INC.

Consultants to the City

Engineering Department
Richard O. Rafanovic
City Engineer - 1982

Landscape Architect
Richard A. Fisher - 1982
City Landscape Architect
Landscape Inspection

Revised Addenda - RESO R91-286

Engineering Department

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City Engineer - 5/95
Peter Weiss
City Engineer

INTRODUCTION

The City of Oceanside desires to have development in an attractive and high quality manner. These guidelines and specifications for landscape development will enable designers and developers to clearly understand the City's intent with respect to landscape design and management.

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

In order to permit and encourage a pleasing aesthetic interaction with the environment, a landscape design should provide a variety of shapes, textures, and colors, as well as providing practical applications such as lawns to walk or sit on, trees to produce shade and block high winds, and benches. Historical and sociological considerations should not be overlooked.

Wildlife is part of our environment and should be provided for by using plants that can be utilized for food and cover. In many cases, shrubs and trees can be grouped together to create wildlife corridors. Even small groups of the appropriate plants can support some wildlife.

Erosion is one of the major problems facing the City today. With the accelerated rate of construction, disturbance of our soils and the subsequent siltation of our storm drains, streams, rivers and lagoons has been magnified many times over the natural rate. Another very important reason for concern about erosion and slope stabilization is the damage erosion and soil movement can cause to property and human safety. Plants and their root systems are the most effective means of retarding raindrop impact and slowing the movement of water over a slope surface. For these reasons, the City has developed strict slope stabilization standards.

The City is very concerned about proper water management. The City encourages future design efforts to be conscious of water saving irrigation systems as well as drought tolerant plant materials. The use of California natives is highly recommended in landscape designs.

The judge of any design guideline is not how meticulously that guideline is followed but in how well it can act as a framework upon which to build high quality design. If, in that effort to provide projects of high design caliber, variations from these guidelines are necessary, any possible exceptions should be submitted to the City for approval.

These guidelines were adopted by the City Council of the City of oceanside on April 14, 1982 by Resolution No. 82-79.

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General Design Standards

Landscaping in the City of Oceanside must be economical and meet many needs. Below are some guidelines for sound design that will help a growing Oceanside achieve its goals of bringing harmony within the natural landscape (rather than obliterating it) and of bringing continuity to the existing developed areas in the City.

A well-founded design should:

- a. Integrate with, compliment, and improve the existing permanent landscape.
- b. Relate to and compliment the architecture of any structures on the site.
- c. Minimize grading and mitigate erosion.
- d. Provide for screening of unsightly areas and noise as well as provide for wind and sun control.
- e. Minimize the use of water. Water conservation is stressed within City limits.
- f. Provide for variety of design elements.
- g. Use native and drought tolerant plant materials where practical.
- h. Make provisions for wildlife where feasible.
- i. Reflect the needs and expectations of those persons affected by the landscape.
- j. Provide for human comfort by use of benches or other landscape structures where appropriate.

Landscape Architecture Plan Submittals

Owner/consultant shall submit to the City the required documents for all projects where landscape improvements are required as a part of the project development. Submittals may also include model complexes if so determined by the Planning Director and/or City Engineer. The construction of a single family home on an individual lot with no graded slopes does not require the submission of a landscape plan unless specific landscape requirements were made as a condition for approval. However, completion of a Street Tree Memorandum is required (see Appendix; IV-A) unless specifically waived. Single family units must still conform to any applicable sections of the City Code and ordinances pertaining to landscaping prior to occupancy. For further clarification, see Section 507, City of Oceanside Grading Ordinance. All plans submitted shall be prepared under the direct supervision of a Registered Landscape Architect, (State of California), with all drawings bearing his signature (unless specifically waived).

Preliminary Landscape Plans

Preliminary Landscape Plans for projects requiring a landscape plan as determined by the Planning Department shall be submitted to the Engineering Department at the time of the project application:

1. Such plans shall clearly indicate:
 - a. All existing vegetation (native, naturalized, or ornamental trees, shrubs and herbaceous areas including street trees and other parkway plantings).
 - b. All areas in natural state.
 - c. Tabulation of all vegetation to be removed to accommodate project.
 - d. Wildlife found on project site.
 - e. Existing topography.
 - f. Proposed slope gradients.
 - g. Maintenance responsibilities designated.
 - h. Trails, walks, fences, walls.
 - i. Cost estimates with quantities and unit costs.

2. Preliminary Plan Submittals:

- a. To Engineering Department:

Two sets preliminary landscape plan.

One set preliminary cost estimates.

*To be evaluated and incorporated into the design review process. Appropriate items will then become a part of the conditions of approval as a part of the final tract map acceptance by the City.

Landscape Plan Submittal and Review Procedures

1. Landscaping or the installation of an irrigation system in the City of Oceanside shall not be undertaken until the City Landscape Architect and the City Engineer have reviewed and approved plan submittals and specifications, covering the proposed use of plant materials and irrigation systems in order to determine:

- a. That proposed plant material will be suitable aesthetically, physiologically, and ecologically for the particular planting situation.
- b. That proposals for soil preparation are adequate as provided by a certified soils engineer report.
- c. That proposed planting will meet minimum requirements as set forth in Ordinance No. 81-20, Article XV, and will not violate any provisions of the City of Oceanside Grading Ordinance.
- d. That proposed irrigation system will be adequate to properly irrigate proposed planting and is in accordance with City of Oceanside Standard Details and Specifications.
- e. That improvements are permanent and of a nature and quality to insure low maintenance and operation costs.
- f. That all open space and landscaping requirements are met.

2. Plan Check Procedures:

a. Initial landscape Plan Review Submittal

To City Landscape Architect:

Two sets bluelines

Two sets specifications

Two sets irrigation calculations

Two sets soil analysis report

Two sets cost estimate

One set conditions of approval

*Allow twelve (12) working days for initial Landscape Plan Check.

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

***All plans are to be checked by the Engineer of Work for consistency, accuracy, clarity and conformity with City Standard Specifications, drawings and design criteria before submission for approval. If during initial review by the City the plans are found to be incomplete, they will be returned unchecked to the Engineer of Work for completing.

b. Subsequent Review Submittals

To City Landscape Architect:

Two sets blueprints (corrected if required)

Two sets specifications (corrected if required)

Return marked set of plans and specifications if corrections were required.

*Allow six (6) working days for subsequent Landscape Plan Check.

c. Final Plans for Approval

One complete set of mylars for signature.

d. Approved Drawings

Upon City approval of plans, Owner/Developer shall deliver to City Engineering Department: 1. one (1) complete set of signed mylar reproductions, reduced to 24 x 36" size; 2. two (2) complete sets of signed blueprint prints (full size).

e. Approval Deadline

All landscape plan approvals must be accomplished prior to issuance of building permits and prior to commencing any landscape improvement work.

3. Record Set of Drawings for Public Improvements

- a. Prior to the City acceptance of landscape improvements within public areas (i.e. commencement of one (1) year maintenance period), Owner/Developer shall provide to the City:

One marked up set of blueprint prints of "As-built" changes. Once reviewed by the appropriate City Landscape Inspector, these prints shall be returned to the Engineer of Work, and all annotations shall be transferred onto the City's set of mylars, checked out by the Engineer of Work. Return of final corrected mylars shall be accomplished prior to project acceptance.

Bonding Requirements

Slope stabilization planting and irrigation is bonded as a portion of the overall grading bond required by the Engineering Department prior to issuance of grading permits. As certain planting procedures are bonded at different rates, it is recommended that the applicant/owner check with the Engineering Department for the current bonding schedule.

Inspection and Acceptance of Planting and Irrigation System Installations

1. Revisions of the landscape plan must be approved by the City Landscape Architect before any plant materials are installed inconsistent with the original plan. Submit two sets of the revised plans to the City Landscape Architect for review.
2. After installation, but prior to backfill, an inspection of the irrigation system shall be made by the City Landscape Inspector of all points of connection, backflow protection devices, mainlines, electrical connections, automatic controllers, and control valves. Contact the City Landscape Architect to arrange inspection schedule at least 48 hours in advance of the desired inspection.
3. Prior to the release for occupancy, an inspection of the completed landscape installation shall be arranged. This inspection will include, but not be limited to:
 - a. An irrigation coverage test.
 - b. Compliance to approved landscape plans.
 - c. Condition of plant materials (including street trees and slope plantings).
 - d. Any special conditions or approval attached to the project by the Planning Commission and/or City Council.
 - e. Submittal of as-built drawings as well as manuals and controller charts.

Work Performed in Maintenance Assessment District or Public Area

Final acceptance of Landscape Improvements will be made at such time as all planting is in place and established in a healthy condition and irrigation systems are installed as shown on approved plans and in accordance with Oceanside City Standard Details and Specifications. Owner or agent in control of the property shall maintain landscaping and irrigation systems to the satisfaction of the City Landscape Architect for one (1) calendar year after acceptance of improvements by the City Council, at which time the Maintenance Assessment District will be available to service area for continuing maintenance, formally relieving the Contractor of his maintenance responsibilities.

Slope Stabilization

Slope stabilization is a primary concern in the City of Oceanside. All cut or fill slopes in excess of five (5) feet vertical height shall be landscaped and irrigated. This may be waived at the discretion of the City Landscape Architect. Plant materials on slopes must be established prior to release of landscape bonds.

All slopes or natural areas with elevation differences greater than 40 feet vertical rise, or slopes greater than 10 feet vertical rise along public streets or areas separated by a fence, wall or other barrier from the structure, shall be maintained by a Homeowner's Association, Maintenance Assessment District, or other method acceptable to the City. Slopes not within these categories shall be the maintenance responsibility of the individual homeowner.

Extreme Erosion Hazards

Extreme erosion hazards such as steep slopes of highly erodable soils, soils poor in nutrients or impermeable soils, etc., may necessitate the use of more stringent control measures as determined by the City Engineer and/or the City Landscape Architect. Such measures may include, but are not necessarily limited to:

- a. Erosion control planting by hydroseeding, plant pots, or cuttings beyond normal requirements.
- b. Placement of erosion control matting.
- c. Reduction of slope cuts and embankments.
- d. Construction of brow ditches and downdrains.
- e. Construction (or extension) of retaining walls.
- f. Soil stabilization treatment.
- g. Provisions for subsurface drainage.
- h. Special requirements for irrigation.

Fire Prevention

In high fire hazard areas, such as in the suburbs near Chaparral, landscaping should include efforts to prevent the spread of fire to structures. Research by the Fire Retardant Plant Research Project, Los Angeles State County Arboretum, has shown some plants to be relatively non-flammable since they withstand high temperatures for prolonged periods without igniting and do not support open flames when ignited.

Where development occurs adjacent to areas identified as being fire hazardous, owner shall comply with all appropriate recommendations for:

- a. Fire Prevention
- b. Fuel Management and Hazard Reduction
- c. Fire Control
- d. Fire Retardant Plantings

These measures are contained in "Background Report and Recommendations for the Reduction of Fire Hazard at the Natural Open Space/Urban Development Interface," Orange County, California, prepared by the Fire Protection Planning Task Force, September 1976. Refer to the Slope Planting List for Fire Retardant Plant Materials.

CITY OF OCEANSIDE
GUIDELINES & SPECIFICATIONS FOR
LANDSCAPE DEVELOPMENT

January 1982
(Revised August 1984)

SECTION I
PLAN PREPARATION - GUIDELINES/CRITERIA

SECTION I

PLAN PREPARATION

The outline which follows summarizes Plan Preparation information for those preparing plans and detailed drawings for projects within in the City of Oceanside.

1. GENERAL

All landscaping plans and correspondence (including transmittal letters) for projects, must bear the City's file number (usually such as T-17-83, D-14-84 or E-10-83, etc). If the material is for a specific unit within a project, the appropriate unit number is added. For example, Mission View Unit 4 would appear as T-15-81(4). When the map is submitted to the Plan Checkers for their processing, the necessary information to be shown on the map will be transmitted to them and will appear as a correction with the first plan check.

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

As the condition of approval for the landscape plan is normally required prior to recordation of the final map, this means that the cost estimate of the landscape plan must be sufficiently precise to allow the establishment of bonds to cover the cost of the construction.

- A. Standard size sheets shall be used for all plans submitted. All plans shall be of the same size. Final signed mylars (for City Record Set only) shall be reduced to 24" x 36".
- B. Incomplete designs, details, etc. will not be accepted. Checking will be done only on plans which are complete in all phases of design.
- C. Number sheets consecutively, "Sheet ____ of ____."
- D. Minimum scale: 1" = 40'. Scale shall appear on each sheet.

- D. Minimum scale: 1" = 40'. Scale shall appear on each sheet.
- E. North arrow shall appear on each sheet.
- F. Show all match lines clearly, and label to provide easy plan reference.
- G. Vicinity map shall appear on title sheet and identify streets within project and those directly adjacent.
- H. The following items related to landscape and irrigation development shall appear on all plan sheets:
 - (1) definition of public right-of-way, as well as homeowner association maintenance area - (Show clearly)
 - (2) property lines/project limits
 - (3) building areas (existing and proposed)
 - (4) paved areas (including street sidewalks)
 - (5) all walls, fences (including gates) to be constructed by developers
 - (6) other appropriate information such as utilities, easements, street lights, fire hydrants, as they relate to landscape development.

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

2. COVER/TITLE SHEET

The first sheet is a title sheet and shall include:

- A. Project location on location map.
- B. Vicinity map showing the following:
 - (1) Street configuration within or adjacent to the tract or project
 - (2) Nearest arterial highway intersection
 - (3) Street names
 - (4) North arrow
 - (5) Match lines, if applicable
 - (6) Project limits
- C. Phasing Plan Index (plan indicating the anticipated phasing of the overall project if drawings are not going to be submitted all at one time).
- D. Sheet Index (plan indicating portion of project each sheet covers).
- E. General notes (not limited to the following)
 - (1) The Contractor must notify the City Landscape Architect (619/439-7157) 48 hours (two working days), prior to starting construction.
 - (2) The contractor or developer is required to fully maintain all landscaping for (1) year after City acceptance of all improvements within landscape assessment districts. All landscaping on individual lots shall be maintained until occupancy by the respective homeowner.
 - (3) Turfed areas shall have a maximum design slope of 4:1.
 - (4) Name of soils lab(s) performing agricultural and structural soils tests. Soils testing for agricultural suitability shall be accomplished at the conclusion of rough grading.

- (5) The landscape or irrigation contractor is to verify existing P.S.I. at job site prior to installing landscape irrigation system. Verification shall be made with the Oceanside Water Department.
- (6) Owner shall provide a 6" concrete mow strip between mowed turf and ground cover, and 8" concrete mow strip between mowed turf and walls. Refer to Standard Details 202, 203, and 204.
- (7) The Contractor is responsible for obtaining building and plumbing permits prior to commencing wall construction and irrigation installation, respectively.
- (8) Irrigation systems for individual parcels shall have points of connection for the system between the water meter and water service riser into dwelling and ahead of any water regulating device installed for dwelling.
- (9) Work shall be done in accordance with City of Oceanside Guidelines and Specifications for Landscape Development (1984).

F. Title Block

- (1) Project title
- (2) City File number, Tract number, Tentative Map number and parcel numbers if drawings reflect only a portion of the complete tract. These specific reference numbers shall conform to the approved tract map.
- (3) Project address or cross streets.

G. Signature Block for Approvals

Signature block shall be provided on Title Sheet for the following signatures:

- (1) City Engineer
- (2) City Landscape Architect
- (3) City Building Official
- (4) Fire Protection Analyst/Fire Marshall

Upon approval of plans by City, Owner/Developer shall deliver two signed sets of blueprints to City.

- H. Submittal Dates Block -- Clearly indicate date(s) plans were submitted (for each submittal).
- I. Landscape Architect's firm name, address, phone number, date plans were prepared, signature, and seal of Registered Landscape Architect.
- J. Owner/Developer's name, address and phone number.
- K. Hold Harmless Clause (see Appendix; IV-B)

3. PLAN SHEETS

A. Median Design Standards

- (1) Mounding in Medians: Mounding of turf and groundcover areas shall be limited to a maximum of 6" above top of curb and shall have a maximum cross sectional slope of 7%.
- (2) Quick couplers shall occur a minimum of every 200' for entire length of median.

B. Grading

- (1) Indicate existing and proposed grades with contours and spot elevations.
- (2) Mounded turf areas shall have a maximum design slope of 4:1. Mounded ground cover areas shall have a maximum design slope of 2:1.
- (3) Note all grades, flow lines, etc., within public right-of-way.
- (4) Bike grades: 10% maximum slope. Refer to Standard Detail #201.
- (5) Handicap grades: 12 1/2% maximum slope. Refer to City of Oceanside Engineers Manual Standard Detail No. M-11.
- (6) Minimum grade within turf and ground cover: 2%.
- (7) Parkway and common areas where drainage is to be allowed to drain directly onto private property must be accomplished to the satisfaction of the City Engineer. Subsurface drains shall connect into storm drain system or through curb-face.
- (8) All grading and drainage within public right-of-way shall be subject to approval by City Engineer.

- (9) All graded slope 5:1 or steeper and 5' or greater in height shall receive planting and irrigation to be approved by City Landscape Architect. Plant materials shall comply with approved Slope Plant Material List within this manual or as specifically approved.
- (10) Subsurface drainage (with cleanouts) for median islands may be required if gradients promote concentrations of water in specific locations.

C. Crossings

All pedestrian, equestrian and bicycle trails which cross arterial or collector streets shall receive appropriate signs, stripes and pavement markings per State of California Standards. Use of stamped concrete, various enriched paving, etc., shall require approval of City Engineer.

D. Trails

- (1) Equestrian Trails - Owner shall develop all trails with a 10' minimum width.
 - (a) Scarify trail area to a depth of 6", removing rocks, clods, and all undesirable material. Apply approved soil sterilant, fine grade and compact native soil to the satisfaction of the City Engineer.
- (2) Bike Trails - Asphalt concrete bike trails shall be constructed with a 10' minimum width. As specified in Caltrans Planning and Design Criteria for Bikeways in California. Trail designs exceeding City Standard #200 may be required.
- (3) Concrete Walks - Shall be constructed per San Diego Regional Standards G-7.1. Where treewells occur within sidewalk area, a minimum 4' width must be maintained between treewell and edge of sidewalk.

E. Fencing

- (1) Equestrian Trails - Shall be constructed per City Standard Detail #201 and shall occur on both sides of trail unless otherwise approved by City Landscape Architect or Planning Director.
- (2) All masonry perimeter wall designs shall be submitted to Oceanside Building Department for approval. (Ref. to City Approved Height Requirements)

F. Lighting

Wherever possible, lighting designed to accent landscaping, buildings, signs, etc., shall be located on private property. Any lighting systems to be located within the public right-of-way shall be designated by a registered Electrical Engineer. Electrical plans shall be submitted with standard landscape plans and shall be subject for approval by City Engineer and City Landscape Architect.

G. Landscaped Setbacks/Arterial Highways

A 5' minimum setback between property line and screen walls shall be established for arterial highways. This easement shall be landscaped with appropriate materials which effectively screen the walls and are low-maintenance types. Slope plant materials shall comply with approved Slope Plant Material List in these guidelines. Street trees shall conform to the City of Oceanside Approved Street Tree List in these guidelines.

H. Irrigation

The objective of the following guidelines is to aid in the preparation of landscape irrigation drawings and specifications for practices and material most commonly encountered in the field. However, any special conditions which the designer/owner finds during the progress of design, drawings, etc., not covered by these guidelines and specifications shall be submitted to the City at the earliest possible date.

- (1) Provide a complete, automatic landscape sprinkler irrigation design for all landscaped areas as required as a part of the project development. The irrigation system shall be installed in compliance with the Uniform Building Code most recently adopted by the City of Oceanside.
- (2) The landscape irrigation system shall be designed and operated to prevent or minimize run-off and discharge of irrigation water onto roadways, driveways, adjacent properties and all areas not under City jurisdiction.

- (3) Included on the irrigation drawings shall be a complete and comprehensive irrigation legend indicating sprinkler radius in feet, sprinkler operating pressure in P.S.I., sprinkler flow in G.P.M., and sprinkler pattern. All other equipment and materials utilized in the design shall also be included as a part of the irrigation legend. Indicate manufacturer, model number, size and brief description.
- (4) Indicate location of irrigation water meters, irrigation points of connection and electrical points of connection for automatic sprinkler controllers on the irrigation drawings. Indicate whether the contractor, the owner, the utility service company, etc., will be responsible for the coordination and installation of water and service connections.
- (5) The following information shall be provided at each irrigation water meter or irrigation point of connection:
 - (a) Static and residual water pressures.
 - (b) Meter size.
 - (c) Peak irrigation demand in G.P.M.
 - (d) Finish grade at backflow unit and highest head served.
 - (e) Maximum operating G.P.M. for each valve.
- (6) Submit pressure calculations for the worst hydraulic condition at each point of connection. Water movement in system shall not exceed 5 feet per second for pressure main line piping and 7 feet per second for non-pressure lateral line piping.
- (7) All irrigation systems shall be designed to minimize vandalism (with special attention at schools, parks, along trails, roads, walks, etc.).
- (8) Irrigation water system shall be designed to provide adequate moisture for all plant materials used within the design area.
- (9) Provide construction details indicating installation procedures and materials required for the installation of all major components used in the irrigation design in accordance with Standard City Details (see Appendix).

- (10) In an effort to provide a more efficient landscape sprinkler system with a continuing water conservation program as a prime objective, it is suggested that sprinkler head spacing for small sprinkler heads with an effective spray of five to thirty feet in diameter should not exceed 60% of the diameter. Sprinkler spacing for intermediate and large sprinkler heads with an effective spray of up to 120 feet in diameter should not exceed 55% of that diameter. In no case shall sprinkler spacing exceed the manufacturer's recommendations.
- (11) Pressure loss due to friction in sprinkler lateral line piping should not exceed 20% of sprinkler head operating pressure.
- (12) Provide check valves and/or anti-drain valves as may be required to prevent drainage of irrigation water from sprinkler system due to changes in elevation.
- (13) The on-site irrigation water system shall be designed and operated to meet the following conditions with respect to water application and conservation:
 - (a) Irrigation water shall be applied at a rate which does not exceed the infiltration rate of the soil. Where varying soil types are present, the design of the irrigation water system shall be compatible with the lowest infiltration rate present.
 - (b) When the application rate exceeds the infiltration rate of the soil, automatic systems shall be utilized and programmed to prevent or minimize the ponding and/or run-off of irrigation water. The sprinkler system shall not be allowed to operate for a time longer than the landscape's water requirement. If run-off occurs before the landscape's water requirements are met, the automatic controls shall be reprogrammed with additional watering cycles to meet the requirements. This method of operation will control and limit run-off.
- (14) Valves - Sectionalized gate valves shall be provided to allow shutting down various sections of the system independently without affecting the entire system.

Remote Control Valves - Locate remote control valves in shrub areas whenever possible.

Remote control valves located in designated athletic play areas shall be buried 6 inches with yellow valve markers.

Provide uniform coverage and G.P.M. from control valves in each system.

Master Control Valves - Use of master control valves may be required by the City Landscape Architect to protect slopes from erosion damage due to irrigation system malfunctions.

- (15) Slope condition - Provide separate control valves for sprinkler lines operating systems at the top, toe, and intermediate areas of slopes. Wherever possible, sprinkler lines shall run parallel to or as close to parallel to contour lines as possible. Plastic UVR-PVC pipe may be required on above grade application on slopes as determined by the City Landscape Architect. All valves shall be buried below grade and shall be located at the top/toe of slope as to be easily accessible for maintenance.

- (16) System pressure - Design systems to the low static pressure available.

The maximum potential pressure should be considered in the design and regulators provided if required. If water pressure exceeds 80 P.S.I. install pressure regulators at no more than 20% higher than system design pressure.

- (17) Equip all sprinkler heads located in athletic play areas with rubber covers.

- (18) Backflow prevention - A backflow preventer will be required as long as the irrigation water system is using potable water. Installation shall be a minimum of 12" above grade and shall be equipped with required test cocks.

All backflow devices must comply with requirements set forth by the San Diego Health Department, San Diego or Oceanside Water Department and City of Oceanside Building Department.

- (19) Quick coupling valves - Provide three quick coupling valves at each baseball field, to be located at home plate and first and third bases.

Provide quick couplers 100 feet on center in recreational areas and 200 feet on center in general landscaped areas. Provide one quick coupler within 12 inches of paved end sections of landscaped medians (if paved ends occur).

Locate quick couplers adjacent to hardscape.

- (20) If landscaped area requiring irrigation system does not represent the total area and future development of remaining site is under consideration, allowance shall be made in sizing pipe, etc.
- (21) Wherever irrigated areas occur adjacent to trails, paved areas, sidewalks, or any high-use pedestrian areas, pop-up sprinklers shall be used (6" or 12") to minimize vandalism. Avoid above grade sprinklers in these areas in all cases.
- (22) Any item, technique, or requirement set forth in the standard specifications, but not specifically mentioned under Guidelines and Criteria, should be considered in the design of irrigation systems.

I. Planting

- (1) All ornamental planting of parkway trees shall be in accordance with the appropriate City street tree ordinance and conditions.
- (2) Minimum Spacing Instructions for Street Trees:
- Thirty (3) feet apart
 - Twenty-five (25) feet from street intersections
 - Ten (1) feet from driveways, sewer and waterlines
 - Fifteen (15) feet from street light and utility poles
- (3) In no event shall trees or ornamental landscaping be placed so as to obstruct the vision of drivers and/or pedestrians within public rights-of-way.
- (4) New street tree planting in older areas of the City shall reflect those species which exist, and every effort shall be made to match or effectively blend with plant materials that are currently employed.
- (5) Street tree planting in new planting areas shall generally require a uniform tree variety per street(s) in order to assure ease of maintenance and maintain general aesthetic appearance.

- (6) Trees planted by the Developer as a part of the project development shall be installed as per City of Oceanside Standard Details #208-213.
- (7) Minimum acceptable sizes of street/parkway trees shall be 15-gallon container size, excepting larger parkways where some smaller container size materials may be appropriate.
 - (a) Local Streets - Minimum one tree per unit (2 per corner lot) as a solitary planting.
 - (b) Arterial - Minimum 40' on center, each side of street, as a solitary planting.
- (8) All herbicides and weed control materials proposed for use within publicly maintained areas are subject to approval by City Street Superintendent and City Landscape Architect.
- (9) Planting plans shall represent a true and accurate description of actual plant materials to be installed. On-site inspection will strictly enforce representations, types and quantities shown on planting plans.
- (10) Slope planting of Eucalyptus shall consist of 1 gallon or 5 gallon maximum size. All root bound material will not be accepted (see Page 45, Item 1, Paragraph A, Subdivision 3, for more complete discussion).
- (11) Generally planting density of trees within Greenbelt areas shall be a minimum of 60 trees per acre.
- (12) Replacement for Eucalyptus trees within existing windrows shall consist of one of the following, in 5 or 15 gallon containers:
 - (a) Eucalyptus leucoxylon - White Ironbark
 - (b) Eucalyptus cladocalyx - Sugar Gum

J. Graphics/Signage

All graphic and signing systems within public right-of-way for commercial, housing usage shall be subject to approval by the Planning Department and shall be in accordance with appropriate zoning ordinances.

K. Existing Eucalyptus Windrows

The following outlined policy shall apply to existing Eucalyptus windrows which occur within proposed tracts/housing developments:

- (1) Existing trees shall be evaluated by the City to determine which trees can be saved and which trees, due to general decline, decay, etc., shall be removed. Those trees which can be topped, trimmed, etc., shall be preserved. City Landscape Architect shall determine height to which trees shall be topped.
 - (2) Those trees which are determined to be unsafe, diseased, etc., shall be removed, and the stump section ground to finish grade.
 - (3) Subsequent to trimming/topping, ornamental landscaping proposed in areas surrounding existing windrows shall accommodate, as much as possible, the existing tree root system. Trenching for irrigation shall be minimized.
 - (4) Continuing City maintenance in the form of pruning, thinning, etc., shall eliminate top heavy or overgrown windrow trees.
- L. City of Oceanside Zoning Ordinance - All ornamental landscaping, both on private property and within public right-of-way, shall comply with City Zoning and Subdivision Ordinance, in all respects (open space requirements, fencing, front and side yard landscaping, etc.)

CITY OF OCEANSIDE
GUIDELINES & SPECIFICATIONS FOR
LANDSCAPE DEVELOPMENT

January 1982
(Revised August 1984)

SECTION II
SPECIFICATIONS/MATERIALS & INSTALLATION

SECTION II

SPECIFICATIONS/MATERIALS AND INSTALLATION

II-A - IRRIGATION

1. GENERAL

A. Permits and Fees

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

B. Manufacturer's Directions

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

C. Ordinances and Regulations

All local, municipal and state laws, and rules and regulations governing or relating to any portion of Irrigation work are hereby incorporated into and made a part of these specifications, and their provisions shall be carried out by the Contractor. Anything contained in these specifications call for or describe materials, workmanship, or construction of a better quality, higher standard, or larger size than is required by the above rules and regulations, the provisions of these specifications and drawings shall take precedence.

D. Explanation of Drawings

- (1) Due to the scale of drawings, it is not possible to indicate all offsets, fittings, sleeves, etc. which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan his work accordingly, furnishing such fittings, etc. as may be required to meet such conditions.

Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting, and architectural features.

- (2) The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that unknown obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the City as soon as possible. In the event this notification is not performed, the irrigation Contractor shall assume full responsibility for any revision necessary.

2. SUBMITTALS

A. Material List

- (1) The Contractor shall furnish the articles, equipment, materials, or processes specified by name in the drawings and specifications. No substitution will be allowed without prior written approval by the City.
- (2) Equipment or materials installed or furnished without prior approval of the City may be rejected and the Contractor required to remove such materials from the site at his own expense.
- (3) Manufacturers warranties shall not relieve the Contractor of his liability under the guarantee. Such warranties shall only supplement the guarantee.

B. Record and As-Built Drawings

- (1) The Contractor shall provide and keep up to date complete "as built" drawings indicating locations, sizes and kinds of equipment installed. Prints for this purpose may be obtained from the architect at cost. This set of drawings shall be kept on the site and shall be used only as a record set.
- (2) These drawings shall also serve as work progress sheets, and the Contractor shall make neat and legible annotations thereon daily as the work proceeds, showing the work as actually installed. These drawings shall be available at all times for inspection and shall be kept in a location designated by the City.
- (3) Before the date of the final inspection, the Contractor shall turn over all information recorded on the "as built" prints to the Engineer of Work.

- (4) The Contractor shall dimension from two (2) permanent points of reference (building corners, sidewalk, or road intersections, etc.) the location of the following items:
 - (a) Connection to existing water lines.
 - (b) Connection to existing electrical power.
 - (c) Gate valves.
 - (d) Routing of sprinkler pressure lines (dimension max. 100' along routing).
 - (e) Significant changes in routing of lateral lines from those indicated on plans.
 - (f) Sprinkler control valves.
 - (g) Routing of control wiring.
 - (h) Quick coupling valves.
 - (i) Other related equipment as directed by the City.
- (5) On or before the date of the final acceptance of improvements (start of 1-year maintenance period) the Contractor/Developer shall deliver one (1) set of corrected "as-built" mylars as described in Section 3-a, page 4, to the City. Delivery of the mylars will not relieve the Contractor of the responsibility of furnishing required information that may be omitted from the prints.

C. Controller Charts

- (1) As-built drawings shall be approved by the City Landscape Architect, before controller charts are prepared.
- (2) Provide one controller chart for each controller supplied.
- (3) The chart shall show the area controlled by the automatic controller and shall be the maximum size which the controller door will allow.
- (4) The chart is to be a reduced drawing of the actual as-built system. However, in the event the controller sequence is not legible when the drawing is reduced, it shall be enlarged to a size that will be readable when reduced.

- (5) The chart shall be a blackline or blue line ozalid print and a different color shall be used to indicate the area of coverage for each station.
- (6) When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum 10 mils thick.
- (7) These charts shall be completed and approved prior to final inspection of the irrigation system.

D. Operation and Maintenance Manuals

- (1) Prepare and deliver to the City prior to acceptance of improvements (start of 1-year maintenance period) two hard cover binders with three rings containing the following information:
 - (a) Index sheet stating Contractor's address and telephone number, list of equipment with name and addresses of local manufacturer's representatives.
 - (b) Catalog and parts sheets on every type of material and equipment installed.
 - (c) Guarantee statement.
 - (d) Complete operating and maintenance instruction on all major equipment.
- (2) In addition to the above mentioned maintenance manuals, provide the City's maintenance personnel with instructions for major equipment.

E. Equipment to be Furnished

- (1) Supply the City's maintenance personnel with the following tools:
 - (a) Two (2) sets of special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied.
 - (b) Two (2) five foot valve keys for operation of gate valves.
 - (c) Two (2) keys for each automatic controller.
 - (d) One (1) quick coupler key and matching hose swivel for every five quick coupling valves installed.

- (2) The above mentioned equipment shall be turned over to the City at the conclusion of the project. Before final inspection can occur, evidence that the City has received this material must be shown to the City Landscape Architect.
- (3) In the event the Developer elects to allow his Contractor to complete his responsibilities prior to final acceptance of improvements, it is strongly recommended these foregoing requirements be completed at that earlier date; otherwise the Developer shall be solely responsible for completing these requirements.

F. Handling of PVC Pipe and Fittings

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

G. Guarantee

- (1) The guarantee for the sprinkler irrigation system shall be made in accordance with the attached form.
- (2) A copy of the guarantee form shall be included in the operations and maintenance manual.
- (3) The guarantee form shall be re-typed onto the Contractor's letterhead and contain the following information:

GUARANTEE FOR SPRINKLER IRRIGATION SYSTEM

We hereby guarantee that the sprinkler irrigation system we have furnished and installed is free from defects in materials and workmanship, and the work has been completed in accordance with the drawings and specifications, ordinary wear and tear and unusual abuse, or neglect excepted. We agree to repair or replace any defects in material or workmanship, including settling of backfilled areas below grade, which may develop during the period of one year from date of acceptance and also to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the City. We shall make such repairs or replacements within 72 hours of notification that repair work is necessary. In the event of our failure to make such repairs of written notice within a reasonable time after receipt of written notice from the City, we authorize the owner to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.

PROJECT: _____

LOCATION: _____

SIGNED: _____
Contractor

ADDRESS: _____

PHONE: _____

DATE OF ACCEPTANCE: _____

3. MATERIALS

A. General: Use only new materials of brands and types noted on drawings, specified herein, or approved equals.

B. Asbestos-Cement Pressure Main Line Pipe and Fittings

- (1) Pressure supply lines 8 inches and larger shall be Class 150 irrigation pipe, complying with AWWA C400, in 10-foot lengths, unless otherwise noted.
- (2) Fittings (couplings excepted) in A.C.P. shall be case iron, Class 150, complying with ANSI B21.10 and AWWA C110, with hubs modified to accept the pipe ends of the A.C.P. Sealing shall be by means of solid rubber rings. All ring grooves shall be free of casting imperfections and shall comply with dimensional tolerances as published by the manufacturer of the A.C.P.
- (3) Connections to laterals shall be tapped cast-iron tees and bossed couplings except as follows:

Double strap service clamps with rubber seals and flat bronze straps may be used for connections of 50% or less than the diameter of pipe.

Tapped A.C.P. couplings with brass inserts may be used for connections of 3/4, 1, 1-1/4, 1-1/2, and 2 inches.

C. PVC Pressure Main Line Pipe and Fittings

- (1) Rubber gasket type pressure main line piping for sizes 2 1/2" and larger shall be Ring-Tite PVC Class 200.
- (2) Pipe shall be made from an NSF approved Type I, Grade I, PVC compound conforming to ASTM resin specification D1784. All pipe must meet requirements as set forth in Federal Specifications PS-22-70, with an appropriate standard dimension (S.D.R.) (Ring-Tite Pipe).
- (3) Ring-Tite PVC fittings shall be fabricated from Schedule 40, 1-2, II-I NSF Solvent weld PVC fittings conforming to ASTM testing procedure D-2466 and PVC ring-tite bell adapter using solvent and solvent welding procedures recommended by the manufacturer.
- (4) Fabrication shall be performed at the manufacturer's plant location or at an authorized distributor shop location. Field fabrication of ring-tite fittings will not be allowed.

- (5) Solvent-welded type pressure main line piping for sizes 2" and larger shall be PVC Class 315.
- (6) Pipe shall be made from an NSF approved Type I, Grade I, PVC compound conforming to ASTM resin specification D1784. All pipe must meet requirements as set forth in Federal Specification PS-22-70 with an appropriate standard dimension (S.D.R.) (Solvent-Weld Pipe).
- (7) Pressure main line piping for sizes 1 1/2" and smaller shall be PVC Schedule 40 with solvent welded joints.
- (8) Pipe shall be made from NSF approved Type I, Grade I PVC compound conforming to ASTM resin specification 1785. All pipe must meet requirements as set forth in Federal Specification PS-21-70. (Solvent-weld pipe).
- (9) PVC solvent-weld fittings shall be Schedule 40, 1-2, II-I NSF approved conforming to ASTM test procedure D2466.
- (10) Solvent cement and primer for PVC solvent-weld pipe and fittings shall be of type and installation methods prescribed by the manufacturer.
- (11) All PVC pipe must bear the following markings:
 - (a) Manufacturer's name
 - (b) Nominal pipe size
 - (c) Schedule or class
 - (d) Pressure rating in P.S.I.
 - (e) NSF (National Sanitation Foundation) approval
 - (f) Date of extrusion
 - (g) U.P.C. Shield Logo (IAPMO Approval)
- (12) All fittings shall bear the manufacturer's name or trademark, material designation, size, applicable I.P.S. schedule and NSF seal of approval.

D. PVC Non-Pressure Lateral Line Piping

- (1) Non-pressure buried lateral line piping shall be PVC Class 200 with solvent-weld joints.
- (2) Non-pressure on grade lateral line piping shall be brown-line UVR-PVC pipe. Galvanized steel pipe on grade shall not be used without prior approval of the City Landscape Architect.

- (3) Pipe shall be made from NSF approved, Type I, Grade II PVC compound conforming to ASTM resin specification D1784. All pipe must meet requirements set forth in Federal Specification PS-22-70 with an appropriate standard dimension ratio.
- (4) Except as noted in Paragraphs 1 and 2 of part C (this section), all requirements for non-pressure lateral line pipe and fittings shall be the same as for solvent weld pressure main line pipe and fittings as set forth in part C of this section.

E. Brass Pipe and Fittings

- (1) Where indicated on the drawings, use red brass screwed pipe conforming to Federal Specification #WW-P-460.
- (2) Fittings shall be red brass conforming to Federal Specification #WW-P-460.

F. Galvanized Pipe and Fittings

- (1) Where indicated on the drawings, use galvanized steel pipe ASA Schedule 40 mild steel screwed pipe.
- (2) Fittings shall be medium galvanized screwed beaded malleable iron. Galvanized couplings may be merchant coupling.
- (3) All galvanized pipe and fittings installed below grade shall be painted with two (2) coats of Koppers #50 Bitumastic or other approved listed pipe protection coating in accordance with the Uniform Plumbing Code and IAPMO installation Standard IS-13.

G. Copper Pipe and Fittings

- (1) Copper pipe shall be Type "K", hard tempered ASTM B 88 and fittings shall be wrought solder joint type in accordance with ANSI B 16.11.
- (2) Joints shall be soldered with silver solder, 45% silver, 15% copper, 16% zinc, 24% cadmium, and solidus at 1,125 F and liquidus at 1,145 F, conforming to ASTM B-206 and Federal Specification QQB 00655.

H. Thrust Blocks

- (1) Thrust blocks for all specified piping shall be of size and type required by the manufacturer's installation guide.

- (2) Form thrust blocks in such a manner to prevent any concrete from coming in contact with pipe. Thrust blocks shall be between solid soil and the fitting.

I. Quick Coupling Valves

- (1) Quick coupling valves shall have a one or two piece brass body designed for working pressure of 150 P.S.I. operable with quick coupler.
- (2) Quick coupling valves shall be 3/4" size and shall be equipped with a locking vinyl cover yellow in color.
- (3) Quick coupling valves shall be similar to those manufactured by Rainbird or approved equal.

J. Backflow Prevention Units

- (1) Backflow preventers and/or vacuum breakers shall be of size and type as indicated on the drawings. All sprinkler irrigation systems that are using water from the potable water system shall require backflow prevention. All backflow prevention units shall be installed in accordance with requirements set forth by local codes and the County Health Department (see Page 10, Section 19).
- (2) Wye strainers at backflow prevention units shall have a bronzed screwed body for sizes 2" and smaller and 125 lb. cast iron flanged body for sizes 2 1/2" and larger. All wye strainers shall have a minimum 30 mesh monel screen and shall be similar to Bailey #100B or approved equal.

K. Check Valves

- (1) Swing check valves 2" and smaller shall be 200 pound W.O.G. bronze construction with replaceable composition, neoprene or rubber disc, and shall meet or exceed Federal Specification WW-V-51d, Class A, Type IV.
- (2) Anti-drain valves shall be of heavy duty virgin PVC construction with F.I.P. thread inlet and outlet. Internal parts shall be stainless steel and neoprene. Anti-drain valve shall be field adjustable against drawout from 5 to 40 feet of head. Anti-drain and excess flow valve shall be similar to the Valcon "ADV" or approved equal.

L. Gate Valves

- (1) Gate valves 4" and larger shall be iron body, bronze mounted, double discs, parallel seats with pin disc spreader mechanism and shall conform to the American Water Works Association specification C500.
- (2) Gate valves 4" and larger shall have 2" square operating nut, with arrow cast in metal indicating direction of opening.
- (3) Gate valves 4" and larger shall have ends compatible with pipe in which they are being installed.
- (4) Gate valves 4" and larger shall be similar to those manufactured by Kennedy Valve Mfg. Co., or approved equal.
- (5) Gate valves 3" and smaller shall be 125 lb. SWP bronze gate valve with screw-in bonnet, nonrising stem, and solid wedge disc, and shall conform to federal specification WW-V-54, Type 1, Class A.
- (6) Gate valves 3" and smaller shall have threaded ends and shall be equipped with a bronze handwheel.
- (7) Gate valves 3" and smaller shall be similar to those manufactured by Hammond (609 Series) or approved equal.
- (8) All gate valves shall be installed per detail (Standard Detail 114).

M. Control Wiring

- (1) The electrical system shall be installed in accordance with the national Electrical Code most recently adopted by the City of Oceanside. Connections between the automatic controllers and the electric control valves shall be made with direct burial copper wire AWG-U.F. 600 volt. Pilot wires shall be a different color wire for each automatic controller.

Common wires shall be white with a different color stripe for each automatic controller. Install in accordance with valve manufacturer's specifications. Wire sizes shall be 14 ga. up to 750', 12 ga. up to 1200', 10 ga. up to 2000', from valve to controller.
- (2) Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines wherever possible.

- (3) Where more than one (1) wire is placed in a trench, the wiring shall be taped together at intervals of ten (10) feet.
- (4) An expansion curl should be provided within three (3) feet of each wire connection and at each change in direction. Expansion curls shall be formed by wrapping at least five (5) turns of wire around a one-inch in diameter pipe, then withdrawing the pipe.
- (5) All splices shall be made with Scotch-Lok #3576 Connector Sealing Packs, Pen-Tite wire connector or approved equal. Use one splice per connector sealing pack.
- (6) Field splices between the automatic controller and electrical control valves will not be allowed without prior approval of the City, and placed inside approved pull box (see Detail #107).

N. Automatic Controller

- (1) The automatic controller shall have at least the minimum number of stations as indicated on the drawings and shall be completely automatic in operation, and shall electronically start the sprinkler cycle and electronically time the individual stations. Controller and valve shall be by the same manufacturer or as approved by City Landscape Architect.
- (2) The controller shall have a standard 117 volt, 60 cycle power input, and 26.5 volt, 2.2 amp output.
- (3) The controller shall have 14-day programming and be capable of automatically starting a watering cycle at any time on the hour for 23 hours per day.
- (4) Each station shall have an off switch for zero time and individual timing control for 2 to 60 minutes for each station.
- (5) Each station shall have an off switch for eliminating one or more stations from the automatic timing sequence or for initiating a repeat cycle on any or all stations after the normal watering cycle has been completed.
- (6) It shall be possible to operate the controller manually and to select and operate manually any station.

- (7) Controller shall be equipped with a reset circuit breaker, and shall be housed in a locking, waterproof cabinet.
- (8) The controller shall have as standard built-in features, an electrical circuit for booster pump operation and an electrical circuit for a master valve operation.
- (9) Automatic controllers shall be approved by City Landscape Architect.
- (10) Install all automatic controllers as per Standard Detail #102 and 103.

O. Electric Control Valves

- (1) The electric control valve shall be a normally closed, 24 volt 60 cycle valve.
- (2) The valve shall have a slow uniform closure to eliminate water hammer or chatter.
- (3) All valves shall have a manual flow adjustment.
- (4) Valve body and bonnet shall be of cast brass with non-corrosive components.
- (5) Valve shall be pressure rated at 150 P.S.I.
- (6) Electric control valves shall be by the same manufacturer as the automatic controller.
- (7) Electric control valves shall be approved by City Landscape Architect.
- (8) Install all electric control valves per Standard Detail #117.
- (9) All controllers will be equipped with soil sensors in conjunction with tensiometers in electric control valve boxes.

P. Outdoor Automatic Controller Enclosure

- (1) All automatic sprinkler controllers installed outside of a building shall be wall mounted within a vandal resistant automatic controller enclosure.

- (2) The outdoor pedestal mount controller enclosure shall be of appropriate size to adequately house specified controller made of weather resistant and collision resistant 12 gauge hot rolled steel, finished with weather resistant medium green epoxy paint. Lockable hinged doors shall be equipped with full length stainless steel gasketed hinges. Enclosures shall be as manufactured by Cross Brothers, Inc., (213) 266-2000.

Q. Control Valve Boxes

- (1) Use 9" x 24" round box for all gate valves, Brooks #9 or approved equal.
- (2) Use 9 1/2" x 16" x 11" rectangular box with green bolt-down cover for all electrical control valves, Carson Industries 1419-12B or approved equal.

R. Sprinkler Heads

(1) General

- (a) All sprinkler heads shall be of the same size, type, and shall deliver the same rate of precipitation with the diameter (or radius) of throw, pressure, and discharge as shown on the plans.
- (b) Spray heads shall have a screw adjustment.
- (c) Riser units shall be fabricated in accordance with the details shown on the plans.
- (d) Riser nipples for all sprinkler heads shall be the same size as the riser opening in the sprinkler body.
- (e) The City Landscape Architect encourages using heads with a low precipitation rate where possible.
- (f) All sprinkler heads of the same type shall be of the same manufacturer.

(2) Type "A" Gear Driven Rotary Pop-Up Sprinklers

- (a) All type "A" sprinklers shall be high pop-up type with tough, corrosion resistant, durable bodies injection molded out of Cycloc.

- (b) All type "A" sprinklers shall have an easily accessible screen to prevent plugging of nozzle orifices from debris in water supply source.
 - (c) All type "A" sprinklers shall have a special nozzle piston seal which continually wipes any dirt from the nozzle piston. This feature, plus positive spring retraction, shall prevent sticking up of nozzle pistons.
 - (d) In lawn areas use Toro 300 series stream rotor, Toro 320 series Rain Pro, Toro 620 series gear driven rotary, Toro 640 series gear driven rotary or approved equal.
 - (e) In ground cover and shrub areas use 12" pop-up Toro 300 series stream rotor, 12" pop-up Toro 320 series Rain Pro or approved equal.
- (3) Type "B" Pop-Up Lawn Spray
- (a) Pop-up lawn spray heads shall have a minimum 4" pop-up nozzle piston with a stainless steel retraction spring. The sprinkler body shall be manufactured of a corrosion resistant material such as high strength, ultra-violet and impact resistant plastic.
 - (b) Nozzles for 4" pop-up lawn spray sprinklers shall be of brass construction and shall be adjustable.
 - (c) 4" pop-up lawn spray sprinklers shall be similar to the Moody 4400 series, Safe-T-Lawn GL-74 series or approved equal.
- (4) Type "C" Pop-Up Shrub Spray
- (a) Pop-up shrub spray heads shall have a minimum 6" pop-up nozzle piston with a stainless steel retraction spring. The sprinkler body shall be manufactured of a corrosion resistant material such as high strength, ultra-violet and impact resistant plastic.
 - (b) Nozzles for 6" pop-up shrub spray sprinklers shall be of brass construction and shall be adjustable.
 - (c) 6" pop-up shrub spray sprinklers shall be similar to the Moody 4600 series, Safe-T-Lawn GL-71 series, or approved equal.

- (d) Type "C" pop-up shrub spray heads should be used within low growing ground cover areas only.
- (5) Type "D" Pop-Up Shrub Spray
 - (a) Pop-up shrub spray heads shall have a minimum 12" pop-up nozzle piston with a stainless steel retraction spring. The sprinkler body shall be manufactured of a corrosion resistant material such as high strength, ultra-violet and impact resistant plastic.
 - (b) Nozzles for 12" pop-up shrub spray sprinklers shall be of brass construction and shall be adjustable.
 - (c) 12" pop-up shrub spray sprinklers shall be similar to the Moody, Safe-T-Lawn GL-78 series, or approved equal.
- (6) Type "E" Shrubbery Spray
 - (a) All shrub spray heads shall be of one or two piece brass construction with adjustable nozzle. Body shall be quipped with 1/2" F.I.P. threads.
 - (b) Shrub spray heads shall be similar to Rainbird 2400 series, Moody 24S series, or approved equal.
- (7) Type "F" Impact Sprinkler
 - (a) Impact sprinklers shall be of brass construction and equipped with a bearing to seal out sand and silt and a replaceable wearing ring.
 - (b) Part circle impact sprinklers shall be equipped with an anti-backsplash device and adjustable breakup pin to regulate radius of coverage.
 - (c) Part circle impact sprinklers shall be equipped with a vandal resistant locking arc stop.
 - (d) Impact sprinklers shall be similar to those manufactured by Rainbird or approved equal.

- (8) Type "G" Gear Driven Rotary Shrub Sprinkler
- (a) Type "G" sprinklers shall be constructed with tough corrosion resistant, durable bodies molded out of Cylolac.
 - (b) Type "G" sprinklers shall be gear driven and have an easily accessible screen to prevent plugging of nozzle orifices from debris in water supply source.
 - (c) Gear driven rotary shrub sprinklers shall be similar to the Toro 300 series shrub stream rotor, Toro 320 series shrub Rain Pro Rotor, or approved equal.

S. Booster Pump

- (1) Pump shall be equipped with tapped holes for pressure gauges on suction and discharge ports of pump.
- (2) All fittings shall be brass.
- (3) Suction line assembly shall be sized the same as the pump section inlet.
- (4) All pumps shall be equipped with a pump panel within 10' of pump location. Pump panel shall be housed in a lockable waterproof enclosure with the following components: a) HOA (Hand, Off, Automatic) switch. "Hand" position shall be spring loaded to return to "Off" position. b) 24 volt transformer. c) Minimum run timer with settings from 0-10 minutes.
- (5) Irrigation plan submittals shall include complete detailed drawing of pump assembly and all electrical installation from electric meter through panel, and to pump motor. All details and/or equipment will be submitted to the City Landscape Architect for approval and/or approved equals.
- (6) All booster pumps and electric panels shall have a slump stone (or approved equal) block wall installed around them, for vandalism as well as aesthetic purposes. Minimum clearance around pumps and panel will be 24". Height of block wall fence will be determined by the City Landscape Architect.
- (7) All booster pumps will have LeMeur type enclosures from LeMeur Welding and Mfg. Co. or approved equal. See City Standard Detail #106 for proper installation procedures. (213)-427-5421.

4. INSTALLATION PROCEDURES

A. Site Conditions

- (1) Exercise extreme care in excavating and working near existing utilities. Contractor shall be responsible for damages to utilities which are caused by his operations or neglect. Check existing utilities drawings for existing utility locations. Call out mark-out crews for each utility.
- (2) Coordinate installation of sprinkler irrigation materials, including pipe, so there shall be NO interference with utilities or other construction or difficulty in planting trees, shrubs, and ground covers.
- (3) The Contractor shall carefully check all grades to satisfy himself that he may safely proceed before starting work on the sprinkler irrigation system.

B. Water Supply

- (1) Sprinkler irrigation system shall be connected to water supply points of connection as indicated on the drawings.
- (2) Connections shall be made at approximate locations as shown on drawings. Contractor is responsible for minor changes caused by actual site conditions. Connection will be made by the Contractor in coordination with the Water Department.

C. Electrical Supply

- (1) Electrical connections for automatic controller shall be made to electrical points of connection as indicated on the drawings.
- (2) The electrical point of connection will be noted on plan by the landscape Architect in coordination with San Diego Gas and Electric Company. This will include connection to electrical controller, showing type and details of all equipment necessary for hook-up procedures.
- (3) Electric pedestal and all equipment will be as per City of Oceanside Details 100 and 101 or City-approved equals. Hook-up procedures will be noted on plan by the Landscape Architect.

- (4) If booster pumps are involved on a project, details and equipment as well as hook-up procedure will be submitted by the Landscape Architect and/or for approved equals.
- (5) The contractor will inform the City Landscape Architect of minor changes caused by actual site conditions.

D. Trenching

- (1) Dig trenches straight and support pipe continuously on bottom of trench. Lay pipe to an even grade. Trenching, excavation shall follow layout indicated on drawings and as noted.
- (2) Trenching on slopes shall receive prior approval of the City Landscape Architect.
- (3) Provide a minimum of thirty six (36) inches of cover for all pressure supply lines 6" and larger.
- (4) Provide a minimum of twenty four (24) inches of cover for all pressure supply lines 3" and 4" in size.
- (5) Provide for a minimum of eighteen (18) inches cover for all pressure supply lines 2 1/2" and smaller.
- (6) Provide for a minimum cover of twelve (12) inches for all non-pressure lines.
- (7) Provide for a minimum cover of eighteen (18) inches (or at same depth as mainline) for all control wiring.

E. Backfilling

- (1) The trenches shall not be backfilled until all required tests are performed. Trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand, or other approved materials, free from large clods of earth or stones. Backfill shall be mechanically compacted in landscaped areas to a dry density equal to adjacent undisturbed soil in planting areas. Backfill will conform to adjacent grades without dips, sunken areas, humps or other surface irregularities.
- (2) A fine granular material backfill will be initially placed on all lines. No foreign matter larger than one-half (1/2) inch in size will be permitted in the initial backfill.

- (3) Flooding of trenches will be permitted only with approval of the City.
- (4) If settlement occurs and subsequent adjustments in pipe, valves, sprinkler heads, lawn or planting, or other construction are necessary, the Contractor shall make all required adjustments without cost to the City.

F. Trenching and Backfill Under Paving

- (1) Trenches located under areas where paving, asphaltic concrete or concrete, will be installed shall be backfilled with sand (a layer six (6) inches below the pipe and three (3) inches above the pipe) and compacted in layers to 90% compaction, using manual or mechanical tamping devices. Trenches for piping shall be compacted to equal the compaction of the existing adjacent undisturbed soil and shall be left in a firm unyielding condition. All trenches shall be left flush with the adjoining grade. The sprinkler irrigation Contractor shall set in place, cap and pressure test all piping under paving prior to the paving work.
- (2) Generally, piping under existing walk may be accomplished by jacking or boring, but where any cutting or breaking of sidewalk and/or concrete is necessary, it shall be done and replaced by the Contractor as part of the contract cost. Permission to cut or break sidewalks and/or concrete shall be obtained from the City.
- (3) Provide for a minimum cover of eighteen (18) inches between the top of the pipe and bottom of the aggregate base for all pressure and non-pressure piping installed under asphaltic concrete paving. All sleeves under paving shall be schedule 40 P.V.C. which shall be installed under all paving/concrete areas.

G. Assemblies

- (1) Routing of sprinkler irrigation lines as indicated on the drawings is diagrammatic. Install lines (and various assemblies) in such a manner as to conform with the details per plans. See page 21 for "As-built" responsibilities.
- (2) Install NO multiple assemblies on plastic lines. provide each assembly with its own outlet.

- (3) Install all assemblies specified herein in accordance with respective detail. In absence of detail drawings or specifications pertaining to specific items required to complete work, perform such work in accordance with best standard practice with prior approval of the City.
- (4) PVC pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.
- (5) On PVC to metal connections, the Contractor shall work the metal connections first. Actual PVC to metal connections shall only be accomplished by PVC male adapters screwed into PVC female fittings. Teflon tape or approved equal, shall be used on all threaded PVC to PVC, and on all threaded PVC to metal joints. Light wrench pressure is all that is required. Where threaded PVC connections are required, use threaded PVC adapters into which the pipe may be welded.

H. Line Clearance

All lines shall have a minimum clearance of six (6) inches from each other and from lines of other trades. Parallel lines shall not be installed directly over one another. Installation of lines for other trades shall not be laid in irrigation trenches, but shall be installed in a separate trench.

I. Automatic Controller

Install as per manufacturer's instructions. Remote control valves shall be connected to controller in numerical sequence as shown on the drawings.

J. High Voltage Wiring for Automatic Controller

- (1) 120 volt power connection to the automatic controller shall be provided by the contractor.
- (2) All electrical work shall conform to local codes, ordinances, and union authorities having jurisdiction.

K. Remote Control Valves

Install where shown on drawings and details. When grouped together, allow at least twelve (12) inches between valves. Install each remote control valve in a separate valve box.

L. Flushing of System

- (1) After all new sprinkler pipe lines and risers are in place and connected, all necessary diversion work has been completed, and prior to installation of sprinkler heads, the control valves shall be opened and a full head of water used to flush out the system.
- (2) Sprinkler heads shall be installed only after flushing of the system has been accomplished to the complete satisfaction of the City.

M. Sprinkler Heads

- (1) Install the sprinkler heads as designated on the drawings. Sprinkler heads to be installed shall be equivalent in all respects to those itemized on plans and in details.
- (2) Spacing of heads shall not exceed the maximum indicated on the drawings. In no case shall the spacing exceed the maximum recommended by the manufacturer.

N. Drip Irrigation Systems

Drip irrigation is encouraged within City limits, particularly where chance of run-off is imminent.

Drip systems within public right-of-way shall require approval by the City Landscape Architect.

Details and all equipment used will be submitted for City approval. See Standard Details #132, 133 and 134.

O. Temporary Repairs

The City reserves the right to make temporary repairs as necessary to keep the sprinkler system equipment in operating condition. The exercise of this right by the City shall not relieve the Contractor of his responsibilities during the 90-day maintenance period.

P. Existing Trees

Where it is necessary to excavate adjacent to existing trees, the Contractor shall use all possible care to avoid injury to trees and tree roots. Excavation in areas where two (2) inch and larger roots occur shall be done by hand. All roots two (2) inches and larger in diameter, except directly in the path of pipe or conduit, shall be tunneled under and shall be heavily wrapped with burlap, to prevent scarring or excessive drying. Where a

ditching machine is run close to trees having roots smaller than two (2) inches in diameter, the wall of the trench adjacent to the tree shall be hand trimmed, making clean cuts through. Trenches adjacent to trees should be closed within twenty-four (24) hours, and where this is not possible, the side of the trench adjacent to the tree shall be kept shaded with burlap or canvas.

Q. Field Quality Control

(1) Adjustment of the System

- (a) The Contractor shall flush and adjust all sprinkler heads for optimum performance and to prevent over-spray onto walks, roadways, and buildings as much as possible.
- (b) If it is determined that adjustments in the irrigation equipment will provide proper and more adequate coverage, the Contractor shall make such adjustments prior to planting. Adjustments may also include changes in nozzle sizes and degrees of arc as required.
- (c) Lowering raised sprinkler heads by the Contractor shall be accomplished within ten (10) days after notification by City.
- (d) All sprinkler heads shall be set perpendicular to finished grades unless otherwise designated on the plans.

(2) Testing of Irrigation System

- (a) The Contractor shall request the presence of the City at least 48 hours (2 working days) in advance of testing.
- (b) Test all pressure lines under hydrostatic pressure of 150 pounds per square inch, and prove watertight.

NOTE: Testing of pressure main lines shall occur prior to installation of electric control valves.

- (c) All piping under paved areas shall be tested under hydrostatic pressure of 150 pounds per square inch, and proved watertight, prior to paving.

- (d) Sustain pressure in lines for not less than three (3) hours. If leaks develop, replace joints and repeat test until entire system is proven watertight.
- (e) All hydrostatic tests shall be made only in the presence of the City. No pipe shall be back-filled until it has been inspected, tested and approved.
- (f) Furnish necessary force pump and all other test equipment.
- (g) When the sprinkler irrigation system is completed, perform a coverage test in the presence of the City, to determine if the water coverage for planting areas is complete and adequate. Furnish all materials and perform all work required to correct any inadequacies of coverage due to deviations from plans, or where the system has been willfully installed as indicated on the drawings when it is obviously inadequate, without bringing this to the attention of the City. This test shall be accomplished before any ground cover is planted.
- (h) Upon completion of each phase of work, entire system shall be tested and adjusted to meet site requirements by the Contractor and City Landscape Inspector.

R. Inspection Schedule

- (1) The Contractor shall be responsible for notifying the City Landscape Architect 48 hours (or 2 working days) in advance for the following inspections (619/439-7157):
 - (a) Pre-job conference - 2 working days
 - (b) Trenching - 2 working days
 - (c) Pressure supply line installation and testing - 2 working days
 - (d) Lateral line and electrical valves - 2 working days
 - (e) Coverage tests - 2 working days
 - (f) Pre-maintenance and final inspection - 2 working days
- (2) No work shall be backfilled until appropriate inspections and testing has been completed and approved by the City.

- (3) No inspection will commence without as-built drawings. In the event the Contractor calls for an inspection without as-built drawings, without completing previously noted corrections, or without preparing the system for inspection, he shall not receive inspection.

S. Maintenance

- (1) The entire sprinkler irrigation system shall be under full automatic operation for a period of seven (7) days prior to any planting.
- (2) The City reserves the right to waive or shorten the operation period.
- (3) Landscape irrigation systems within public rights-of-way and within landscape maintenance assessment districts shall be fully maintained by the Contractor/Developer for a period of one (1) year prior to final acceptance by the City. This period commences upon approval of landscape improvements by the City Council, generally at the same time as acceptance of all public works improvements. This time may be extended if the maintenance provisions are not met (see Section III - Maintenance and Inspection).

T. Clean-Up

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

U. Final Inspection Prior to Acceptance

- (1) The Contractor shall operate each system in its entirety for the City at time of final inspection. Any items deemed not acceptable by the Inspector shall be reworked to the complete satisfaction of the City.
- (2) The Contractor shall show evidence that the City has received all accessories, charts, record drawings, and equipment as required before final inspection can occur.
- (3) End of maintenance shall occur only on the written acceptance by the City of Oceanside.

II-B - LANDSCAPING

1. MATERIALS

A. Plant Material

- (1) Nomenclature - The scientific and common names of plants specified shall conform with the approved names given in "A Checklist of Woody Ornamental Plants in California" Manual 32, published by the University of California School of Agriculture (1963).
- (2) Labeling - Each group of plant materials delivered to the site shall be clearly labeled as to species and variety and nursery source.
- (3) Quality and Size - Plants shall be in accordance with the California State Department of Agriculture's regulation for nursery inspections, rules and grading. All plants shall have a normal habit of growth and shall be sound, healthy, vigorous, and free of insect infestations, plant diseases, sun scalds, fresh abrasions of the bark, or other objectionable disfigurements. Tree trunks shall be sturdy and well hardened off. All plants shall have normally well-developed branch systems and vigorous and fibrous root systems which are not root or pot bound. In the event of disagreement as to condition of root system, the root condition of plants furnished by the Contractor in containers will be determined by removal of earth from the roots of not less than two plants of each species or variety. Where container grown plants are from several sources, the roots of not less than two plants of each species or variety from each source will be inspected. In case the sample plants inspected are found to be defective, the City landscape Architect reserves the right to reject the entire lot or lots of plants represented by the defective samples. The City Landscape Architect is the sole judge as to acceptability.

The size of the plants will correspond with that normally expected for species and variety of commercially available nursery stock, or as specified in the drawings. The minimum acceptable size of all plants, measured before pruning with the branches in normal position, shall conform with the measurements, if any, specified on the drawings in the list of plants to be furnished. Plants larger in size than specified may be used with the approval of the City landscape Architect, but the use of larger plants will make no change in contract price.

Bare root plantings in publicly maintained areas shall be done only with special approval of the City landscape Architect.

- (4) Rejection or Substitution - All plants not conforming to the requirements herein specified, shall be considered defective, and such plants, whether in place or not, shall be marked as rejected and immediately removed from the site of the work and replaced with new plants at the Contractor's expense. The plants shall be of the specie, variety, size and condition specified on the drawings. Under no condition will there be any substitution of plants or sizes for those listed on the accompanying plans, except with the expressed consent of the City Landscape Architect.
- (5) Pruning - At no time shall the tree or plant materials be pruned, trimmed or topped prior to delivery, and alteration of their shape shall be conducted only with the approval and when in the presence of the City landscape Architect.
- (6) Protection - All plants at all times shall be handled and stored so that they are adequately protected from drying out, from wind burn, or from any other injury.
- (7) Right of Inspection - The City Landscape Architect reserves the right to approve or reject at any time upon delivery or during the work any or all plant material regarding size, variety or condition.
- (8) Soils Test - Two (2) copies of soils tests performed by an approved agronomic soils testing laboratory shall be submitted with plans. All soil samples shall be taken in the field by a qualified soils technician unless prior approval for alternative procedures is given by the City Landscape Architect. Tests shall include a fertility and suitability analysis with written recommendations. Consultant shall comply with recommendations given for soil amendments, plant material selections and irrigation equipment.

B. Topsoil

Topsoil shall consist of a natural, fertile, friable, sandy loam soil possessing the characteristics of representative soils in the vicinity which produce heavy growth of crops, grasses, or other vegetation and shall be obtained from natural well drained areas. Before removal of the topsoil, the surface at the source of supply is to be stripped to a depth of two inches in

order to remove weed seeds, roots, etc. The source of topsoil shall be free from Bermuda grass, crab grass, and all noxious weeds or grasses. The topsoil shall be free from subsoil, refuse, heavy roots, clay lumps, stones larger than one inch in size, noxious weeds, sticks, brush, litter and other deleterious substances. In no case shall there be more than five percent by volume of the following: stones larger than one inch, coarse sand, and small clay lumps.

The soil shall be free from insoluble carbonates and shall have the following analysis, which shall be verified by a soil analysis made at the Contractor's expense.

pH - maximum of 7.0; minimum of 6.0
EC_o - zero to three maximum (electrical conductivity)
ESP - zero to twelve maximum (exchangeable sodium percentage)

The soil shall be subject to inspection, at the source of supply prior to delivery.

C. Soil Conditioners and Fertilizers

(1) Soil conditioner with fertilizer included, shall consist of organic materials comprised of decomposed animal and vegetable matter and composted to support bacterial cultures. Soil conditioner shall be "Gro-Power Plus" or approved equal, and shall conform to the following analysis:

(a) Particle Size - 63 1/2% thru +100 Screen
36 1/2% thru -100 Screen

(b) pH - 4.5 to 4.7

(c) Organic Content - Humus - 50%
Humic Acids - 15%
Note: Poultry, Animal or Human waste not acceptable (Organic fiber, not Humus: see definition of Humus in Western Fertilizer Handbook-Fifth edition)

(d) Chemical Analysis:

Total Nitrogen.....5.00%
 *Ammonic nitrogen.....1.00%
 **Organic nitrogen.....4.00%
Available phosphoric acid***.....3.00%
Soluble potash****.....1.00%
Iron (derived from iron sulfate).....1.00%
Zinc (derived from zinc sulfate).....0.05%
Manganese (derived from manganese sulfate)0.05%
 *derived from ammonium phosphate
 **derived from compost, meat meal and urea
 ***derived from compost, meat meal and
 diamonium phosphate
 ****derived from compost and muriate of potash

Soil Penetrant - Alkyl Naphthalene
Sodium Sulfonate.....2.00%

(e) Materials shall be mixed thoroughly and bagged
in 50 lb. or 80 lb. bags.

(2) Organic Soil Amendments - derived from Redwood, Fir
or Pine wood or bark, granular in nature stabilized
with nitrogen, and having the following properties:

- (a) Particle size - Minimum 95% passing 4 mesh
screen (6.35 MM standard
sieve)
Minimum 80% passing 8 mesh
screen (2.33 MM standard
sieve)
- (b) Nitrogen content - 0.5% based on dry weight for
Redwood sawdust, 0.7% based
on dry weight for Fir
sawdust.
1.0% based on dry weight for
Fir or Pine Bark.
NOTE: Pine sawdust not
acceptable.
- (c) Salinity - Saturation extract
conductivity shall not
exceed 3.5 millimhos/
centimeter at 25 degrees
centigrade.
- (d) Organic content - Minimum 90% by weight

(3) Minerals:

(a) Soil Sulfur (S)....As required from soil report.

(b) Ferrous Sulfate -
as metallic 20%.....As required from soil report.

(c) Agricultural
Gypsum ($\text{CaSO}_4 2\text{H}_2\text{O}$).As required from soil report.

(d) Lime (CaO).....As required from soil report.

(4) Redwood Shavings - redwood shavings shall be leached and nitrogen fortified with the residual nitrogen content of 1%.

(5) Pre-Plant Commercial Fertilizer - shall be uniform in composition, free flowing, suitable for application with approved equipment, and delivered to the project site in unopened original container or package, each bearing the manufacturer's statement of guaranteed analysis, and shall contain the minimum available percentage by weight of plant food as specified in the approved agronomic soils report.

D. Subsurface Planter Box

Planter box incorporated into street tree planting (15 gal.) for the purpose of long-term root control shall be a pre-fabricated high-impact polystyrene planter box as manufactured by Deep Root Corp. or approved equal. Install per Standard Details #210-212.

E. Tree Ties

Tree ties shall be installed per Standard Detail(s) and shall be corded rubber tree straps, side nailed to stake with 1" roofing nail. Tree straps by "Gro-Strait" products or approved equal. Secure in three places minimum.

F. Tree Stakes

Tree stakes shall be straight grained lodge pole pine, free from knots, splits or disfigurements. Stakes shall be 10' long except when staking Eucalyptus which shall receive 12' long stakes. Install per Standard Details #208-212.

G. Guying Materials

Wire shall be zinc-coated iron, 10 gauge minimum, and solid core. Wire covering at tree shall be 1/2 inch diameter minimum, new two-ply garden hose (reinforced rubber or plastic).

All guys are to be flagged. Ninety percent wire length is to be covered. White PVC 1/4 inch diameter tube covering shall be used.

H. Bark Chips

Bark chips shall be regular, ground, redwood or fir bark, consisting of 1/2" to 1" chips. Prior to delivery to the site, the Contractor shall submit samples to the City Landscape Architect for approval.

I. Erosion Control Matting

Erosion control matting shall be of open weave, furnished in rolled strips as follows: Length - approximately 225 feet; width - 48 inches plus or minus one inch, with an approximate one (1) inch square mesh. Fabric shall average .4 pounds per linear foot. The erosion control matting shall be manufactured from loosely twisted jute yarn not varying in thickness by more than one-half its normal diameter, equal in quality to "Ludlow Soil Saver #48" or approved equal.

J. Staples - Staples for erosion control shall be 11 gauge steel wire bent in a U shape six inches minimum length and one inch wide.

K. Wetting Agent - 95% alkyl Polyethylene Glycol Ether such as: "Commercial Water In" or approved equal.

L. Seed

All seed used for lawn plantings or erosion control planting or for any other reasons specified in the plans shall be labeled and furnished in sealed standard containers with duplicate signed copies of a statement from the vendor, certifying that each container of seed delivered is fully labeled in accordance with the California State Agricultural Code. Seed which has become wet, moldy, or otherwise damaged in transit or storage will not be accepted.

Erosion control and permanent seed mixes shall be specified in detail and subject to review for compatibility with soil type(s), adjoining land uses, and maintenance practicality.

M. Sod

Sod shall be fully mature, well maintained, of the grass variety specified, free of all other grasses or weeds, and shall be evenly cut with a conventional sod cutting machine to a thickness of 1 1/2 inches. All material shall be from the same growing ground and delivered fresh to the job site.

N. Hydromulching

- (1) Wood Cellulose Mulch - Mulch shall be clean, natural, wood cellulose fiber. Natural wood cellulose fiber shall be processed in such a manner that it will contain no growth or germination inhibiting factors and shall be dyed green to facilitate metering of materials. It shall be manufactured in such a manner that after each addition and agitation in slurry tanks with fertilizer, seed, water and other approved additives, the fibers in the material will become uniformly suspended to form a homogeneous slurry; and that when hydraulically sprayed on the ground cover impregnated uniformly with seed; and which, after application, will allow the absorption of moisture and will allow rainfall to percolate to the underlying soil.
- (2) Fertilizer shall consist of organic materials comprised of decomposed animal and vegetable matter and composted to support bacterial cultures. Fertilizer shall be "Gro-Power" or approved equal.
- (3) Humectant - HL-80 Humectant or approved equal.
- (4) Soil Binder - Terra Tack III or approved equal.
- (5) Equipment - Hydraulic equipment used for the application of slurry shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix above slurry. Distribution lines shall be large enough to prevent stoppage and to provide even distribution of the slurry over the ground. In order to facilitate proper coverage, pump must be capable of exerting up to 150 psi at the nozzle. The slurry tanks shall have a minimum capacity of 1500 gallons and shall be mounted on a traveling unit which will place the slurry tank and spray nozzles within sufficient proximity to the areas to be seeded so as to provide uniform distribution without waste.

O. Weed Abatement Program

The use of the herbicide "Round-up" or approved equal shall be accomplished for slope/planting areas. Refer to page 57 for guidelines for proper application procedures.

2. INSTALLATION PROCEDURES

A. Grading and Soil Preparation

- (1) All finish grading and mounding shall be completed prior to soil preparation.
- (2) Planting areas shall be free of all weeds (plants not specified in planting areas), stones, stumps, roots, or other debris 1 inch in diameter or larger for a minimum of 2 inches in depth.
- (3) Soil shall be graded to a smooth and even surface conforming to required finish grade. Finish grade adjacent to walks, paved areas, curbs, manholes, cleanouts, valve boxes, and similar features shall be 1 inch below the surface in turf and 2 inches below in ground cover/shrub areas. Grades between such features shall be carefully sustained and blended to eliminate abrupt changes.
- (4) Planting areas to receive sod shall sustain a finish grade of such depth that installed sod shall be flush with finish surfaces (walks, paved areas, etc.)
- (5) All planting areas shall have a finish grade conforming to approved plans and specifications after full settlement has occurred.
- (6) Eliminate all erosion scars.

B. Ground Cover

- (1) After preparation of the soil in accordance with the section on "Grading and Soil Preparation," the areas to be planted with ground covers will be given an additional pre-fertilization as specified in the soils report, evenly broadcast over the area.
- (2) Ground cover plants shall be grown in flats or peat pots. Flat grown plants (rooted cuttings) shall remain in those flats until transplanting. The flat's soil shall contain sufficient moisture so that it will not fall apart when lifting the plants. If plants from peat pots are used, the pots shall be protected at all times prior to planting to prevent unnecessary drying of the root ball.

- (3) Ground covers shall be planted in straight rows and evenly spaced, unless otherwise noted, and at intervals called out in the drawings. Triangular spacings shall be used unless otherwise noted on the plan.
- (4) To avoid drying out, plantings shall be immediately sprinkled after planting until the entire area is soaked to the full depth of each hole. Evenly spread ammoniated redwood shavings or other approved mulching material in the area planted with ground cover to a depth of 1/2".

C. Planting of Trees, Shrubs and Vines

- (1) Excavation for Planting - Excavation for planting shall include the stripping and stacking of all acceptable topsoil encountered within the areas to be excavated for trenches, tree holes, plant pits, and planting beds.
 - (a) All excavated holes shall have vertical sides with roughened surfaces and shall be of a size that is at least two times the width and one and one half times the depth of the original plant container. The holes shall be, in all cases, large enough to permit handling and planting without injury or breakage to the roots or root ball. Refer to Standard Planting Details #206-209.
 - (b) Excavated holes for slope plantings shall be dug two times original plant container depth, providing a permanent 6 inch berm around plant pit.
 - (c) Excess soil generated from the planting holes may be distributed on the site and amended as specified in general soil preparation.
- (2) Planting
 - (a) No more plants shall be distributed in the planting area on any day than can be planted and watered on that day.
 - (b) Containers shall be cut and plants shall be removed in such a manner that the ball of earth surrounding the roots is not broken, and they shall be planted and watered as herein specified immediately after the removal from the containers. Containers shall not be cut prior to placing the plants in the planting area.

- (c) Acceptable topsoil which was salvaged during the digging of planting holes may be used for backfill. Backfill mix for all container plants shall follow the recommendation as detailed in the soils report.
- (d) Backfill shall be placed at the bottom of each hole and thoroughly compacted to a height that when a plant is placed in the hole its root crown is lightly above the established final grade. Any plants which settle deeper than specified above shall be raised back to the correct level. After the plant has been placed, additional amended backfill shall be added to the hole to cover approximately one-half the height of the root ball. At this stage, water shall be added to the top of the partly filled hole to thoroughly saturate the root ball and adjacent soil.

After the water has completely drained, the remainder of the hole shall then be backfilled with the amended material.

After backfilling, an earthen basin shall be constructed around each plant. Each basin shall be of a depth sufficient to hold at least six inches of water. Basins shall be the same size as the container size of each individual plant. The basins shall be constructed of amended backfill material.

Immediately after planting, apply water to each tree and shrub by means of a hose. Apply water in a moderate stream in the planting hole until the material around the roots is completely saturated from the bottom of the hole to the top of the ground.

Apply water in sufficient quantities and as often as seasonal conditions require to keep the planted areas moist at all times, well below the root system of grass and plants. Generally, water once each day for 7 days in cool seasons, and for 14 days in hot weather. Berms around shrubs and trees on slopes shall be permanently maintained with periodic inspection to prohibit siltation of material around plant crown. In turf areas, berms shall be maintained for 30 days following tree planting, typically through the weed abatement program.

- (e) Vine Planting - Vines shall have wood stake support removed, without damage to plant and the vine trained upon the adjacent posts and walls as directed by the plan, or Landscape Architect. Vines shall be held to posts and overheads by plastic green ribbon - "heavy duty" and plastic adhesive vine tabs, no nails - as directed by the City Landscape Architect.
- (f) Pruning - Pruning shall be limited to the minimum necessary to remove injured twigs and branches, and to compensate for loss of roots during transplanting, but never to exceed one-third of the branching structure. Upon approval of the City Landscape Architect, pruning may be done before delivery of plants, but not before plants have been inspected and approved. Cuts over three-quarters of an inch in diameter shall be painted with an approved tree wound paint.
- (g) Where street trees occur within treewells or are adjacent to a substantial amount of pavement, a sub-surface planter box ("Deep-Root" or approved equal) shall be used. Box shall be installed per Standard Details #210, 212.
- (h) Location for street trees adjacent to any light standards or utility equipment shall be adjusted to maintain suitable clearance, as approved by the City Landscape Architect.

D. Lawn

Lawn will be planted by hand seeding, hydroseeding, and/or sodding as indicated on the plans.

(1) After preparation of soil in accordance with the section on "Grading and Soil Preparation", the areas to be planted to lawn shall be rolled, raked, and floated to finish grade by any acceptable method with the finish grade being smooth and even, free of rocks and clods and reasonably well firmed. Prior to planting, the surface of the area shall be sufficiently loose and friable to receive the seeds, or sod.

(2) Pre-fertilization - Just prior to the planting of turf, evenly broadcast appropriate fertilizer as specified in the approved soils report.

(3) Method

(a) Seed - A satisfactory method of sowing shall be employed, using an approved mechanical power drill seeder, mechanical hand seeder, or other approved equipment. The rate of application of seed will be specified on the plans and in the specifications.

The seed shall be covered by means of a wire drag, spiked toothed harrow cultipacker or other approved device. Seeded areas shall immediately be compacted by means of a cultipacker, roller or other approved equipment weighing 60 to 90 pounds per linear foot of roller. Final rolling shall be at right angles to slopes to prevent erosion wherever possible.

(b) Sodding - Soil preparation, finish grading and fertilization shall be as specified for seeded lawns, except that the sub-soil finish grade shall be two inches below final grade to allow for the thickness of sod.

Lay sod in one direction only, with close fitted butt joints. The ends of each strip shall be staggered to eliminate continuous joining. Staple sod on steep slopes with metal staples typical for those used on erosion control matting, if necessary.

- (4) Watering - Immediately following planting or top dressing, if applied, apply a light, fine mist spray to anchor the seed, and/or dressing to the soil, forming a protective crust to prevent wind erosion and drying of the seed. The lawn areas shall be kept moist until fully germinated.

Fully germinated lawn areas shall be allowed to dry sufficiently to permit rolling with approximately two hundred to three hundred pound water weighted roller to satisfactorily compact the soil around the grass roots and to provide a firm, smooth mowing surface.

E. Hydroseeding Installation/Weed Abatement Program

- (1) Weed Control - Upon the completion of the irrigation system and after all existing weeds and growth have been removed from the planting area, apply 200 pounds of a commercial fertilizer 21-0-0 per acre, as per manufacturer's instructions.

Water all areas four (4) times daily for twenty-one (21) consecutive days and until weed seeds have germinated. Cease watering for three (3) days. Spray the non-selective herbicide "Round-up," to eradicate the germinated weeds. Translocation or approved equal period should be 7-10 days.

Allow herbicide to kill all weeds. Rake or hoe off all dead weeds to a depth of 1/4 inch below the surface of the soil.

If perennial weeds or grasses still exist, rewater four (4) times daily for fourteen (14) consecutive days, until the new growth appears. Reapply a non-selective herbicide. Remove weeds after herbicide has had sufficient time to kill.

- (2) Equipment - Hydraulic equipment used for the application of the fertilizer, seed and slurry of prepared wood pulp shall be of the "Super Hydroseeder" type as approved by the Landscape Architect. All seed will be delivered to site in sealed bags with guaranteed analysis.
- (3) Preparation - The slurry preparation shall take place at the site of work and shall begin by adding water to the tank when the engine is at half throttle. When the water level has reached the height of the agitator shaft, good re-circulation shall be established and the fertilizer shall then

be added to the mixture when the tank is at least one-third filled with water.

The engine throttle shall be opened to full speed when the tank is half filled with water. All the wood pulp mulch shall be added by the time the tank is two-thirds to three-quarters full. At this time the seed shall be added. Spraying shall commence immediately when the tank is full.

- (4) Application - The operator shall spray the planting areas with a uniform, visible coat by using the green color of the wood pulp as a guide. The slurry shall be applied in a sweeping motion, in an arched stream so as to fall like rain allowing the wood fibers to build on each other until a good coat is achieved and the material is spread at the required rate per acre.
- (5) Time Limit - All slurry mixture which has not been applied to the slopes within four hours after mixing will be rejected and removed from the project at the Contractor's expense.
- (6) Protection - Special care should be exercised by the Contractor in preventing any of the slurry to be sprayed inside any reservoir basin or onto drainage ditches and channels which may impede the free flow of rain or irrigation water. Any slurry spilled into restricted areas shall be cleaned up at the Contractor's expense to the satisfaction of the owner or City.

All areas designated for hydroseeding shall be thoroughly watered prior to the hydroseeding. The Contractor shall note any discrepancy for complete water coverage and correct. The Contractor shall at this time note wind and weather conditions and submit a watering program to the Landscape Architect for approval prior to hydroseeding.

- (7) Reseeding - All bare spots shall be reseeded by the Contractor within 10 days. The Contractor will be responsible for all reseeded areas for as long after seeding as necessary until an acceptable stand of hydroseeded material is realized and approved by the City.
- (8) Watering
 - (a) A balanced full-coverage watering program shall be maintained to ensure proper germination and until the acceptance of work.

- (b) Plants which cannot be watered efficiently with the existing water system shall be watered by means of a hose.
- (9) Fertilization (turf) - Apply recommended fertilization program 45 days after the first mowing. Continue every 190-120 days.

F. Erosion Control

Erosion control installation will be required in locations specifically delineated on the drawings or as necessary due to field conditions.

- (1) Surface of the slopes shall be uniformly graded and even with all debris and rocks raked out. The soil shall be sufficiently moist to permit the firm laying of erosion control matting and to prevent sloughing of topsoil.
- (2) The erosion control matting shall be laid with the direction of flow of surface drainage, and in accordance with the manufacturer's directions. The matting shall be cut to provide a visually pleasing slope.
- (3) The matting shall be stapled in place and firmly embedded by means of tamping or rolling, as approved by the City Landscape Architect, to insure that the matting is in contact with the soil and that no erosion can take place under the matting.
- (4) Planting of turf, ground covers, shrubs and/or vines may be required in areas protected by erosion control matting as specified in the plans or as become necessary.

G. Natural Planted Areas

- (1) Any planting areas designated as natural planting that are cleared off during any phase of development must be re-established with an approved planting prior to acceptance of the tract.
- (2) Refer to City zoning and subdivision ordinance.
- (3) Natural vegetation areas are subject to review and approval by the Fire Marshall and City Landscape Architect. Appropriate fuel management programs shall be addressed as a part of the contract documents for execution during site development. Budgeting for on-going fuel management programs should also be addressed as a part of the maintenance programs.

CITY OF OCEANSIDE
GUIDELINES & SPECIFICATIONS FOR
LANDSCAPE DEVELOPMENT

January 1982
(Revised August 1984)

SECTION III
MAINTENANCE AND INSPECTION

SECTION III

MAINTENANCE AND INSPECTION

OBJECTIVES

The objective of the Landscape Maintenance Guidelines is to present the landscape design concepts, guidelines and regulations of the City of Oceanside as well as to outline maintenance procedures and desired results for the maintenance team.

The landscape goal for the City is to visually unify the various land uses and to maintain a standard of quality for community appearance in order to protect and enhance real estate value. Plantings accentuate views of adjacent properties as well as distant views.

The goal for the maintenance of the landscape areas in the City are to perpetuate the landscape goal by enhancing all vegetation through proper care. Moderate visibility areas shall have a moderately groomed appearance. High visibility areas, which include medians and slope plantings adjacent to streets, shall have a manicured appearance. In these areas maintenance shall maximize safety of users with tree pruning practices and trimming of groundcovers away from walkways and other hardscape elements.

The City has attempted to guide landscape development planning to insure plant material has been selected for low water requirements due to the possibility of water shortages in the future. In the event of a water shortage, a gradual transition from normal water application to a reduced water application shall take place over a 3 to 4 month period. Existing high water demanding plantings in high visibility areas may be replaced to include lower water requirement plantings as directed by the City Landscape Architect.

1. PURPOSE

The general requirements are for publicly managed landscape improvement areas within the City of Oceanside. They outline general qualifications and procedures for the Contractor.

2. EMERGENCY NUMBERS

The Contractor shall provide and maintain a current list of emergency telephone numbers for 24 hour emergency response. The Contractor shall initiate remedial action within 2 hours from the time of notification.

3. PROTECTION OF PROPERTY DURING INCLEMENT WEATHER

During periods of storms, the Contractor will provide supervisory inspections of the project during regular assigned hours to prevent or minimize possible damage from inclement weather. The Contractor shall report any storm damage to the Owner's representative. If remedial work is requested beyond the scope of this contract, it shall be paid for as extra work.

4. WORK FORCE

The Contractor shall be responsible for having adequate manpower for general maintenance and any emergency situations as specified in this manual.

5. FAILURE TO RESPOND TO AN EMERGENCY OR AS REQUESTED

In the event the Contractor does not respond to an emergency or special request within 4 hours or as directed, the City may consider reduction of the next invoiced amount by costs associated with sending City forces to respond in lieu of the Contractor.

6. PROTECTION OF EXISTING FACILITIES AND STRUCTURES

The Contractor shall exercise due care in protecting from damage all existing facilities, structures, and utilities both above surface and underground on the City/Owner's property. Any damage to City/Owner's property deemed to be caused by the Contractor's neglect shall be corrected or paid for by the Contractor at no cost to the City/Owner. If the City/Owner requests or directs the Contractor to perform work in a given area, it will be the City/Owner's responsibility to verify and locate any underground systems, i.e., utility lines. This does not release the Contractor of the responsibility for taking reasonable precautions when working in these areas. Any damage or problems shall be reported immediately to the City/Owner's representative.

7. SOIL ANALYSIS AND PLANT TESTING

- A. The Contractor may be directed to take samples of soil or plant tissue for testing purposes. These tests shall be used to determine specific causes of plant failure, fertility levels, etc. If these tests are requested, the laboratory costs will be paid for by the Owner. The labor cost, as a result of taking the test, will be borne by the Contractor.
- B. Soil tests shall be done annually as directed by the City/Owner. Soil testing shall be done by an approved Agronomic testing firm.

8. MATERIALS

- A. All materials used shall conform to the contract specifications. The contract specifications shall be available from the City/Owner. The Contractor shall submit product descriptions of any alternate products/equipment being used which do not conform to the project specifications. This submittal must be approved by the City prior to installation.
- B. All materials specified shall be delivered on the site in original unopened containers with the name of the product, manufacturer, chemical date of analysis, plainly marked on the containers.
- C. The Contractor shall submit a monthly record of all herbicides, insecticides and disease control chemicals used, to the County Agricultural Commissioner's Office, as required by law.

9. PROJECT INSPECTIONS

Upon request the Contractor or his representative will walk the project with the City/Owner's representative for the purpose of determining compliance with the specifications.

10. SERVICE SCHEDULE

A monthly schedule shall be given to the City/Owner's representative indicating the frequency of time and days of the week services are to be performed. This should be submitted at least two weeks in advance.

11. SUPERVISION

The Contractor shall give his personal supervision to the work or shall have a competent foreman on the job site at all times during progress of the work.

12. EXTRA WORK

- A. In the event the Contractor is requested and agrees to perform work above which is specified under this contract, the following procedure will govern such extra work.
 - 1. Work will be executed under a time and material basis or an agreed upon lump sum price, depending on the nature of the work.
 - 2. The City/Owner will issue a work request for such extra work to be performed.

3. Extra work will be initiated and cost itemized on monthly billing.
4. Contractor, at City/Owner's request, will submit an itemized invoice indicating materials, labor/manhours and cost of requested work.
5. Extra work may include, but not be limited to, the following:
 - a. Replacement of plant materials due to failures beyond the Contractor's control.
 - b. Replacement of worn or damaged sprinkler heads, valves, quick couplers, etc.
 - c. Additional treatment required for planting or soil as set forth specifically in this specification.
 - d. Soil or plant testing.
 - e. Remedial landscaping.
 - f. Repairs or replacements due to vandalism or Acts of God.
 - g. Replacement of Annual Color.
 - h. High tree pruning which is above the reach of an orchard ladder.
 - i. Emergency or special conditions.

13. INSURANCE AND LICENSING

Contractor will furnish the Owner with evidence of insurability and carry the following minimum coverage with a company approved by the Owner.

- A. Workmens Compensation - full coverage required.
Public Liability Insurance - \$1,000,000.00
Property Damage Insurance - \$1,000,000.00
- B. License: Contractor must by law have a C-27 State Landscape Contractor's license if more than \$100 of replacement landscaping is to be done. Contractor agrees to purchase all other licenses required by City, County, State or Federal Government.
- C. Taxes: Contractor agrees to pay all applicable taxes, including sales taxes on materials supplied.
- D. Bonds: Contractor shall provide performance and payment bonds when required by City/Owner.

SPECIFIC REQUIREMENTS

1. PURPOSE

The specific requirements outline maintenance procedures necessary to preserve the design goal of the City of Oceanside. Visual unity of the various land uses and a standard of quality for community appearance shall be achieved through proper care of all vegetation.

2. SCOPE OF WORK

- A. The Contractor shall furnish all labor, equipment, materials, tools, transportation, hauling, dumping, fertilizers, insecticides, chemicals, services, and special skills required to perform the landscape maintenance as set forth in these specifications. Maintenance shall include routine maintenance of plant material, irrigation system and walk areas.
- B. Maintenance of plant material shall include, but not be limited to, mowing, trimming, pruning, watering, fertilization, aeration, thatching, weed control, cultivation, pest control and clean-up. It is the intent to provide plant material maintenance methods to keep the site in a state of perpetual growth and repair. Irrigation maintenance shall include operation of system, adjustments and minor repairs.
- C. All walkways shall be kept clear of debris from the maintenance operations, erosion, run-off from storms, irrigation or wind blown debris. Clean-up of walks, driveways and parking areas shall be the Contractor's responsibility. Street gutters shall be included within the debris/siltation removal program.
- D. The Contractor shall provide a general clean-up operation at least once a week for the purpose of picking up trash or debris which may accumulate from the use of the area, wind blown debris, dropping of twigs or branches from trees.
- E. Contractor or Contractor's representative shall make at least six (6) general inspections of the project per year (one every two months) with the City.
- F. If work is to be conducted in Public Rights of Ways, the Contractor shall adhere to all safety rules using cones or other required safety equipment and obtain all necessary permits and approvals.
- G. All personnel on the project shall be well-trained, clean and neat at all times, and shall be conversant with these specifications.

- H. All work shall be performed in accordance with the best landscape maintenance practices and in keeping with the high aesthetic level of the facilities being maintained.
- I. Contractor shall be responsible for removing all weeds in cracks of sidewalks, curblines, and hardscape areas throughout the project.
- J. All landscape areas shall be patrolled weekly to check for vandalism damage, broken tree branches, rodents, insects, snails, pests and diseases, etc.
- K. Water Management: Water only as required to allow penetration into the soil and avoid excess run-off. Plant material has been selected for low water requirements due to the possibility of water shortages in the future. Once plant material is established, water only as needed to maintain healthy plant material.
- L. Clearance and Visibility: Avoid blocking the clear view of signs, illumination of light fixtures, the air flow out of vents and conflict with pedestrians and vehicles.
- M. Moderate visibility areas shall have a moderately groomed appearance. Trim groundcover away from hardscape elements. Shrubs and trees shall be pruned to retain their natural character, not a clipped character. Prune trees and shrubs to not allow breakage from wind and weather elements.
- N. High visibility areas, which include medians, monument signage areas and slope planting adjacent to streets, shall have a manicured appearance. Signage shall be enhanced but not obstructed by plant material. Trees shall be pruned as frequently as necessary to preserve visual access for pedestrians as well as automobile traffic. Trees and shrubs shall be pruned to maintain their natural form. Remove dead flowers weekly and replace annual color plants where required to maintain a continuous field of flowers.
- O. Safety of users shall be a prime goal of maintenance especially in regards to pruning of trees and trimming of groundcovers away from walkways and/or structures.

3. TREES AND SHRUB CARE

Maintain trees and shrubs in a healthy, growing condition by performing all necessary operations, including the following:

A. Watering

1. Plants shall not be watered until a moisture check has been made of representative points in the landscape. Use a probe or other tool to check the moisture in the root ball as well as the soil surrounding the root ball. The need for water shall dictate the frequency of watering by the automatic sprinkler system.
2. Maintain a large enough water basin around plants so that enough water can be applied to establish moisture through the major root zone. When hand-watering, use a water wand to break the water force. Use mulches to reduce evaporation and frequency of watering.

B. Pruning:

1. Trees:

- a. Prune trees annually to select and develop permanent scaffold branches that are smaller in diameter than the trunk or branch to which they are attached which have vertical spacing of from 18" to 48" and radial orientation so as not to overlay one another; to eliminate narrow V-shaped branch forks that lack strength; to reduce toppling and wind damage by thinning out crowns; to maintain growth within space limitations; to maintain a natural appearance; to balance crown with roots.
- b. Under no circumstances will stripping of lower branches ("raising up") of young trees be permitted. Lower branches shall be retained in a "tipped back" or pinched condition with as much foliage as possible to promote caliper trunk growth (tapered trunk). Lower branches can be cut flush with the trunk only after the tree is able to stand erect without staking or other support.
- c. Evergreen trees shall be thinned out and shaped when necessary to prevent wind and storm damage. The primary pruning of deciduous trees shall be done during the dormant season. Damaged trees or those that constitute health or safety hazards shall be pruned at any time of the year as required.
- d. All pruning cuts shall be made to alateral branches, or buds, or flush with the trunk. "Stubbing" will not be permitted.

- e. All tree pruning shall be done on an Orchard ladder. If trees are larger than able to be pruned in such a manner, the condition will be brought to the attention of the City who shall secure the services of an arborist.
- f. Remove no more than 50% of a plant's foliage during pruning operations.
- g. Lower branches on established street trees shall be pruned 8' from curb and 10' from gutter.

2. Shrubs:

- a. The objectives of shrub pruning are the same as for trees. Shrubs shall not be clipped into balled or boxed forms unless such is required by the design. Retain as much of the natural characteristics or branching as possible.
- b. All pruning cuts shall be made to lateral branches or buds or flush with the trunk. "Stubbing" will not be permitted.
- c. Pruning shall be accomplished by removing woody/stems from the inside of shrubs at least twice a year. Topping of shrubs shall be done only after interior selective branch pruning has been completed.
- d. After flowering, remove any spent blossoms or flower stalks where applicable.

C. Staking and Guying:

- 1. For Eucalyptus, remove stake after the first year or at the beginning of the growing season, whichever comes first.
- 2. For trees other than Eucalyptus, consider removal of the existing stakes and guys when the trees attain a trunk caliper of 4". If unstable at this time, replacement shall be decided by the City.
- 3. Stakes and guys are to be inspected at least twice per year to prevent girdling of trunks or branches, and to prevent rubbing that causes bark wounds.
- 4. All restaking shall be done with 2" diameter by 10' long lodge pole stakes treated with copper naphthanate and pointed at one end. Adjust length to fit tree. Tree supports shall be corded rubber straps; nail to sides of stake with 1" roofing nail.

D. Weed Control:

Keep basins and areas between plants free of weeds. All trees in groundcover areas shall have open soil maintained around the base of the trunk. This will reduce damage to tree trunks and roots by machinery and by excess water. Use recommended, legally approved herbicides, such as Round-up, whenever possible to control growth in this open area. Avoid frequent soil cultivation that destroys shallow roots and breaks the seal of pre-emergent herbicides. Use mulches to help prevent weed seed germination.

E. Insect and Disease Control:

Maintain a reasonable control with approved materials as recommended by a licensed Pest Control Advisor.

F. Fertilization:

1. Avoid applying fertilizer to the root ball and base of main stem; rather, spread evenly under plant to drip line. Rates will vary from about a cup of nitrate fertilizer (depending on nitrogen percentage) around a newly installed small plant to about one-half (1/2) lb. of actual nitrogen per inch of trunk diameter measured four feet from the ground for mature trees. Refer to recommendations of applicable soils reports.

G. Replacement of Plants:

Dead plants and those in a state of decline shall be brought to City's attention immediately. Replacement plants shall be of a size, condition and variety acceptable to City to be paid for by City/Owner unless due to negligence of Contractor.

4. GROUNDCOVER CARE

Foster attractiveness at all times by following these practices:

A. Weed Control:

Control weeds, preferably with pre-emergent herbicides, but also with selective systemic herbicides. Hoe weeds as little as possible, since this may result in plant damage.

B. Fertilization:

Apply four (4) lbs. of actual nitrogen per 1,000 sq. ft. per year in two to four applications during first year of a new planting or if groundcover is nitrogen starved. One application should be in early Spring when growth begins.

Reduce to three (3) lbs. actual N in following years or as needed to maintain vigorous growth and good color. Complete fertilizers are not desired unless soil test shows specific nutrient deficiencies based on soil tests.

- C. Operate irrigation system to maintain a uniform moist condition until the root structure develops to a depth of 12". Thereafter reduce watering schedule to produce a deep rooted groundcover with healthy growth.
- D. Remove trash weekly.
- E. A cleared circle, 12" diameter, should be maintained at base of trees to reduce competition for nutrients by groundcover.
- F. Edge groundcover to keep in bounds and trim top growth as necessary to achieve an overall even appearance. Every 2 years, mow Ivy, to four inches above ground level in order to renew growth and improve density and attractiveness.
- G. Control rodents, insects and diseases as necessary, using legally approved materials.
- H. Replace dead and missing plants after obtaining Owner's agreement to pay for replacement. Damages due to Contractor's negligence as determined by the City/Owner shall be made good without charge.

I. Slopes:

Check weekly for uniform coverage of groundcover for maximum erosion protection. Remove weeds as necessary to maintain an attractive appearance.

J. Growth Retardants:

Apply a growth retardant to minimize safety problems of trimming and edging in these high maintenance areas.

5. ANNUAL COLOR

- A. Planting areas requiring Annual Color shall be replanted twice a year with 4" pot material at 8" o.c.

- B. Provide water for color on a routine basis to maintain uniform soil moisture and assure maximum growth.
- C. Fertilize color every two weeks, using 1/4 oz. per gallon of 15-30-15 water soluble high phosphate commercial fertilizer or equal program.
- D. Remove dead or faded blossoms, stems and foliage weekly to encourage bloom and maintain a neat appearance.
- E. Cultivate and weed soil weekly to ensure proper drainage and porosity.
- F. Apply all insecticides and fungicides as required to control and prevent pest infestation.

6. LAWN CARE

Lawns shall be maintained in a healthy growing condition by furnishing necessary services, including the following:

A. Mowing and Edging:

- 1. Upright grasses such as Bluegrass and Ryegrass shall be mowed to minimum height of two inches in warm weather and one and one-half inches during the rainy season. Mowing shall be done at least every seven days during Spring and Fall seasons, and as needed at other seasons. Alternate mowing pattern to avoid rutting of lawn.
- 2. "Weed Eaters" or similar equipment shall not be used around trees or shrubs. Trimming around trees shall be done by hand or chemically until tree trunk is to a caliper that will not be damaged by mechanical trimming.
- 3. Edges shall be trimmed at least twice monthly or as needed for neat appearance and all clippings will be removed from site.
- 4. Allow lawn areas sufficient time to dry prior to mowing to minimize compaction and ruts, caused from excessively wet soil.
- 5. Care should be exercised in trimming around trees, light fixtures, and electrical boxes to avoid damaging these items.

B. Watering:

Lawns shall be watered at such frequency as weather conditions require, to replenish soil moisture below root zone. Watering shall always be done at night and early

in the morning so as to not interfere with public use of the facility. normally a total of one and one-half inches of water are needed weekly in hot weather, but not all at one time. Water run-off across pavements and into gutters shall be avoided. It is the Contractor's responsibility to apply water as necessary for healthy growth.

C. Fertilization:

Lawns shall be fertilized with a total of six (6) lbs. of actual nitrogen per 1,000 sq. ft. per year. The number of applications will be dependent on the type of nitrogen used.

D. Weed Control:

If needed, control broadleaf weeds with selective herbicides. In areas where crabgrass has infested the lawn, apply a selective post-emergent herbicide as soon as possible. Pre-emergent herbicides shall be applied prior to crabgrass germination.

E. Insect and Disease Control:

If necessary, apply with approved insecticides and fungicides when needed.

F. Renovating:

1. Removal of thatch by verticutting is done preferably in the Fall, but otherwise, in the Spring. At this time overseed if needed. Overseeding must precede pre-emergent herbicides by at least four to six weeks. normally, this means that lawns which have been invaded by Crabgrass should be renovated and overseeded in the Fall, and treated for Crabgrass control in the following late Winter.
2. Mechanically aerate lawn areas two times per year using a plug aerator with 1/2" tines in March and October.
3. Any areas that show excessive compaction from pedestrian traffic shall receive additional aeration as required to alleviate problem conditions.

G. Replacement:

1. Reseed or resod turf as required in medians, parkways, and greenbelts as directed by the City.

2. Replacement cost of lawn materials shall be paid for by the Owner unless damages are due to Contractor's negligence.

7. IRRIGATION SYSTEM

A. Operation:

1. Periodically (a minimum of once a month) Contractor shall check all systems for proper operation and coverage. Lateral lines shall be flushed out after removing the last sprinkler head or two at each end of the lateral. All heads are to be adjusted as necessary for unimpeded coverage.
2. Contractor shall adjust his watering schedule equal to the application rate each area is capable of receiving based on topography, soil type, plant material, season or weather climatic factors. Owner's representative shall be given a key to controller and instructions on how to turn off system in case of emergency.
3. In March, all valve boxes shall be checked for soil invasion, cleaned out and new gravel replaced as noted in original specifications.
4. All screens in backflow preventer strainers shall be checked and cleaned as necessary three (3) times per year.
5. Contractor shall utilize repeat cycle on controller to eliminate excessive run-off.
6. Contractor will be responsible for trimming and making necessary adjustments to riser height as growth rates indicate.
7. Contractor will be responsible for hand watering any areas not provided with an irrigation system to promote optimum growth.
8. All systems shall be personally observed during operation cycle at least once per month to verify effectiveness of sprinkler operation.
9. Contractor shall throttle down valves enough to prevent useless fogging; allowing droplets for effective watering.

10. Hours of scheduled operation will be programmed to minimize disease occurrence of plant material and reduce possible nuisance from sprinkler operation to pedestrians or vehicles. To prevent leaf burn of Hedera helix, do not operate the irrigation system during daylight hours.

B. Maintenance:

1. Any repairs made by the Contractor will be in accordance with the original details or as directed by Owner's representative.
2. Repairs to the irrigation system caused by conditions under which the Contractor does not have any direct control shall be paid for by the Owner as extra work. Repairs under this shall be vandalism, normal wear and tear, storm damage (Acts of God), or by others. It shall be the Contractor's responsibility to report such conditions immediately to the Owner's representative.
3. Contractor shall make minor repairs under this contract. Minor repair shall be defined as an occasional repair such as a broken riser, which can be repaired easily without the need of a specialist.
4. Malfunctions of any nature which are deemed to be the fault of materials or workmanship still covered under original installation guarantee shall be reported immediately to the Owner's representative.
5. Contractor shall furnish his own hoses, nozzles, sprays, and controller keys as required.
6. Any damages to system caused by Contractor's operations shall be repaired without charge. Repairs shall be made within one watering period.
7. It will not be the responsibility of the Contractor to pay for heads requiring replacement, but he will be responsible for the labor involved. Heads shall be of the exact type as previously installed. Substitution will be allowed only with prior approval of City.

C. Monthly Watering Schedule Guidelines:*

January	.5"/week
February	.5"/week
March	.6"/week
April	.75"/week
May	.75"/week
June	1.15"/week
July	1.5"/week
August	1.5"/week
September	1.15"/week
October	.75"/week
November	.5"/week
<u>December</u>	<u>.5"/week</u>
Total	45"/year

*Exact amount of moisture replacement shall be governed by current weather conditions.

8. INSPECTION

Normal progress inspection shall be requested from the Contractor/Owner at least 48 hours (2 working days) in advance of an anticipated inspection. An inspection will be made by the City on each of the steps listed below:

- (a) Pre-job conference
- (b) Rough grading
- (c) Trenching (Irrigation & Utilities)
- (d) Pressure test main-line
- (e) Tree-pit and staking
- (f) Irrigation coverage
- (g) Final grading
- (h) Shrub pit and plantings
- (i) Ground cover and turf planting
- (j) Start of maintenance period
- (k) Final inspection

CITY OF OCEANSIDE
GUIDELINES & SPECIFICATIONS FOR
LANDSCAPE DEVELOPMENT
1985
SECTION IV
APPENDIX

APPROVED STREET TREES
(REVISED 1997)

ACAD FNAME: ST1

Revision	By	Approved	Date	CITY OF OCEANSIDE	 CITY ENGINEER Date

APPROVED STREET TREES FOR THE CITY OF OCEANSIDE

- *AGONIS FLEXUOSA/Peppermint Tree
- *ALBIZIA JULIBRISSIN/Silk Tree
- ARCHONTOPHOENIX CUNNINGHAMIANA/King Palm
- ARECASTRUM ROMANZOFFIANUM/Queen Palm
- BAUHINIA PURPUREA/Purple Orchid Tree
- BAUHINIA VAR. CANDICANS/Orchid Tree
- *BRACHYCHITON ACERIFOLIUS/Flame Tree
- *BRACHYCHITON POPULNEUS/Bottle Tree
- CINNAMOMUM CAMPHORA/Champhor Tree
- *CUPANIOPSIS ANACARDIOIDES/Carrotwood
- ERIOBOTRYA DEFLEXA/Bronze Loquat
- *ERYTHRINA CORALLOIDES/Coral Tree
- EUCALYPTUS CITRIODORA/Lemon-Scented Gum
- EUCALYPTUS ERYTHROCORYS/Red-Cap Gum
- *EUCALYPTUS FICIFOLIA/Red-Flowering Gum
- *EUCALYPTUS LEUCOXYLON MACROCARPA 'ROSEA'/Large-Fruited Red-Flowering Gum
- EUCALYPTUS LEUCOXYLON/White Ironbark
- *EUCALYPTUS NICHOLII/Peppermint Gum
- EUCALYPTUS TORQUATA/Coral Gum
- *GINKO BILOBA/Maidenhair Tree (male only)

ACAD FNAME: ST2

Revision	By	Approved	Date	CITY OF OCEANSIDE	 CITY ENGINEER Date
				APPROVED STREET TREES	STANDARD DRAWING NO.

<u>Botanical Name/Common Name</u>	<u>Evergreen/ Deciduous</u>	<u>Minimum Spacing</u>
Agonis flexuosa/Peppermint Tree	E	15'
*Albizia julibrissin/Silk Tree	D	20'
Bauhinia purpurea/Orchid Tree	D	15'
Bauhinia var. candida/Orchid Tree	D	15'
Brachychiton acerifolium/Flame Tree	E	20'
Brachychiton populneum/Bottle Tree	E	20'
*Cinnamomum camphora/Camphor Tree	E	20'
Cupaniopsis anacardioides/Carrotwood Tree	E	20'
Eriobotrya deflexa/Bronze Loquat	E	15'
*Erythrina coralloides/Naxed Coral Tree	D	20'
Eucalyptus citriodora/Lemon-Scented Gum	E	10'
Eucalyptus erythrocorys/Red Cap Gum	E	25'
Eucalyptus ficifolia/Red Flowering Gum	E	25'
Eucalyptus leucoxylon Macrocarpa 'Rosea'/ Large-Fruited Red-Flowering Gum	E	20'
Eucalyptus nicholii/Peppermint Gum	E	25'
Eucalyptus torquata/Coral Gum	E	20'
Ginkgo biloba/Maindenhair Tree (male only)	D	25'
*Harpephyllum caffrum/Kaffir Plum	E	25'
*Jacaranda acutifolia/Jacaranda	D	25'
Koelreuteria henryi/Chinese Flame Tree	D	25'
Koelreuteria paniculata/Goldenrain Tree	D	25'
Ligustrum lucidum/Glossy Privet	E	20'
Liquidambar styraciflua/American Sweet Gum	D	20'
Liriodendron tulipifera/Tulip Tree	D	20'
Melaleuca linarifolia/Flaxleaf Paperbark	E	20'

<u>Botanical Name/Common Name</u>	<u>Evergreen/ Deciduous</u>	<u>Minimum Spacing</u>
Melaleuca quinquenervia/Cajeput Tree	E	20'
Pinus canariensis/Canary Island Pine	E	15'
*Pinus halepensis 'Brutia'/Calabrian Pine	E	20'
Pistacia chinensis/Chinese Pistache	D	25'
Pittosporum rhombifolium/Queenland Pitt.	E	20'
Pittosporum vividiflorum/Cape Pittosporum	E	20'
Platanus acerifolia 'Yarwood'/London Plan Tree	D	20'
Podocarpus gracilior/Fern Pine	E	20'
Podocarpus macrophyllus/Yew Pine	E	15'
Pyrus calleryana 'Aristocrat'/Aristocrat Pear	D	25'
Quercus ilex/Holly Oak	E	25'
Rhus lancea/African Sumac	E	15'
*Sequoia sempervirens/Coast Redwood	E	25'
*Tipuana tipu/Kate Cessions Tree	D	30'
Tristania conferta/Brisbane Box	E	20'

*Allowed in large parkways only

E = Evergreen

D = Deciduous

Minimum spacing for trees listed are general, and may vary depending on use (street tree, parkway, etc.)

*HARPEPHYLLUM CAFFURM/Kaffir Plum
 *JACARANDA ACUTIFOLIA/Jacaranda
 KOELREUTERIA HENRYI/Chinese Flame Tree
 KOELREUTERIA PANICULATA/Goldenrain Tree
 LAURUS NOBILIS/Sweet Bay
 LEPTOSPERMUM PETERSONII/NCN
 LIGUSTRUM LUCIDUM/Glossy Privet
 *LIQUIDAMBER STYRACIFLUA/American Sweet Gum
 LIRIODENDRON TULIPIFERA/Tulip Tree
 *MAGNOLIA GRANDIFLORA/Southern Magnolia
 MAGNOLIA GRANDIFLORA 'LITTLE GEM'/NCN
 MAGNOLIA GRANDIFLORA 'RUSSET'/NCN
 MAGNOLIA GRANDIFLORA 'SAINT MARY'/NCN
 *MELALEUCA LINARIIFOLIA/Flaxleaf Paperbark
 *MELALEUCA QUINQUENERVIA/Cajeput Tree
 *PHOENIX CANARIENSIS/Canary Island Date Palm
 PHOENIX DACTYLIFERA/Date Palm
 PINUS CANARIENSIS/Canary Island Pine
 PISTACHIA CHINENSIS/Chinese Pistache 'Keith Davey' (male only)
 PITTOSPORUM RHOMBIFOLIUM/Queensland Pittosporum
 PITTOSPORUM VIRIDIFLORUM/Cape Pittosporum
 PODOCARPUS HENKELII/Long-Leafed Yellow-Wood
 PODOCARPUS GRACILIOR/Fern Pine

ACAD FNAME: ST3

Revision	By	Approved	Date	CITY OF OCEANSIDE	<i>Steve Weiss 11-11-97</i> CITY ENGINEER Date
				APPROVED STREET TREES	STANDARD DRAWING NO.

PODOCARPUS MACROPHYLLUS/Yew Pine

PRUNUS CERASIFERA/Purple-leaf Plum

PYRUS CALLERYANA 'ARISTOCRAT'/Aristocrat Pear

PYRUS CALLERYANA 'BRADFORD'/Bradford Pear

QUERCUS ILEX/Holly Oak

QUERCUS SUBER/Cork Oak

QUERCUS VIRGINIANA/SOUTHERN LIVE OAK

RHUS LANCEA/African Sumac

*SCHINUS MOLLE/ California Pepper

SPATHODEA CAMPANULATA/African Tulip Tree

TABEBUIA AVELLANEDAE/NCN

TABEBUIA CHRYSOTRICHIA/Golden Trumpet Tree

TIPUANA TIPU/Tipu Tree

TRISTANIA CONFERTA/Brisbane Box

WASHINGTONIA ROBUSTA/Mexican Fan Palm

* Denotes trees permitted in large parkways and medians only.
Includes parkways measuring 15 feet or wider, measured from curb
face inward or width of median measured from curb face to curb
face.

ACAD FNAME: ST4

Revision	By	Approved	Date	CITY OF OCEANSIDE	CITY ENGINEER
				APPROVED STREET TREES	Date
					STANDARD DRAWING NO.

SECTION IV

APPENDIX

CITY OF OCEANSIDE
GUIDELINES & SPECIFICATIONS FOR
LANDSCAPE DEVELOPMENT
APPROVED SLOPE PLANT MATERIALS

General Selection Guidelines

Slope planting design within publicly maintained areas shall conform to the following guidelines:

- (a) All trees shall be hand-planted. Fast growing types may be used for erosion control, but root-bound plants will not be accepted. Fast growing tree material shall be planted from 1 gallon and 5 gallon containers (maximum size). Use of hydroseeded tree materials shall receive the approval of the City.
- (b) Mass planting of informal shrubs, drought tolerant in nature and well adapted to slope conditions, shall be encouraged throughout the City. Use of California natives with ground covers with compatible water requirements is recommended.
- (c) Ground cover shall be hand-planted or hydroseeded. The use of native or introduced grasses and ground cover on slopes is encouraged. Tall growing annual material shall not be used.
- (d) Desirable overall appearance shall consist of massed shrubs (large and small scale), erosion control ground cover, and trees. Designer shall attempt to relieve the "planned" appearance of manufactured slopes through effective slope planting design.
- (e) Hydroseed mixes shall be designed such that component mixture presents no particular maintenance problems (excessive hand-weeding among newly germinated plants). The intent here is to keep seed mixes as simple as possible in order to achieve the proposed results.
- (f) Hand planted slope materials shall be selected with consideration for particular environmental/soil conditions as they occur:
 - 1. Fire retardance
 - 2. Difficult soil types (shale, sterile, etc.)
 - 3. Drought tolerance
 - 4. Aesthetic appearance to the public
 - 5. Slope gradient
 - 6. Economy of materials and construction
- (g) Major slope areas, privately owned but clearly within public view (adjacent to major public access), shall generally conform to the above guidelines.

APPROVED SLOPE PLANT MATERIALS

(1) Ground Cover (Including Herbaceous Types)

- **Achillea species/Yarrow
- ***Arctostaphylos species/Manzanita
 - Arctotheca calendula/Cape Weed
 - Artemisia caucasica/Silver Spreader
- **,**Baccharis pilularis "Twin Peaks"/Coyote Bush
 - Bouganvillea species/Bouganvillea
 - Carissa species/Natal Plum
- ***Ceanothus species/California Lilac
 - Cerastium tomentosum/Snow in Summer
 - Coprosma Kirkii/Dwarf Mirror Plant
 - Fragaria chiloensis/Wild Strawberry
 - Gazania species/Gazania
- *Hedera helix/Bahns Ivy
- *Hypericum species/St. Johnswort
- **Iceplant species (small leafed varieties)
 - Juniperus species/Juniper
- *Lantana species/Trailing Lantana
 - Limonium perezii/Sea Lavendar
- *Lonicera species/Honeysuckle
 - Lotus corniculatus/Birdsfoot Trefoil
 - Lotus scorpiarius/Deer Weed
 - Lysimachia nummularia/Moneywort
- **Myoporum parvifolium "Prostrata"/Myoporum
 - Pachysandra terminalis/Japanese Spurge
 - Pelargonium peltatum/Ivy Geranium

(1) Ground Cover (continued)

Plumbago capensis/Cape Plumbago

Potentilla verna/Cinquefoil

*,**Rosmarinus prostratus/Creeping Rosemary

**Santolina virens/Green Cotton Lavender

**Sedum species/Stone Crop

Trachelospermum jasminoides/Star Jasmine

Verbena peruviana/Verbena

**Vinca major/Periwinkle

*Vinca minor/Dwarf Running Myrtle

(2) Grasses

Alfalfa/Alfalfa

Barley/Barley

Blando Brome/Bromegrass

Trifolium species/Clover

Coronilia species/Vetch

Festuca species/Fescue

Lolium species/Ryegrass

Pennisetum ruppelii

Pennisetum ruppelii "Cupreatum"

(3) Seeded Native and Exotic Annual/Perennial Wildflowers, including, but not limited to, the following:

Coreopsis maritimus/Sea Dahlia

Dimorphotheca species/African Daisy

Encelia species/Daisy

Eriophyllum confertiflorum/Golden Yarrow

Eschscholtzia californica/California Poppy

Lobularia species/Alyssum

(3) Seeded Native and Exotic Annual/Perennial Wildflowers
(continued)

Lupinus species/Lupine .

Mimulus longiflorus var. Puniceus/Monkey Flower

Papaver rhoeas/Flanders Field Poppy

Penstemon spectabilis/Penstemon

Romneya coulteri/Matilija Poppy

Salvia species/Sage

Sisryinchium bellum/Blue Eyed Grass

Tropaeloum majus/Nasturtium

(4) Shrubs

Acacia baileyana/Bailey Acacia

Acacia cultriformis/Knife Acacia

Acacia cyclops/N.C.N.

Acacia ongerup/N.C.N.

Acacia podalyriaefolia/Pearl Acacia

Acacia pycnantha/Golden Wattle

Acacia saligna/Willow Acacia

Acacia verticillata/N.C.N.

****Atriplex species/Salt Bush**

Callistemon Citrinus/Lemon Bottlebrush

Callistemon linearis/Narrow Leafed Bottlebrush

Cassia artemisioides/Feathery Cassia

*****Ceanothus species/California Lilac**

****Cistus species/Rock Rose**

*****Comarostaphylis diversifolia/Summer Holly**

Contoneaster species/Contoneaster

*****Dendromecon species/Bush Poppy**

(4) Shrubs (continued)

Dodonaea viscosa "Purpurea"/Purple Hopseed Bush

Elaeagnus species/*Elaeagnus*

Escallonia species/*Escallonia*

****Fremontodendron mexicanum*/Southern Flannel Bush

Grevillea species/*Grevillea*

Hakea species/*Hakea*

*,****Heteromeles arbutifolia*/Toyon

Jasminum mesneyi/Primrose Jasmine

Juniperus species/*Juniper*

****Lavatera assurgentiflora*/California Tree Mallow

Leptospermum scoparium/New Zealand Tea Tree

Melaleuca species/*Melaleuca*

Myoporum laetum/*Myoporum*

Nerium species/*Oleander*

Photinia fraseri/Red Photinia

Pittosporum species/*Pittosporum*

Pyracantha species/*Firethorn*

Rhamnus alaternas/Italian Buckthorn

*,****Rhus integrifolia*/Lemonade Berry

*,****Rhus laurina*/Laurel Sumac

****Ribes viburnifolium*/Evergreen Currant

Tecomaria capensis/Cape Honeysuckle

Xylosma congestum/*Xylosma*

(5) Trees

**Albizia julibrissin*/Silk Tree

****Arbutus unedo*/Strawberry Tree

(5) Trees (Continued)

Casuarina species/She-Oak

Erythrina caffra/Kaffirboom Coral

Eucalyptus erythrocorys/Red-Cap Gum

Eucalyptus lehmanni/Bushy Yate

Eucalyptus leucoxylon/White Ronbark

Eucalyptus torquata/Coral Gum

***Lyonothamnus floribundus asplenifolius/Fernleaf Ironbark

Geijera parvifolia/Australian Willow

Metrosideros excelsus/New Zealand Christmas Tree

Parkinsonia aculeata/Palo Verde

Pinus canariensis/Canary Island Pine

Pinus eldarica/Mondell Pine

Pinus halepensis/Aleppo Pine

***Pinus torreyana/Torrey Pine

Pinus penia/Italian Stone Pine

***Prunus integrifolia/Catalina Cherry

Quercus agrifolia/Coast Live Oak

*Schinus molle/California Pepper

*Tolerant of Shale Soil

**Fire Retardant

***California Native



CITY OF OCEANSIDE

Street Tree Memorandum

Instructions for Plant Selection

- A. Tree Variety - Shall be determined by one of two methods:
1. For established City areas tree shall match or blend with existing street trees.
 2. For recently developed City areas homeowner shall select from City's approved street tree list.
- In either case, tree selection shall be approved by City Landscape Architect.
- B. Tree Size - Shall be minimum 15 gallon size and tree shall correspond to size normally found for species and variety of commercially available nursery stock.
- C. Tree Selection Criteria - Trees shall:
1. Have normal growth habit for species.
 2. Be sound, vigorous, and insect and disease free.
 3. Be free of sun scald, fresh abrasions in bark or other disfigurement.
 4. Have well developed branches and vigorous roots (not root bound).
 5. Not be bare root variety unless special approval is obtained from City Landscape Architect.

All trees are subject to approval by City Landscape Architect upon inspection for acceptable size, health and appearance.

Instructions for Planting

- A. Tree Pits shall:
1. Have vertical sides with roughened surfaces.
 2. Be at least 2 times the width and 1 1/4 times the depth of the original tree container.
- B. Removal from Container
1. Cut container and remove tree from container without breaking the root ball.
 2. Plant tree immediately after removal from container to avoid drying out of root ball.
- C. Backfill of Tree Pit
1. Backfill mix shall consist of:
 - a) 1 part by volume "Nitrohumus" (by Kellogg)
 - b) 1 part by volume excavated soil
 - c) 5 lbs. "Commercial Fertilizer" (16-6-8)
 - d) Agricultural gypsum and/or soil sulfur as recommended by local nursery.

2. Place backfill at bottom of pit.
3. Thoroughly compact so root crown of tree is slightly above final grade when tree is placed in pit.
4. After placing tree in pit, fill with backfill to cover 4 height of root ball.
5. Thoroughly saturate root ball with water.
6. Complete backfilling of tree pit.
7. Form 6-inch high earthen basin (same diameter as container with amended backfill material).
8. Apply water to tree immediately after planting.
9. Limit pruning to removal of injured branches. Paint cuts over 3/4" in diameter with approved tree wound paint.

Instructions for Care and Maintenance

- A. Period immediately following tree planting:
1. Tree root ball must be kept moist at all times for 7 days in cool season and 14 days in hot weather.
 2. In turf areas, maintain berm for 30 days.
- B. Major tree pruning shall:
1. Occur periodically for structural form and general health of the tree.
 2. Normally be accomplished by City forces.
- C. Tree Replacement shall:
1. Be by owner if death is attributed to neglect on homeowner's negligence.
 2. Be accomplished immediately following street tree removal.
 3. Be by City if lost by other than homeowner's negligence.

Date _____

Tract No. _____ Lot No. _____
Street Address _____
Homeowner's Name _____
Street Tree Variety _____
Approval of City Landscape Architect _____
Engineering Dept. 300 N. Hill St., Oceanside, CA 92054
Telephone: (619) 966-4710

"DECLARATION OF ENGINEER OF WORK"

I hereby declare that the design of the improvements as shown on these plans complies with professional engineering standards and practices. As the engineer in responsible charge of the design of these improvements, I assume full responsibility for such design. I understand and acknowledge that the plan check of these plans by the City of Oceanside is a review for the limited purpose of ensuring the plans comply with City procedures and other applicable policies and ordinances. The plan check is not a determination of the technical adequacy of the design of the improvements. Such plan check does not, therefore, relieve me of my responsibility for the design of these improvements.

As Engineer of Work, I agree to indemnify and save the City of Oceanside, its officers, agents, and employees harmless from any and all liability, claims, damages or injuries to any person or property which might arise from the negligent acts, errors or omissions of the Engineer of Work, my employees, agents or consultants.

Engineer

License No.

Date

Note:

Please require the inclusion of the above on all plans checked and submitted to the City for approval.

<u>DESCRIPTION</u>	<u>DETAIL #</u>
Pedestal Mounted Electrical Service	100
Enclosed Electrical Service	101
Automatic Controller (Wall Mount)	102
Automatic Controller (With Enclosure)	103
Booster Pump (Elevation) and Pad	104
Booster Pump (Plan View)	105
Booster Pump (Enclosure)	106
Electric Pull Box	107
Controller Wire Connectors (Pen-Tite)	108
Trenching	109
Atmospheric Vacuum Breaker	110
Pressure Vacuum Breaker	111
Backflow Preventer (2" and Smaller)	112
Backflow Preventer (2 1/2" and Larger)	113
Gate Valve	114
Pressure Relief Valve	115
Pressure Reducing Valve	116
Electric Control Valve	117
Quick Coupling Valve	118
Impact Sprinkler (On Grade)	119
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Pop-up Lawn Head	121
Shrubbery Spray (Below Grade)	122
Shrubbery Spray (On Grade)	123
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Stream-Rotor Shrub Head (Below Grade)	125
Stream-Rotor Shrub Head (On Grade)	126
12" Pop-up Spray/Rotor Head	127
Manual and Anti-siphon Valve	128

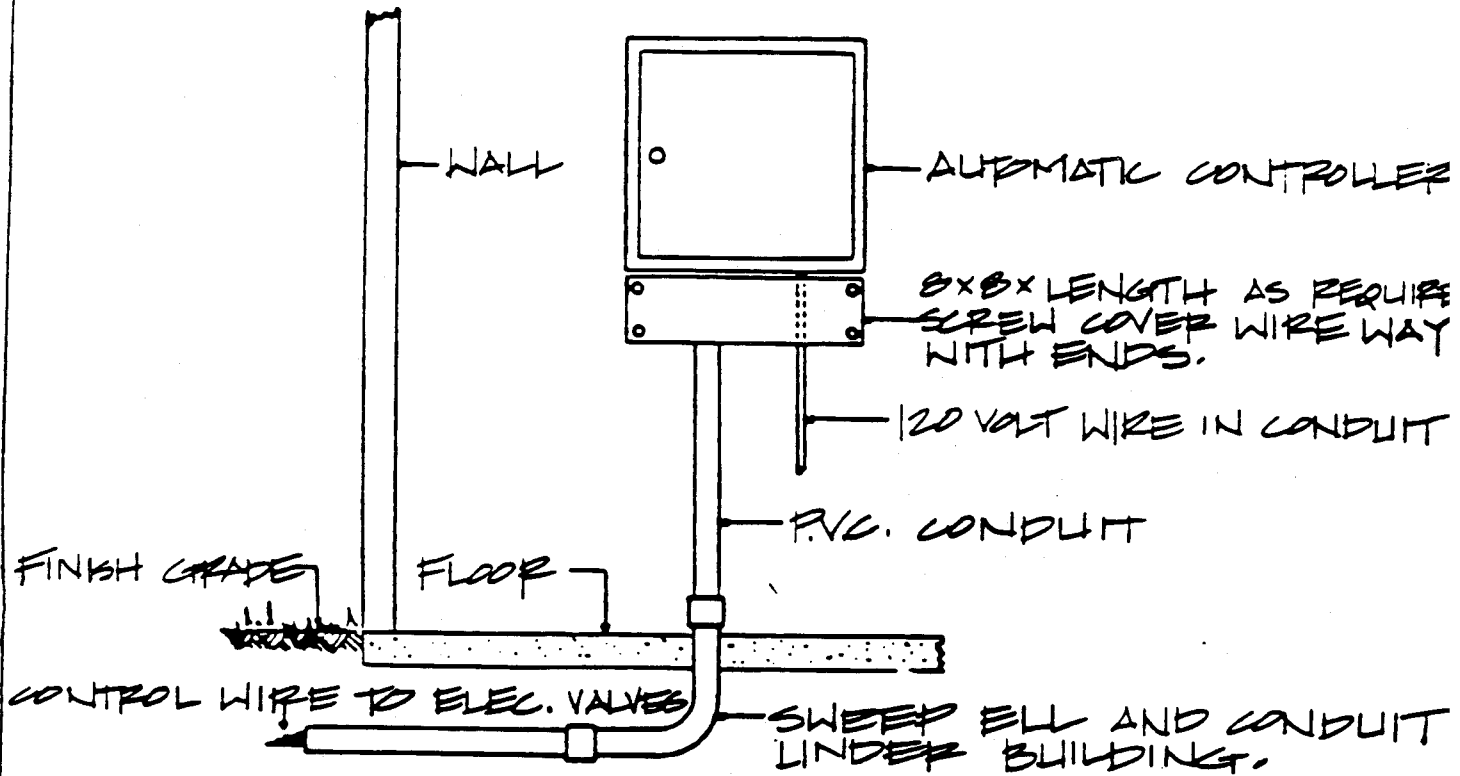
Manual Valve (Below Grade)	129
Hose Bibb	130
A.C./Concrete Water Valve	131
Multi-Emitter (Drip Irrig.)	132
Single Outlet Emitter (Drip Irrig.)	133
Filter and Pressure Reducer Assembly (Drip Irrig.)	134
Moisture Sensors	135
Moisture Sensor Installation	136
Moisture Sensor Wiring Diagram	137
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Point of Connection at Private Residence	139
 <u>Construction/Planting</u>	
A.C. Path	200
Equestrian	201
Concrete Mow Strip (Along Masonry Wall)	202
Mow Curb Adjacent to Pilaster	203
Concrete Mow Curb	204
Equestrian Fence (Concrete)	205
Shrub Planting	206
Shrub Planting (Slope)	207
Tree Planting	208
Tree Planting (Slope)	209
Tree Planting (Slope W/Barrier)	210
Tree Planting (Tree Well)	211
Tree Planting (Sloped Tree Well)	212
Tree Guying	213
Ground Cover Spacing	214
Street Tree Placement	215
Tree Placement at Intersections	216

APPENDIX

SECTION IV

STANDARD DETAIL DRAWINGS

NOTE: INSTALL ALL
WIRING PER LOCAL
CODE.



city of oceanside

standard
detail

AUTOMATIC CONTROLLER (WALL MOUNT)

revisions
4.3.84

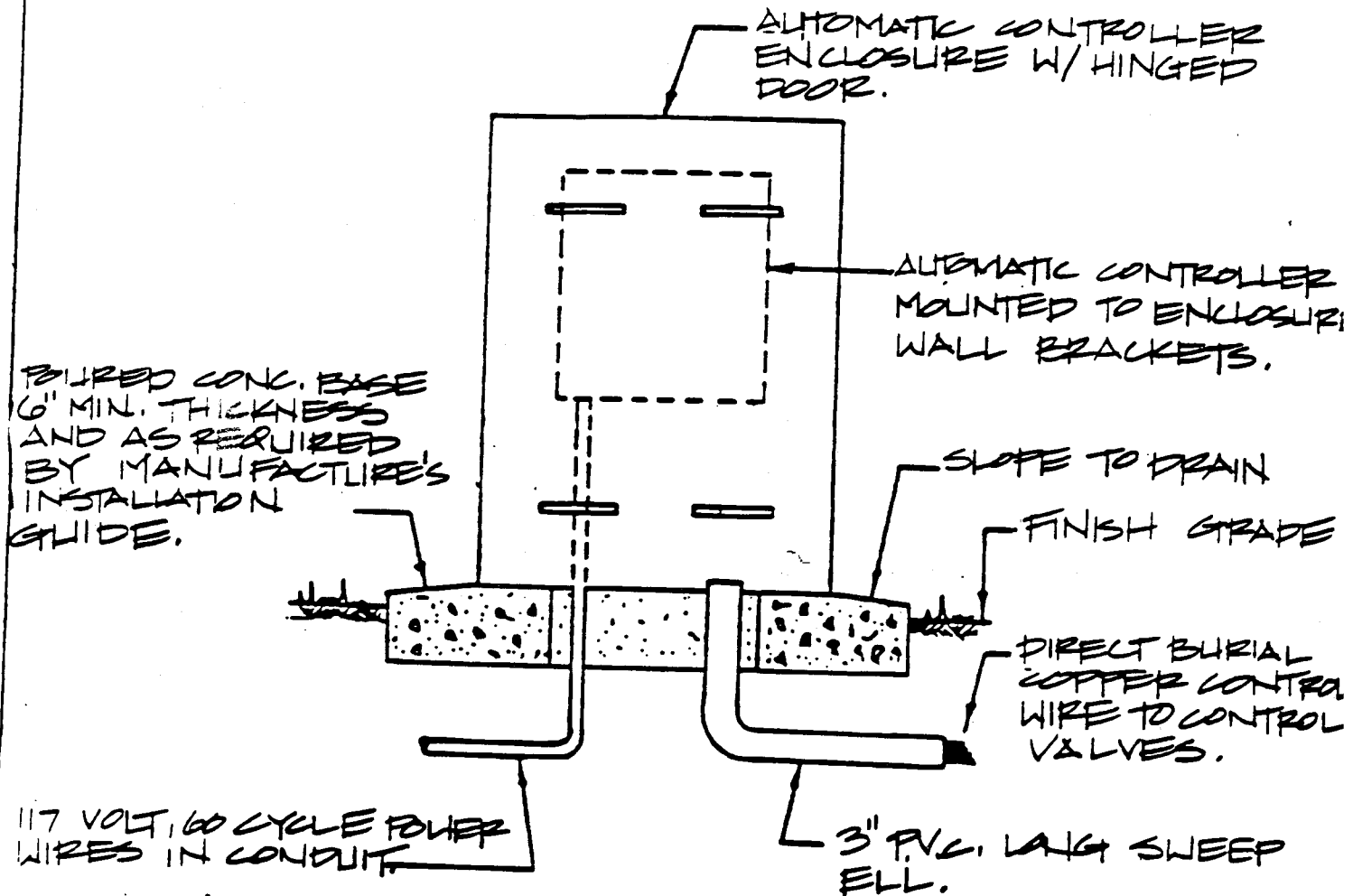
102

APPROVED BY:

CITY ENGINEER

DATE

INSTALL WITH LE MEUR OR
APPROVED EQUAL CONTROLLE
ENCLOSURE.



city of oceanside

AUTOMATIC CONTROLLER (W/ ENCLOSURE)

revisions

4-3-84

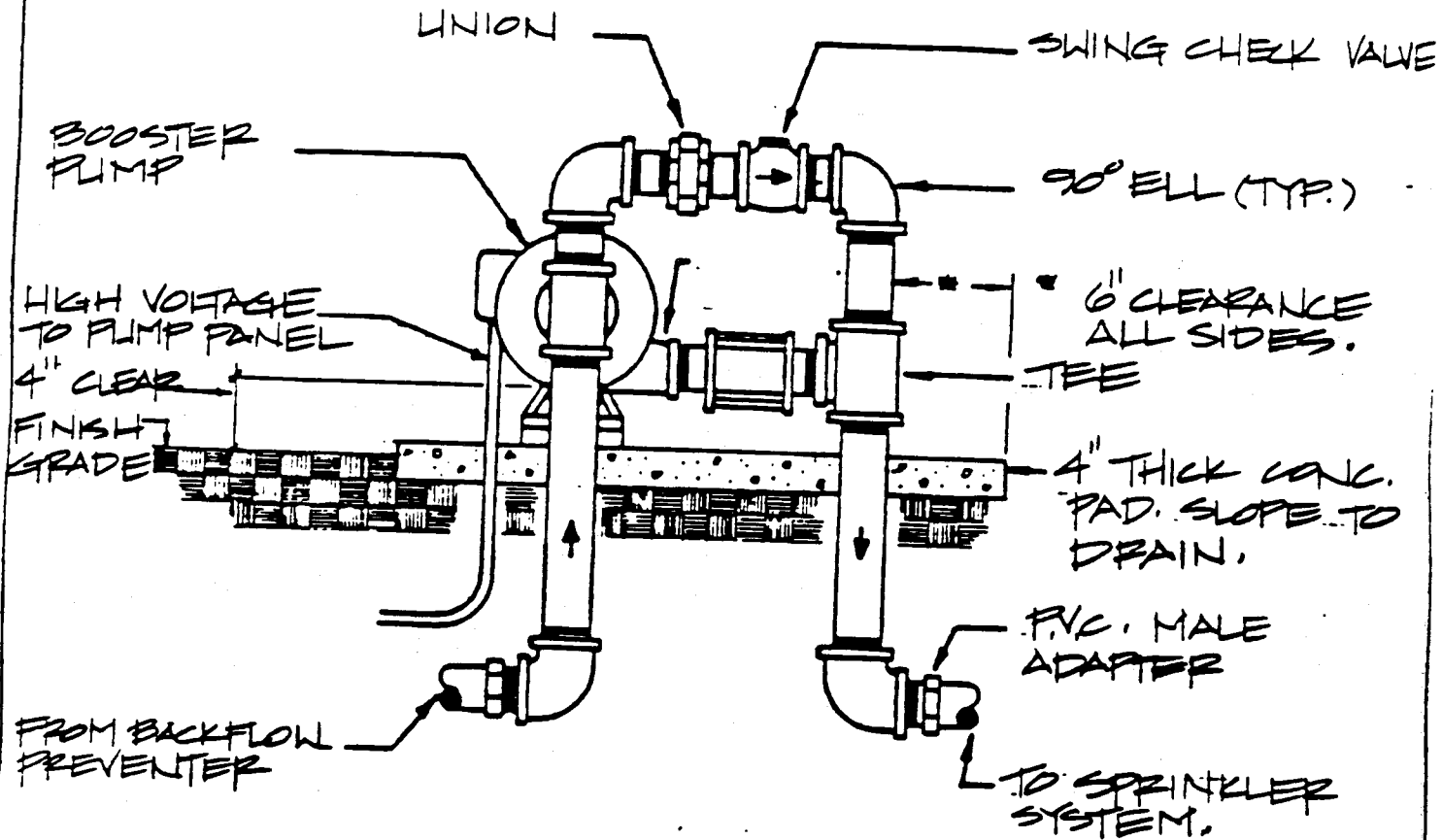
standard
detail

103

APPROVED BY:

CITY ENGINEER

DATE



NOTE:
 ALL FITTINGS SHALL
 BE BRASS.
 INSTALL W/ LE MUEL
 OR APPROVED EQUAL
 ENCLOSURE.

city of oceanside

BOOSTER PUMP (ELEVATION)

revisions

4.3.24

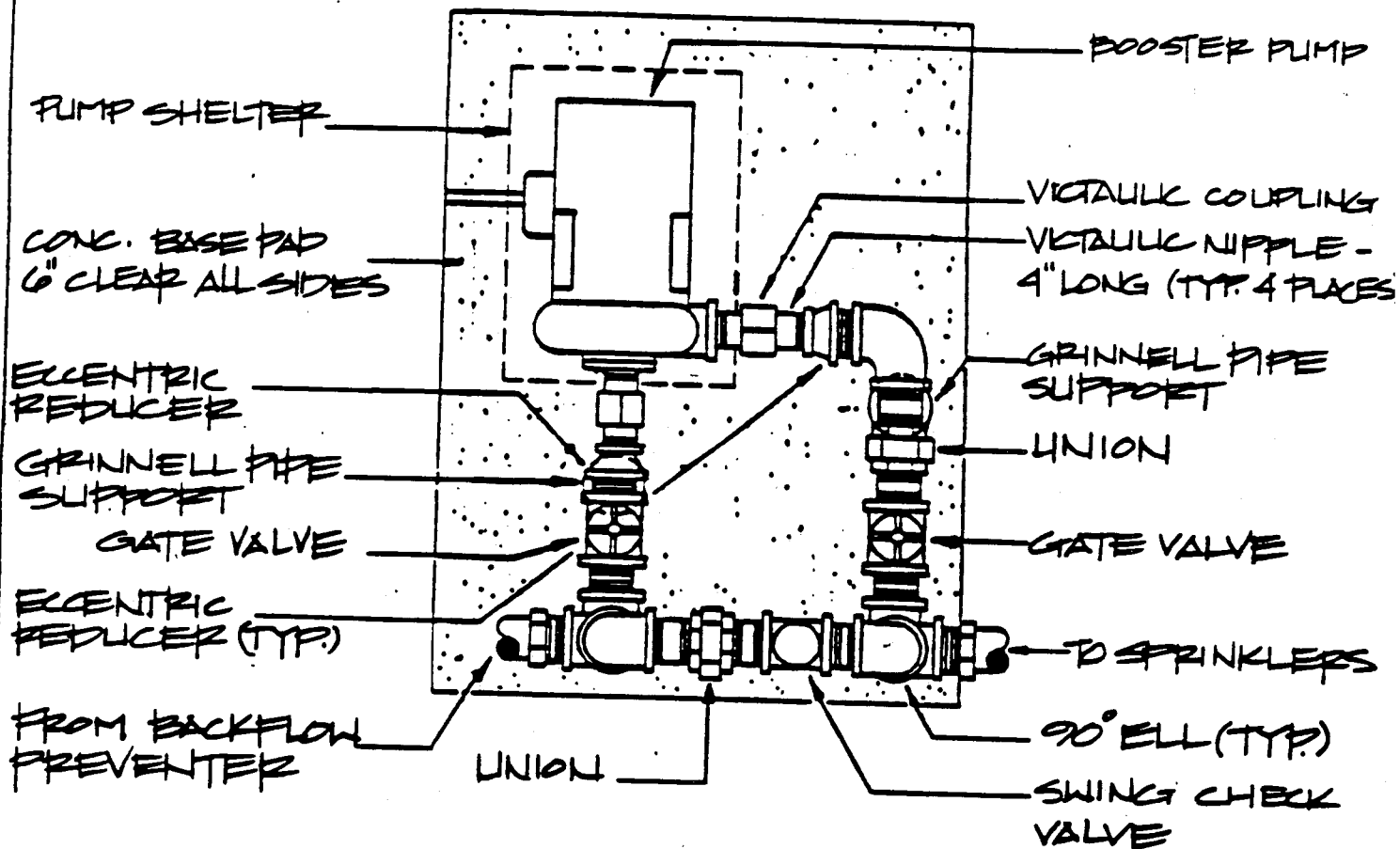
**standard
detail**

104

APPROVED BY:

CITY ENGINEER

DATE



NOTE:
 ALL FITTINGS SHALL BE
 BRASS. INSTALL WITH
 LE MUEL OR APPROVED
 EQUAL ENCLOSURE.

city of oceanside

standard
 detail

105

revisions

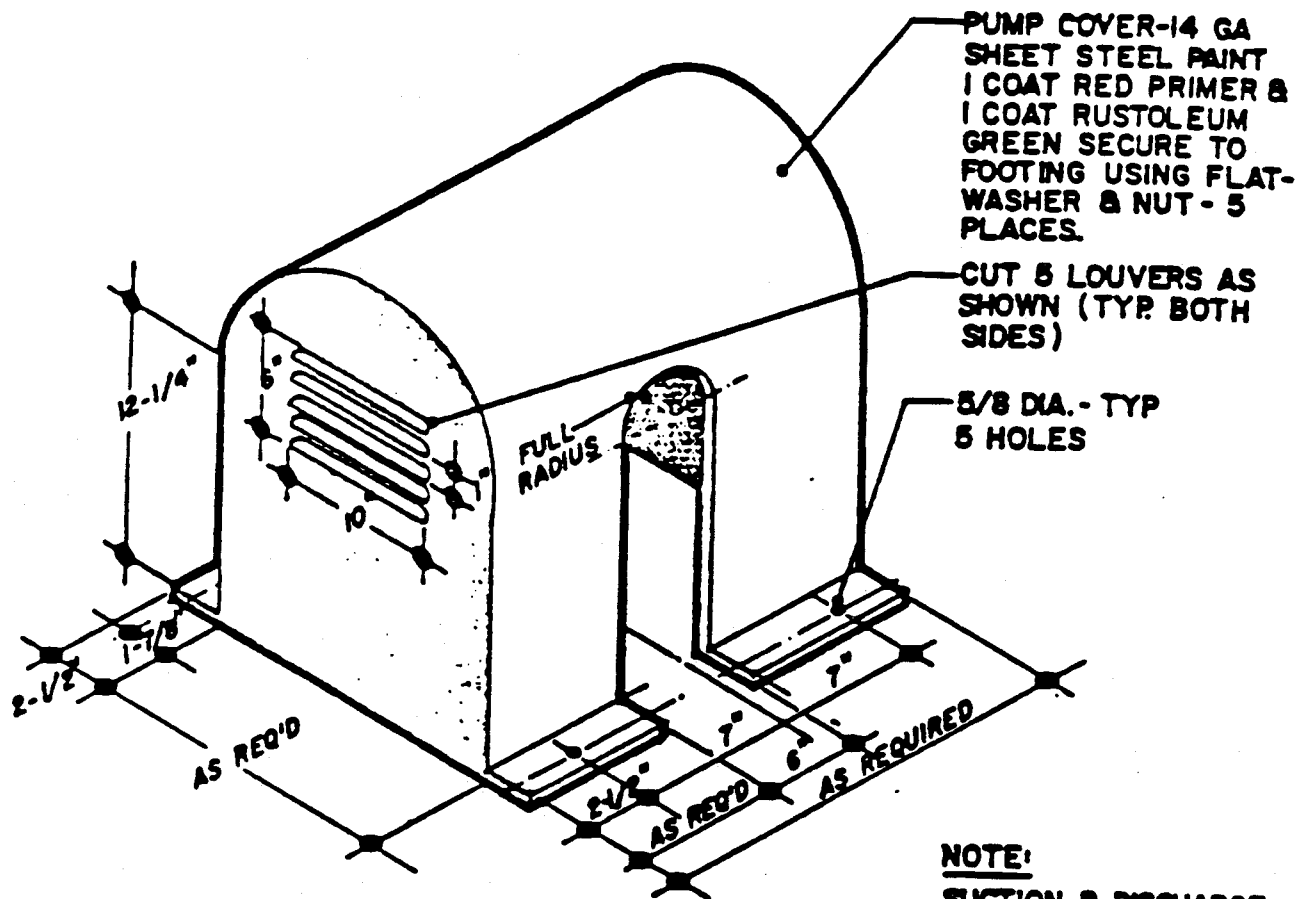
4.3.84

APPROVED BY:

CITY ENGINEER

DATE

27 June '84



NOTE:

SUCTION & DISCHARGE
LINES SHALL BE ONE
SIZE LARGER THAN
THAT OF PUMP OUT-
LETS.
ALL UNDER GROUND
PIPING SHALL BE WRA-
PED WITH AN APPROVED
TAPE.

city of oceanside

BOOSTER PUMP (ENCLOSURE)

revisions

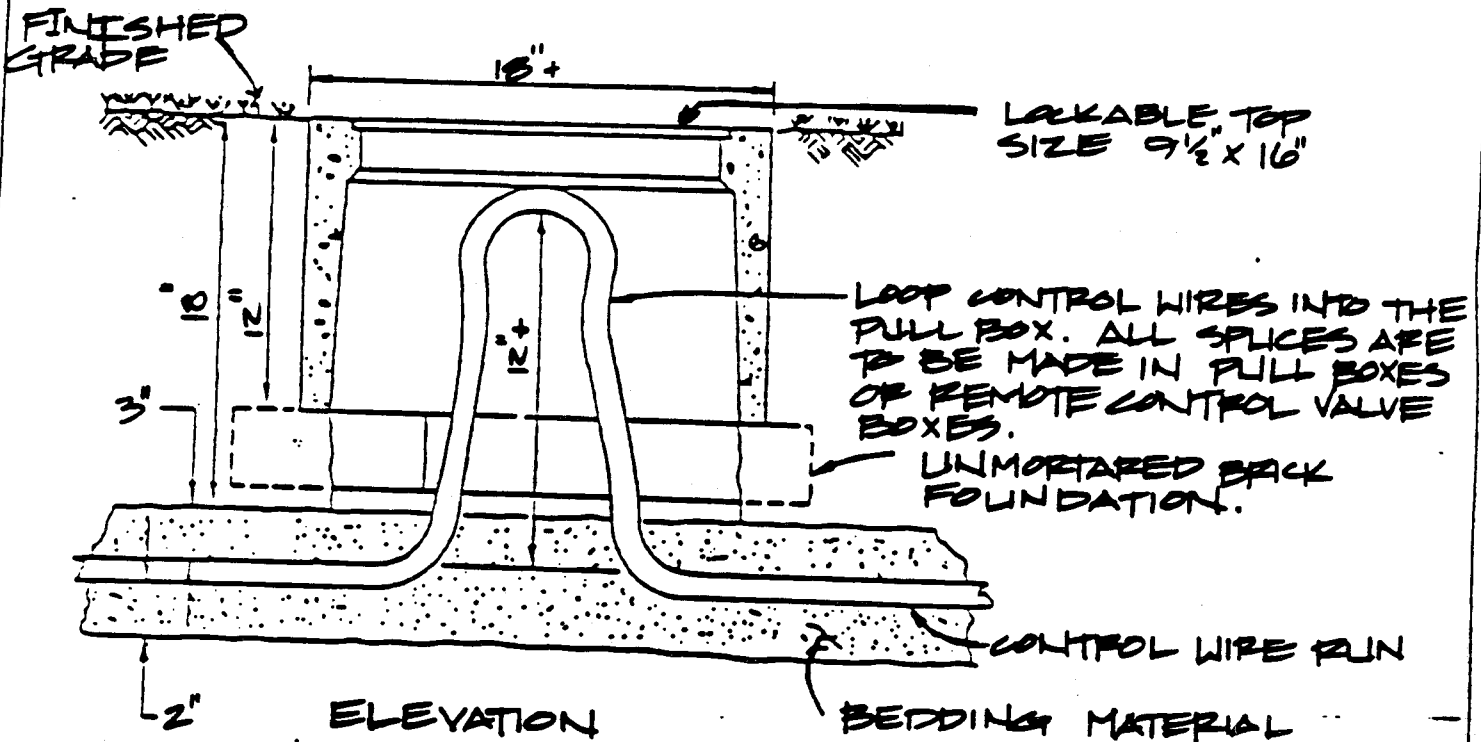
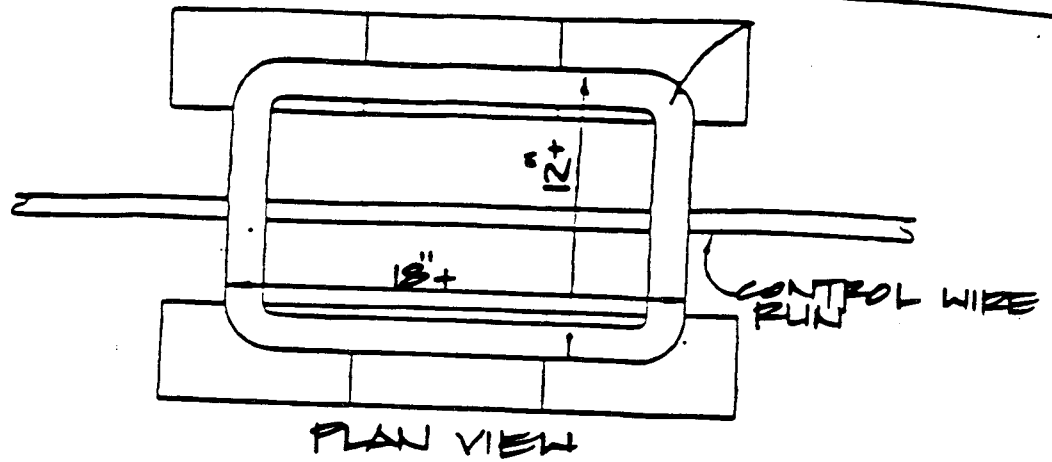
4-3-84

**standard
detail
106**

APPROVED BY:

CITY ENGINEER

DATE



1. INSTALL PULL BOXES AS SHOWN ON PLANS.
2. AT JUNCTIONS WHERE RUNS COMBINE, SPICE COMMON GROUND IN PULL BOX.
3. PULL BOX COVER SHALL BE PERMANENTLY MARKED "ELECTRIC".
4. CONDUCTORS FOR EACH CONTROLLER CIRC. SHALL BE HAR-NESSSED SEPARATELY AND AT SUFFICIENT INTERVALS TO MAINTAIN A DEFINITE BUNDLE.
5. ALL SPICES AND WIRE ENDS SHALL BE MADE WITH A PROPERLY SET MECHANICAL SPICE CONNECTOR ENTIRELY ENCLOSED IN SELF-CURING EPOXY RESIN AND SHALL BE COMPLETELY WATER-PROOF.

city of oceanside

ELEC. PULL BOX

revisions

4.3.84

standard
detail

107

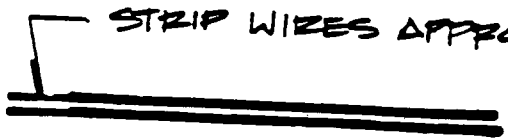
APPROVED BY:

CITY ENGINEER

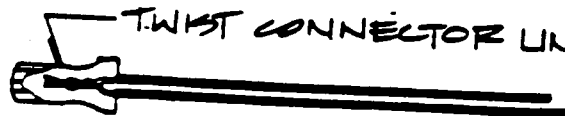
DATE

STEP:

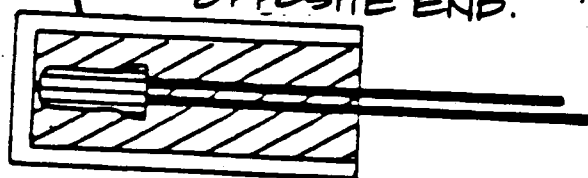
1 STRIP WIRES APPROX. 5/8" FROM END.



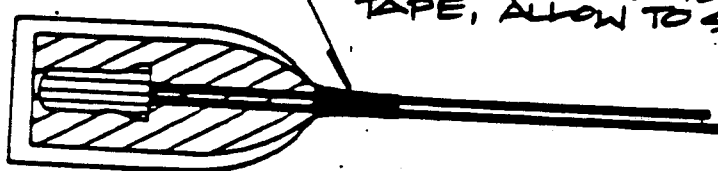
2 TWIST CONNECTOR UNTIL WIRE END REACHES BOTTOM.



3 MIX CONTENTS OF SEALING PACK, CUT 1/2" OFF OPPOSITE END. AND INSERT CONNECTOR TO



4 WRAP OPEN END OF SEALING PACK WITH TAPE, ALLOW TO SET UNTIL RESIN JELS.



city of oceanside

WIRE CONNECTOR

revisions

4.3.24

standard
detail

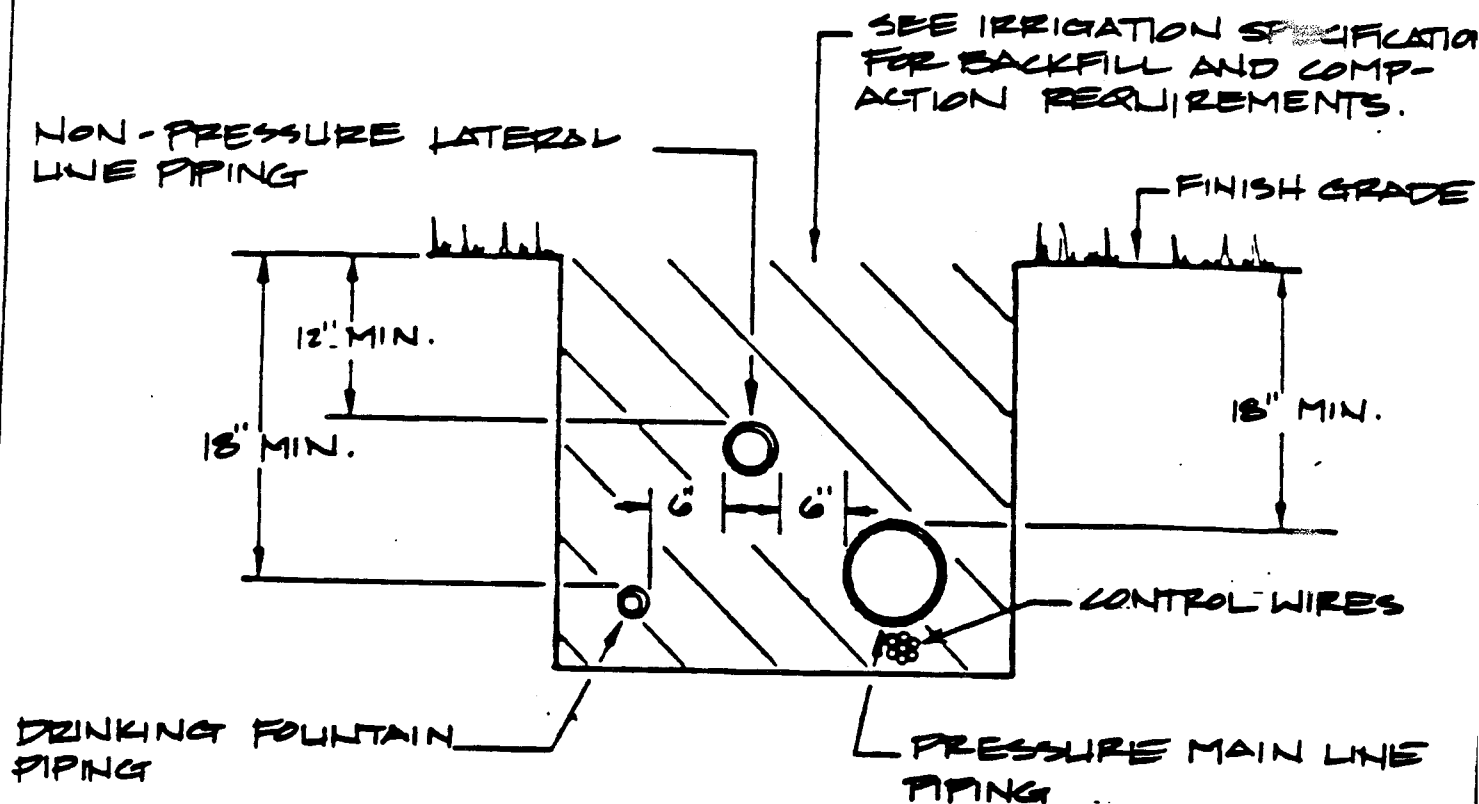
108

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CITY ENGINEER

DATE

Walter D. [Signature]



- PROVIDE 2" OF CLEAN BACKFILL UNDER ALL PIPING.
- NOTE: • NO OTHER TRADES (ELECT., LIGHTING) ALLOWED TO USE SAME TRENCH AS IRRIGATION PIPE.
- PROVIDE 24" COVER FOR DIRECT BURIAL CABLE
- PROVIDE P.V.C. SCH. 40 SLEEVES FOR ALL WIRING & PIPING UNDER PAVING
- NO STACKING (VERTICALLY) OF PIPES IN SAME TRENCH

city of oceanside

TRENCHING

revisions

4.3.84

standard detail

109

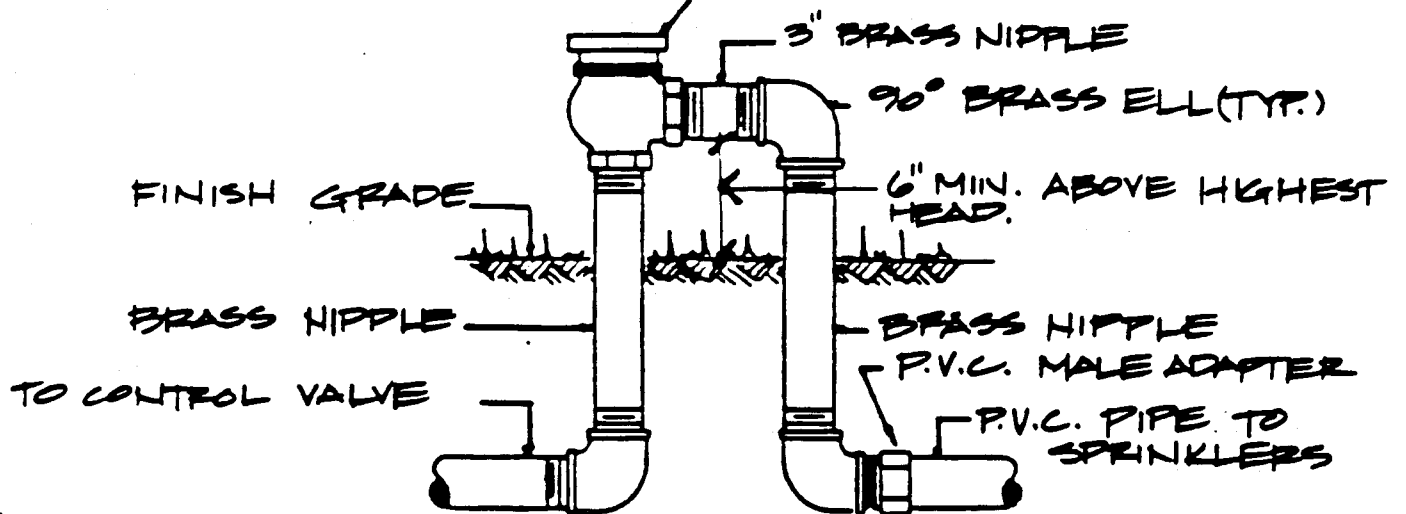
APPROVED BY:

CITY ENGINEER

DATE

NOTE - INSTALL PER LOCAL CODE.

ATMOSPHERIC VACUUM BREAKER



city of oceanside

standard
detail

ATMOSPHERIC VACUUM BREAKER

revisions

4.3.84

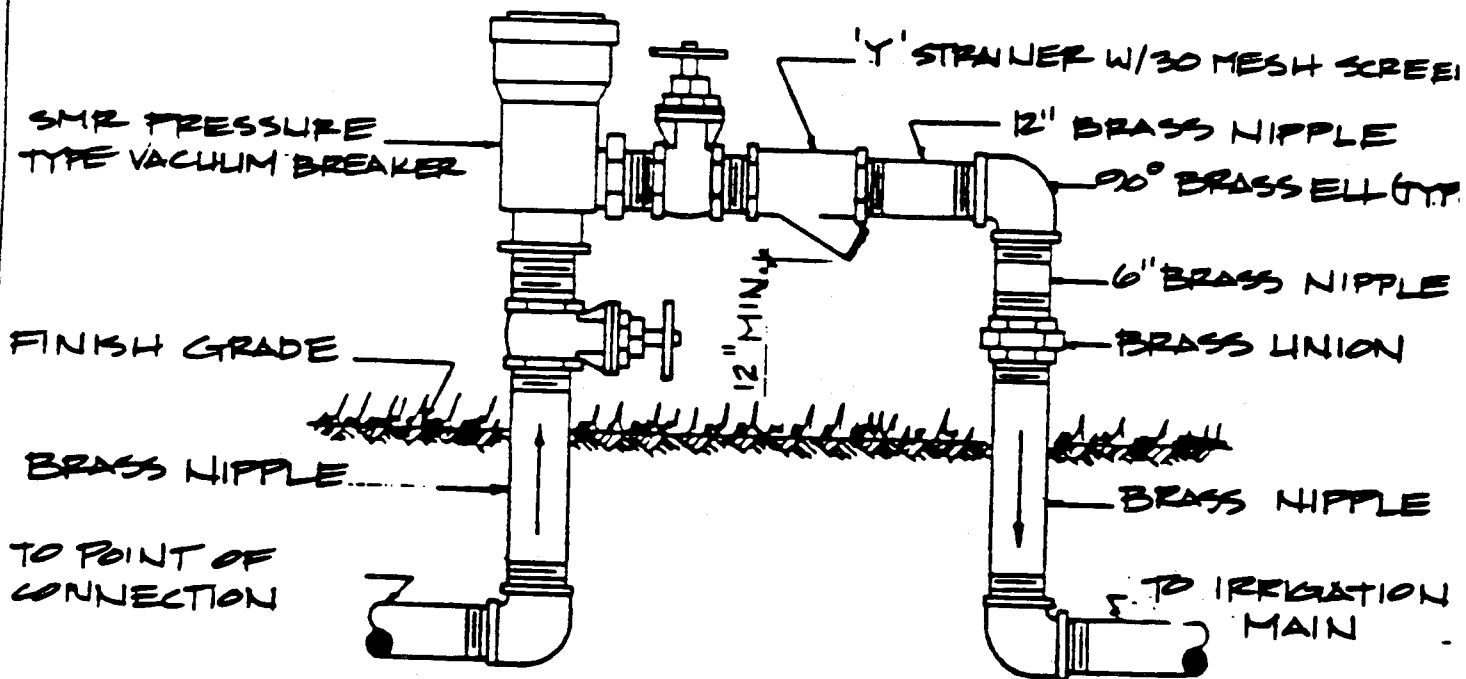
110

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DATE

NOTE - INSTALL PER LOCAL CODE.



city of oceanside

PRESSURE VACUUM BREAKER

revisions

4.3.84

standard detail

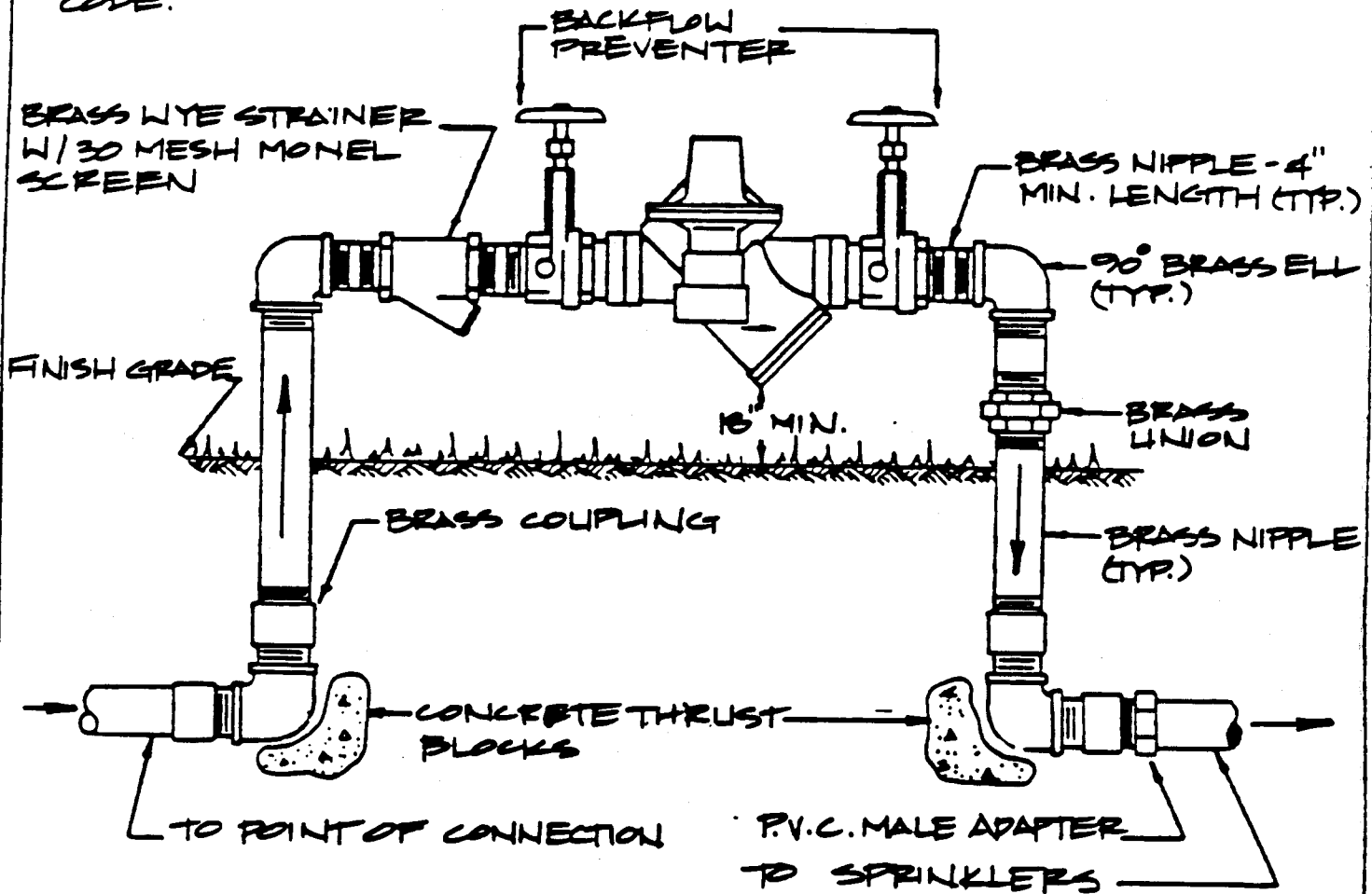
111

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DATE

NOTE:
INSTALL PER LOCAL
CODE.



city of oceanside

standard
detail

BACKFLOW PREVENTER (2" & SMALLER)

revisions

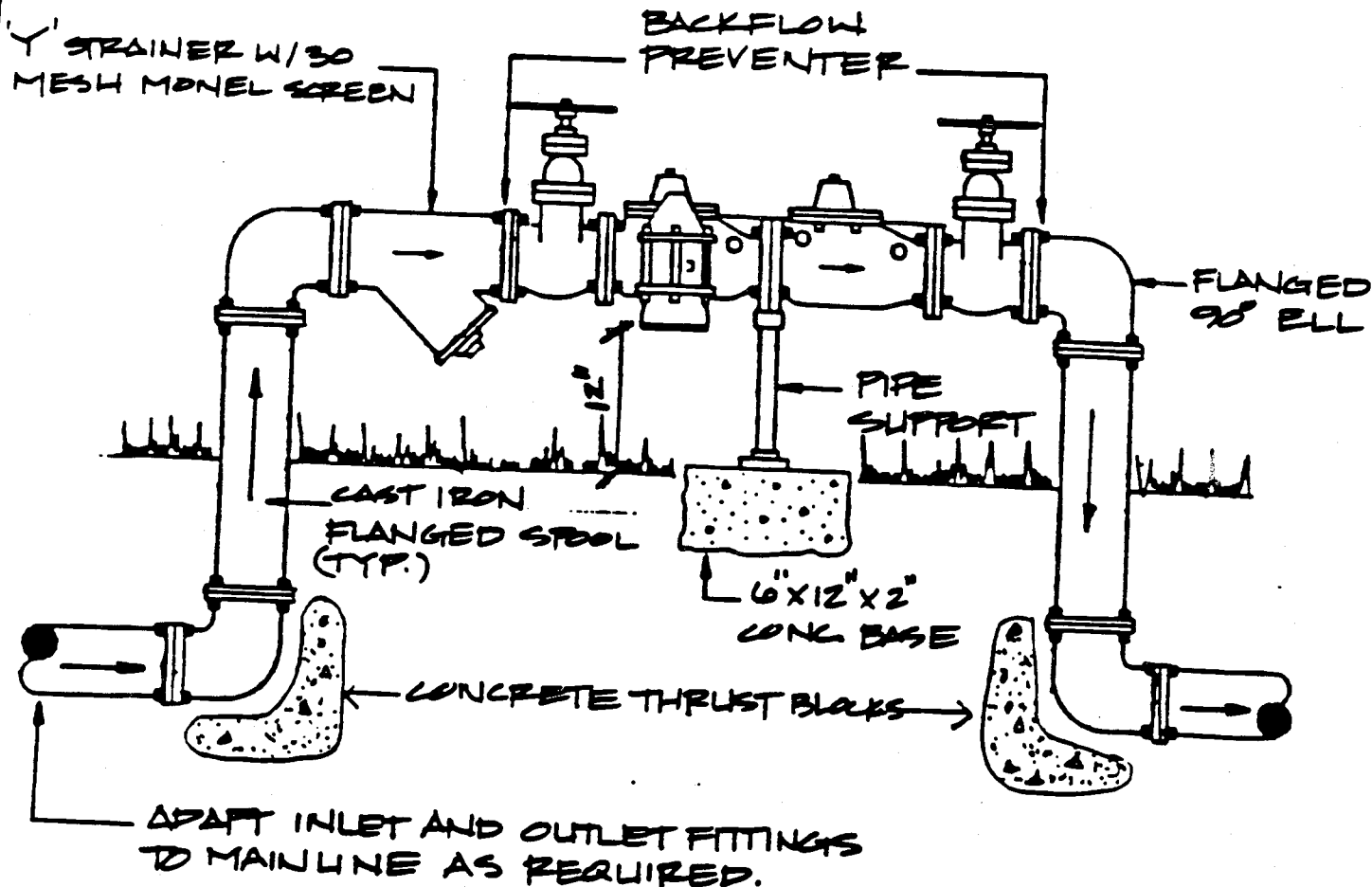
4.3.84

112

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CITY ENGINEER

DATE



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BACKFLOW PREVENTER (2 1/2" & LARGER)

revisions

4.3.04

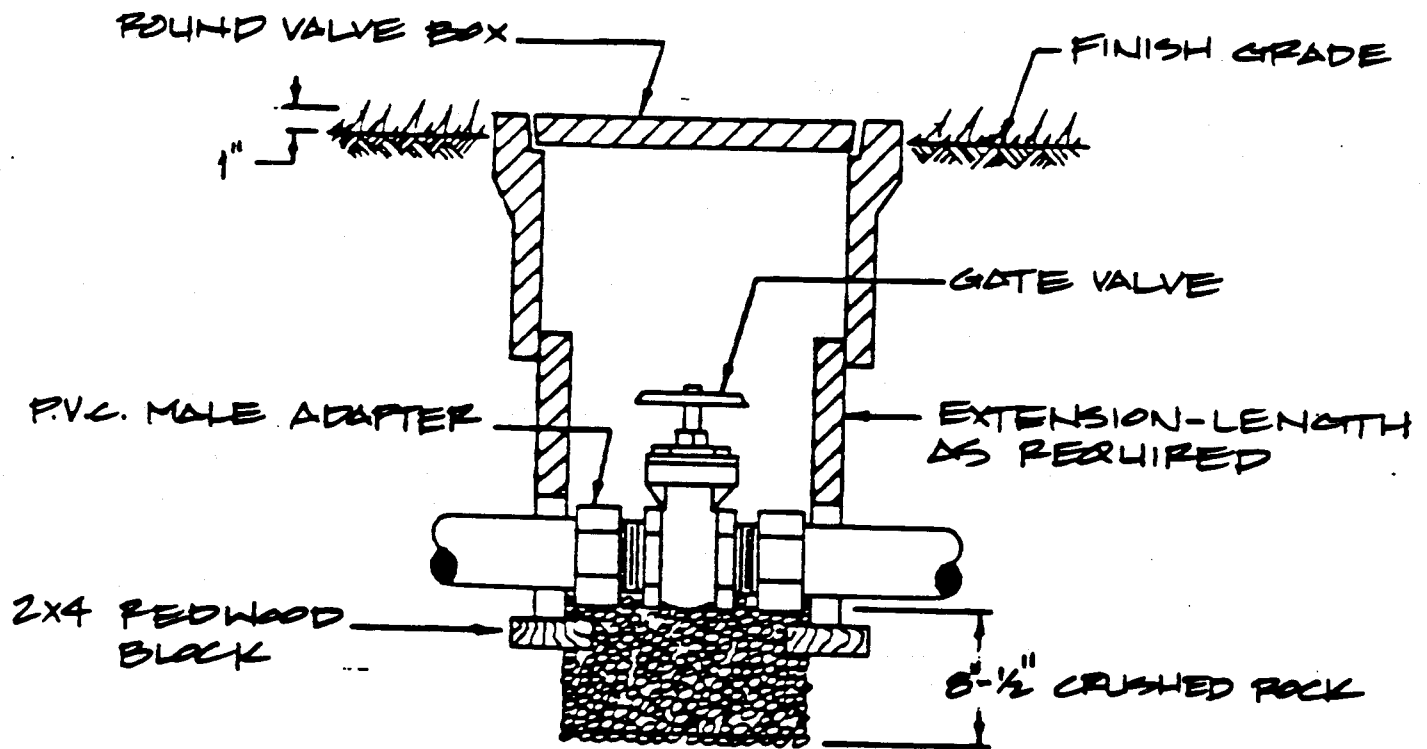
APPROVED BY:

CITY ENGINEER

DATE

standard
detail

113



city of oceanside

GATE VALVE

revisions

4.3.84

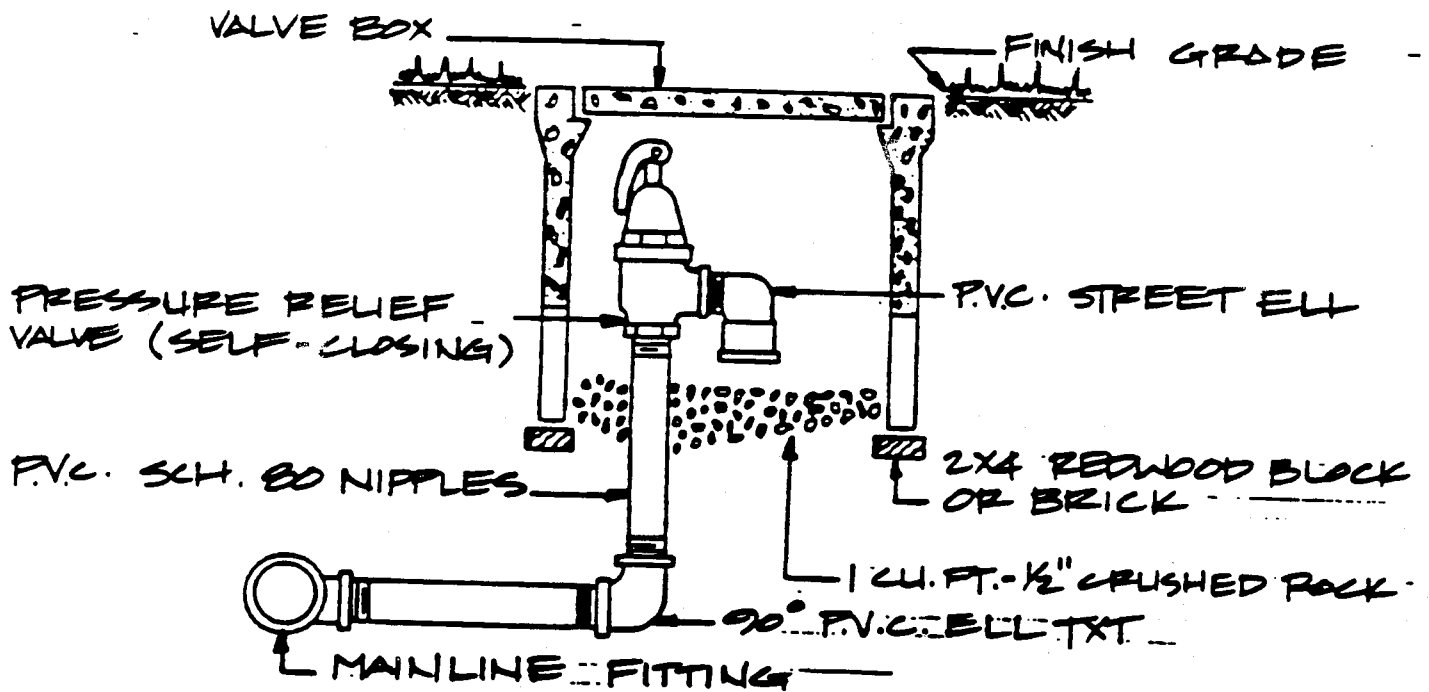
standard
detail

114

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DATE



city of oceanside

PRESSURE RELIEF VALVE

revisions

4.3.84

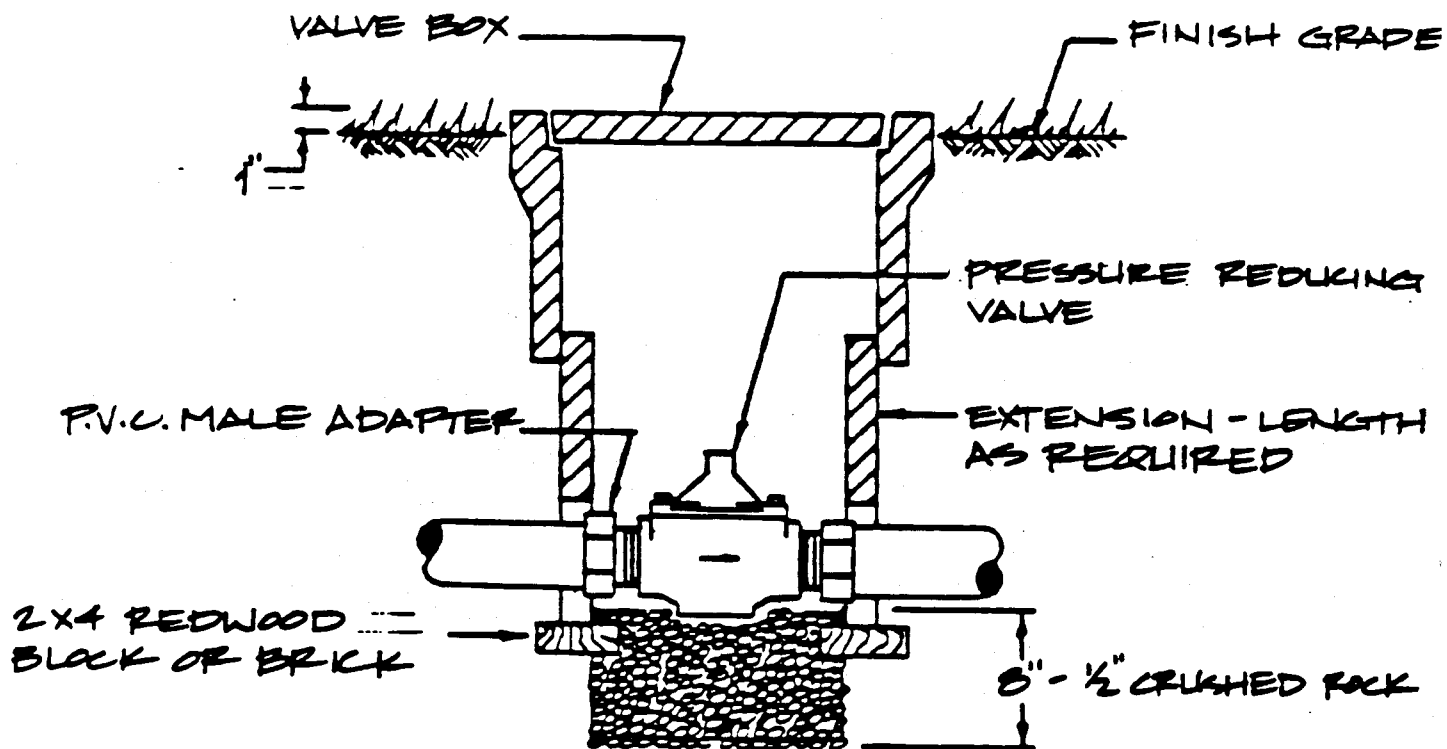
standard
detail

115

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DATE



city of oceanside

PRESSURE REDUCING VALVE

revisions

4.3.84

standard detail

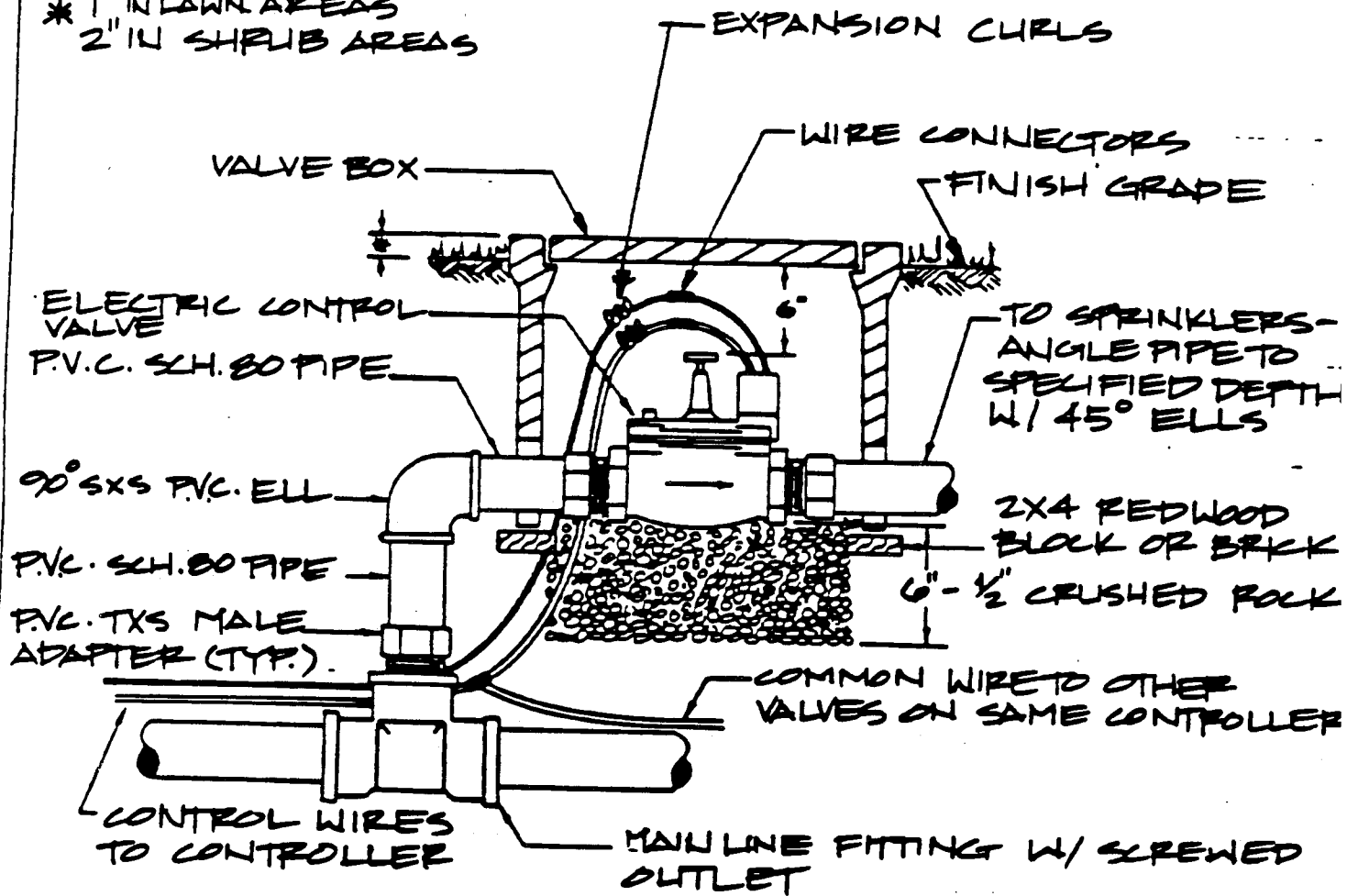
116

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DATE

* 1" IN LAWN AREAS
2" IN SHRUB AREAS



city of oceanside

ELECTRIC CONTROL VALVE

revisions

4.3.84

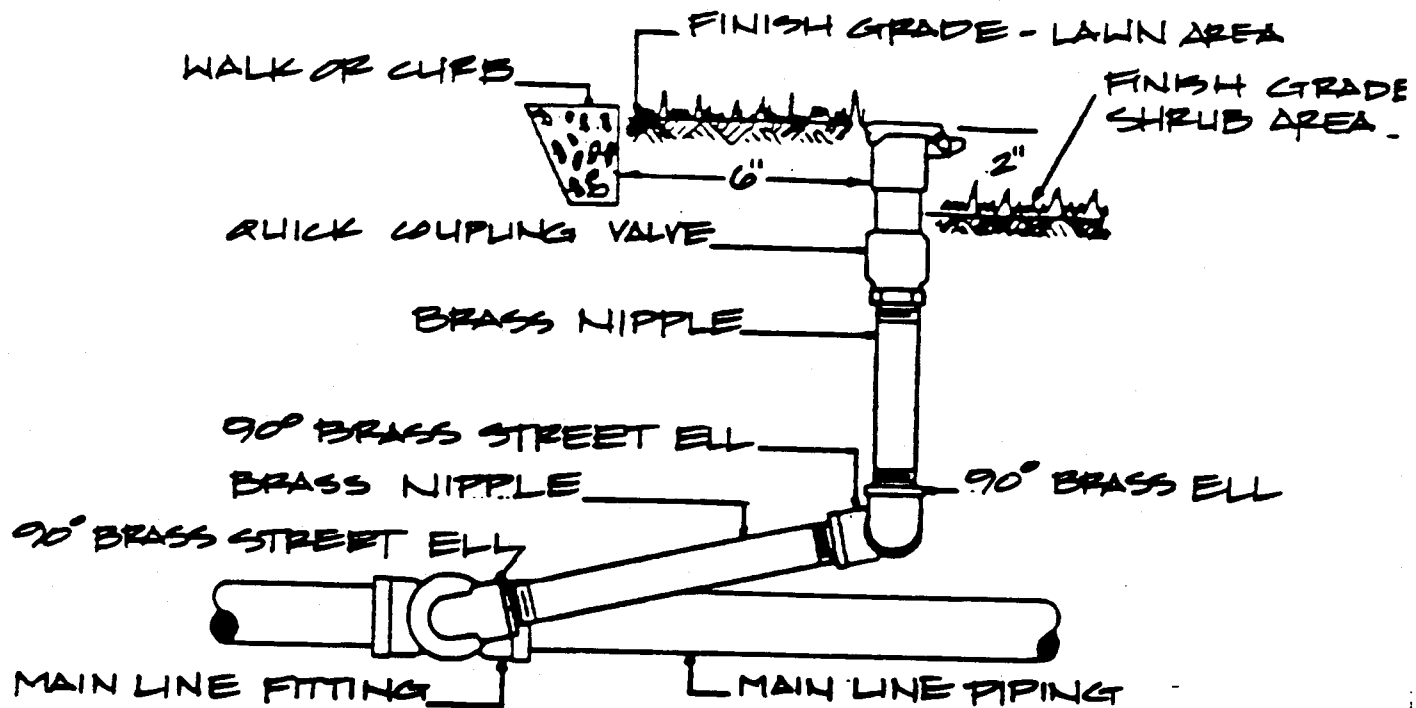
standard detail

117

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DATE



city of oceanside

QUICK COUPLING VALVE

revisions

4.3.84

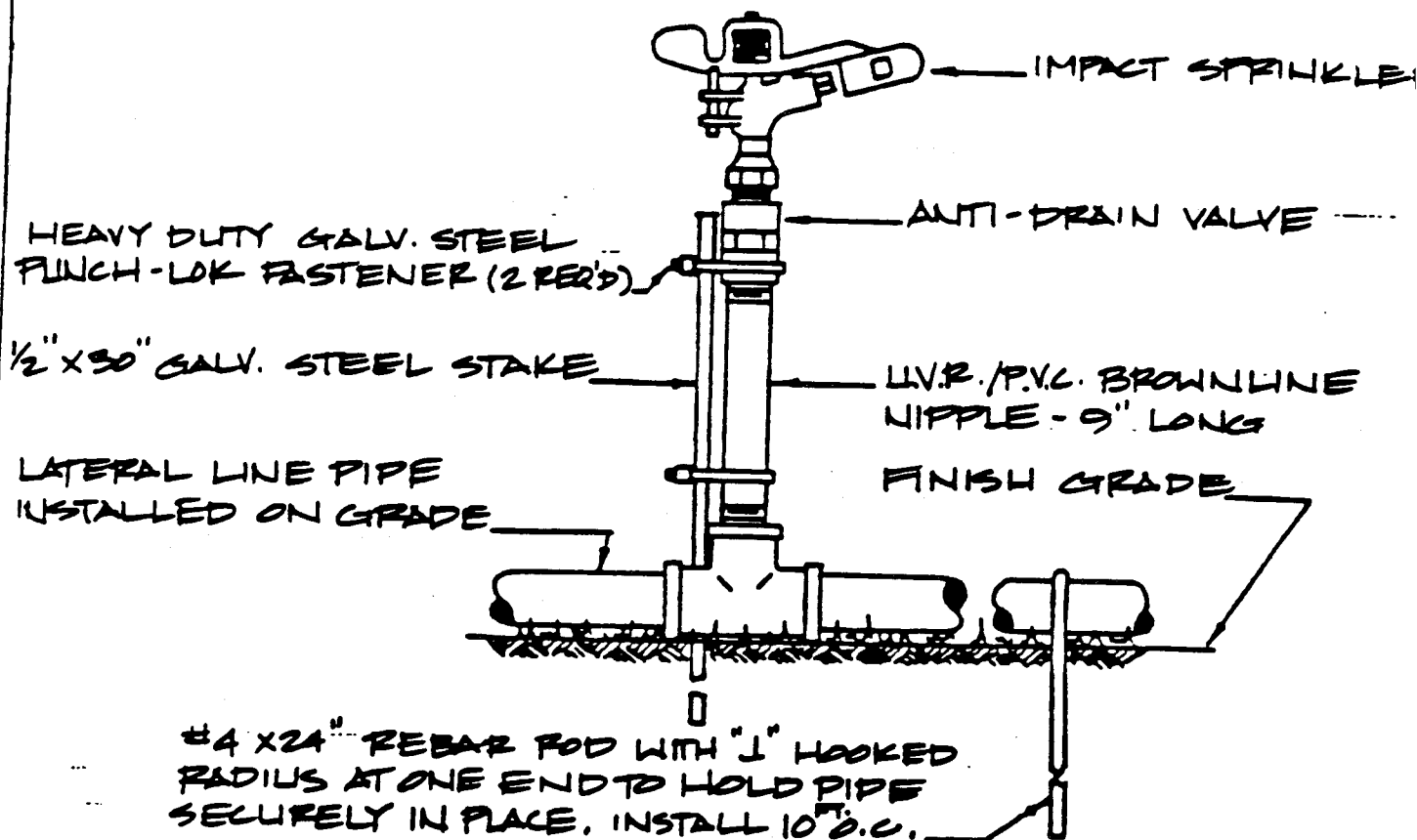
standard
detail

118

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CITY ENGINEER

DATE



NOTE: UVR/PVC BROWNLIN PIPE SHALL BE USED. GALV. STEEL PIPE ACCEPTABLE ONLY UPON CITY LANDSCAPE ARCHITECT APPROVAL.

city of oceanside

standard
detail
1.19

IMPACT SPRINKLER (ON GRADE)

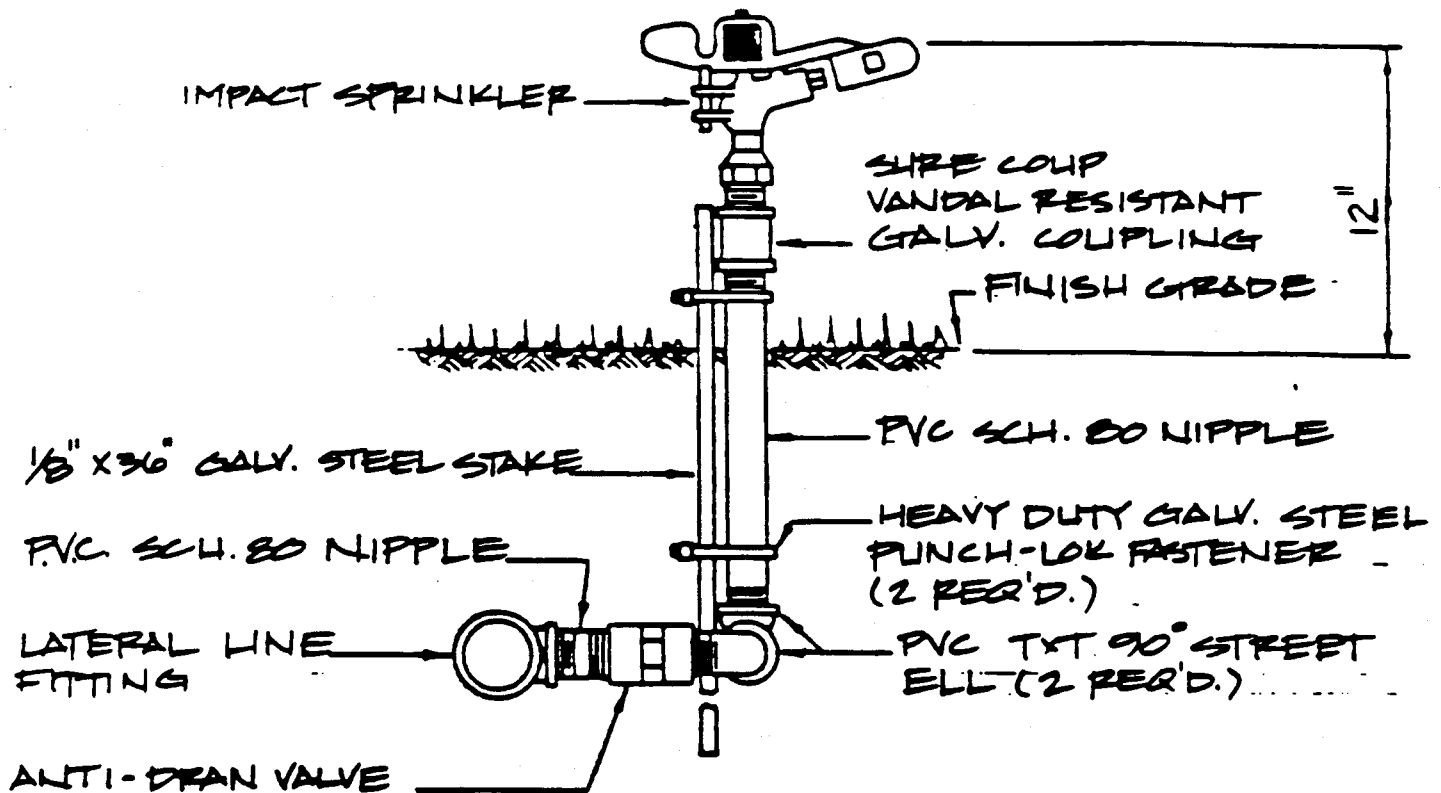
revisions

4.3.84

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CITY ENGINEER

DATE



NOTE: USE TEFLON TAPE
ON ALL MALE PIPE THREADS.

city of oceanside

IMPACT SPRINKLER

revisions

4.3.04

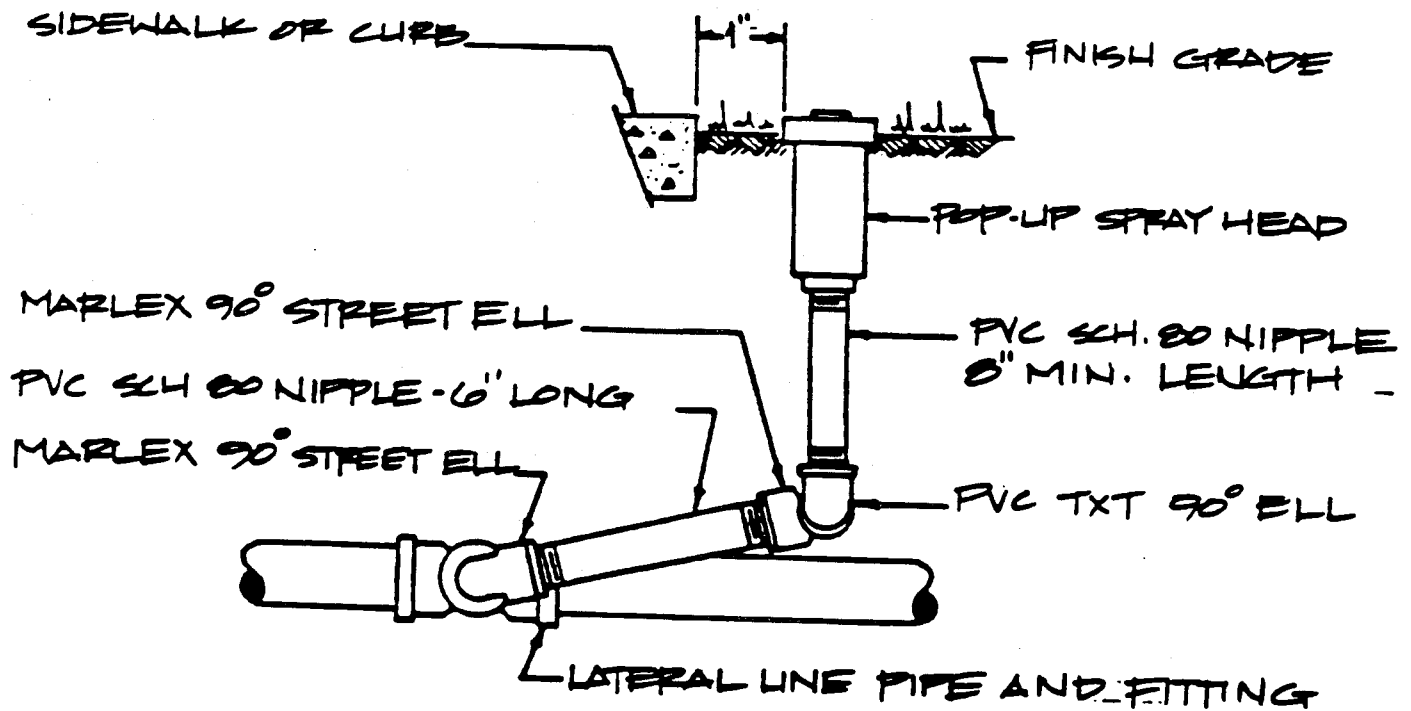
standard
detail

120

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CITY ENGINEER

DATE



NOTE: ONLY POP-UP'S ALLOWED ALONG WALK, CURBS, STREETS, ETC.

city of oceanside

POP-UP LAWN HEAD

revisions

4.3.84

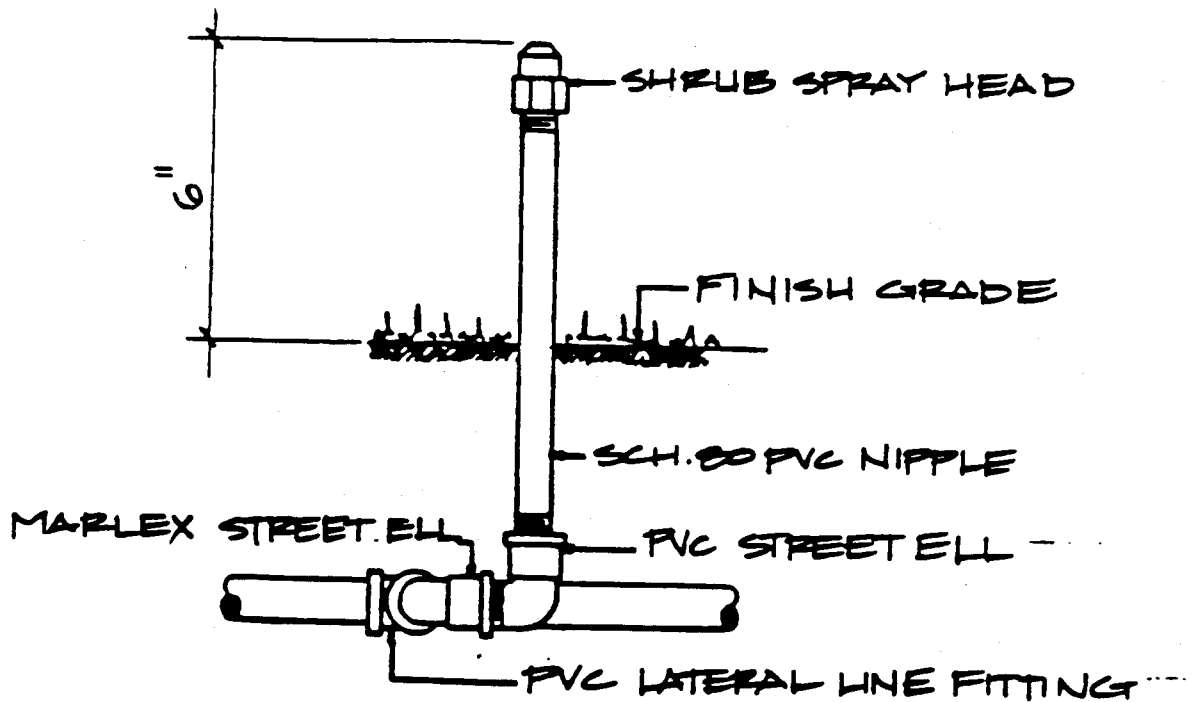
standard detail

121

APPROVED BY:

CITY ENGINEER

DATE



city of oceanside

standard
detail
122

SHRUBBERY SPRAY

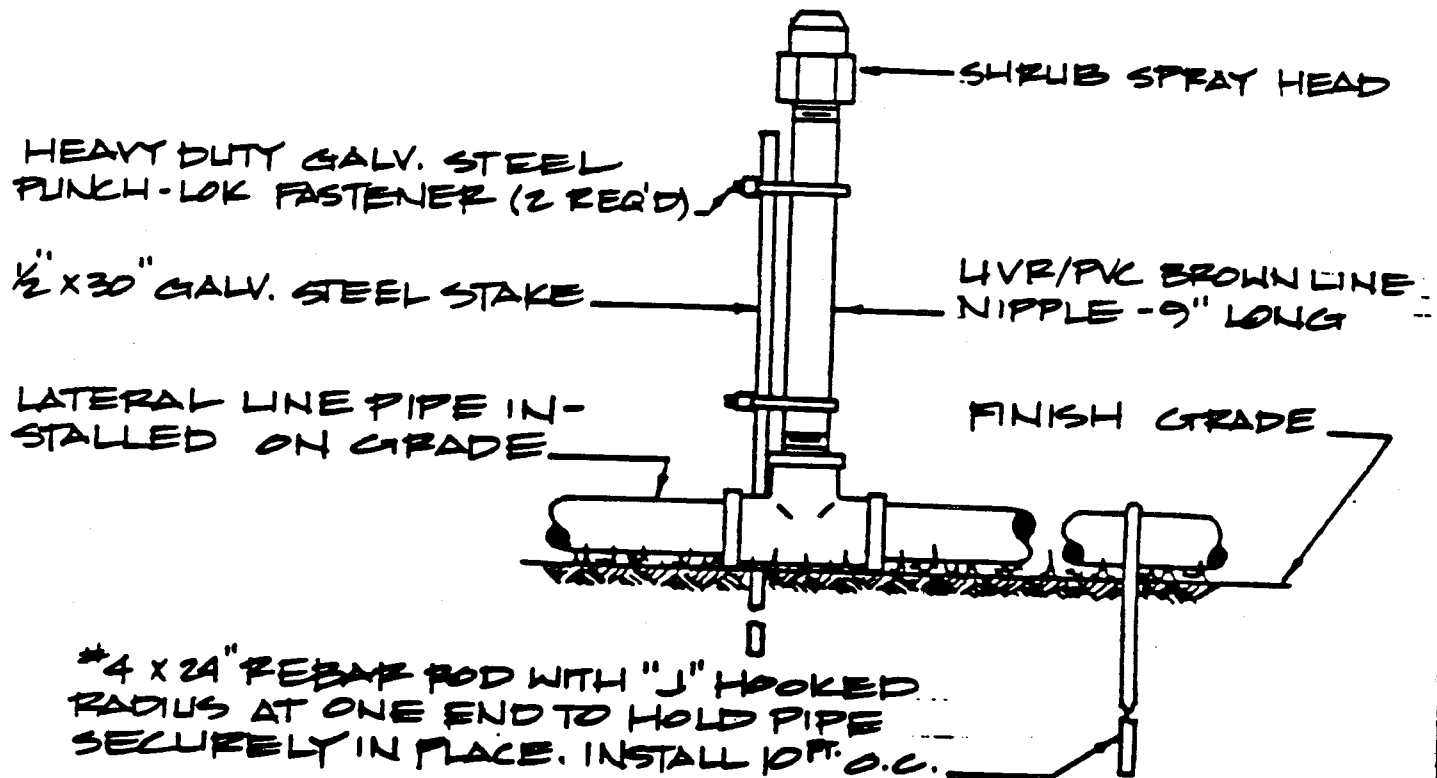
revisions

4.3.84

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CITY ENGINEER

DATE



NOTE: UVR/PVC BROWN LINE PIPE SHALL BE USED. GALV. STEEL PIPE ACCEPTABLE ONLY UPON CITY LANDSCAPE ARCHITECT APPROVAL.

city of oceanside

standard
detail
123

SHRUBBERY SPRAY (ON GRADE)

revisions

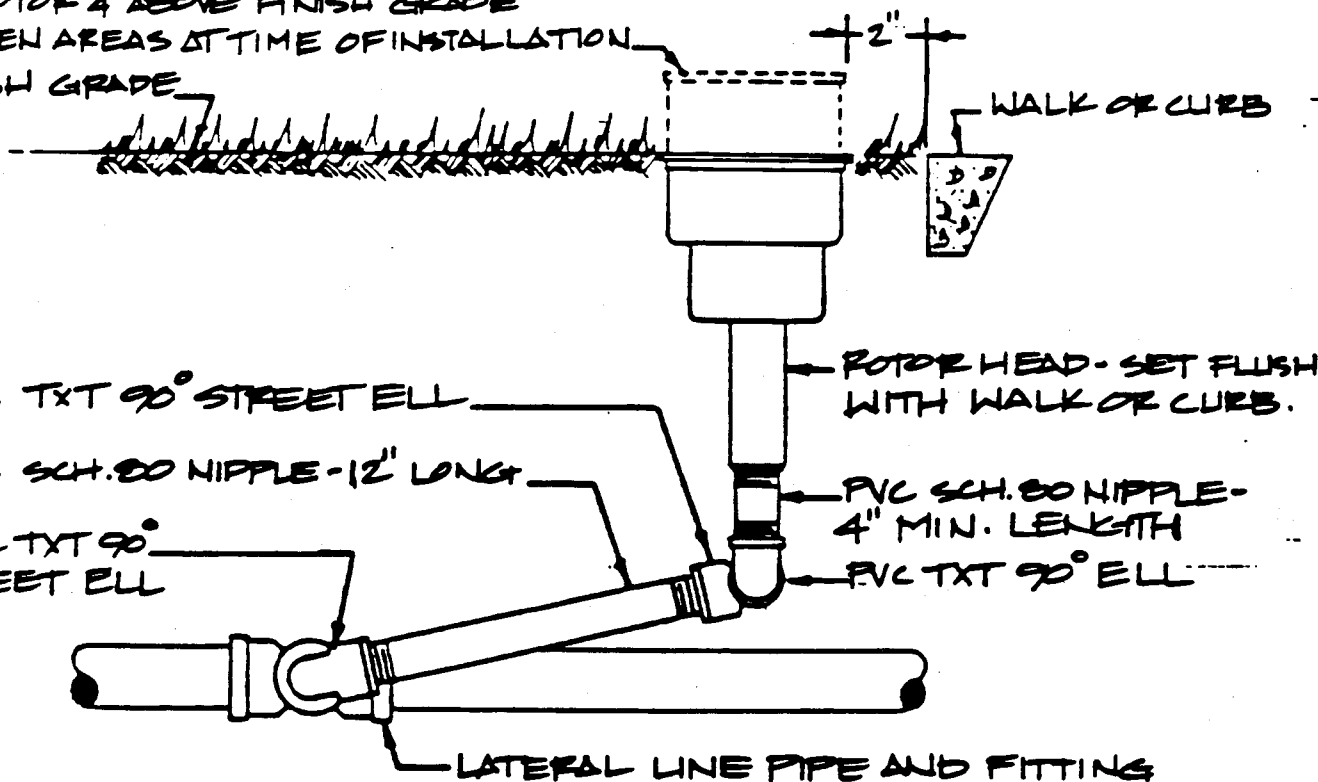
4.3.84

APPROVED BY:

CITY ENGINEER

DATE

SET ROTOR 4" ABOVE FINISH GRADE
IN OPEN AREAS AT TIME OF INSTALLATION



NOTE: USE TEFLON TAPE ON ALL MALE THREADS.

city of oceanside

standard
detail
124

ROTOR POP-UP

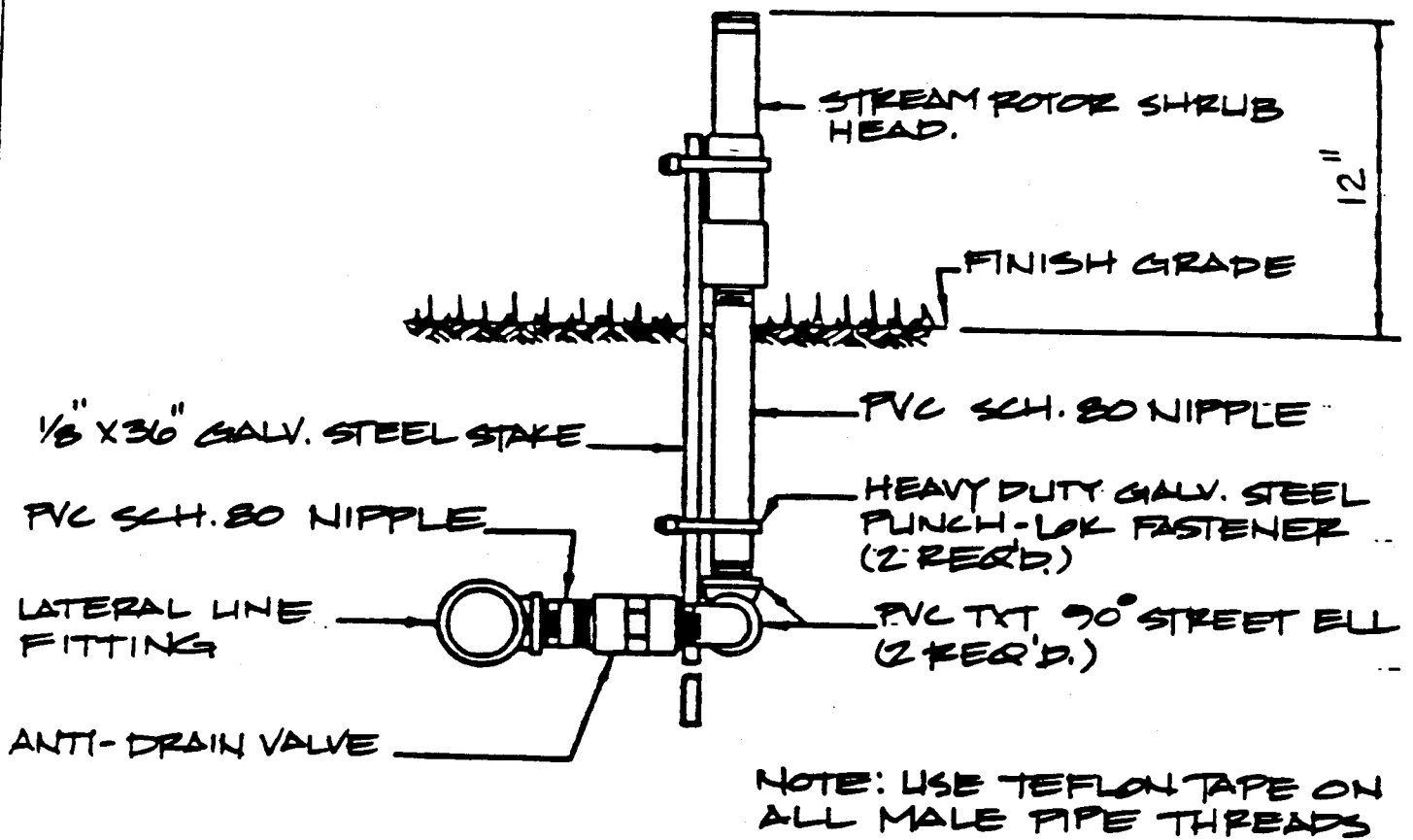
revisions

4.3.84

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CITY ENGINEER

DATE



city of oceanside

STREAM-ROTOR SHRUB HEAD

revisions

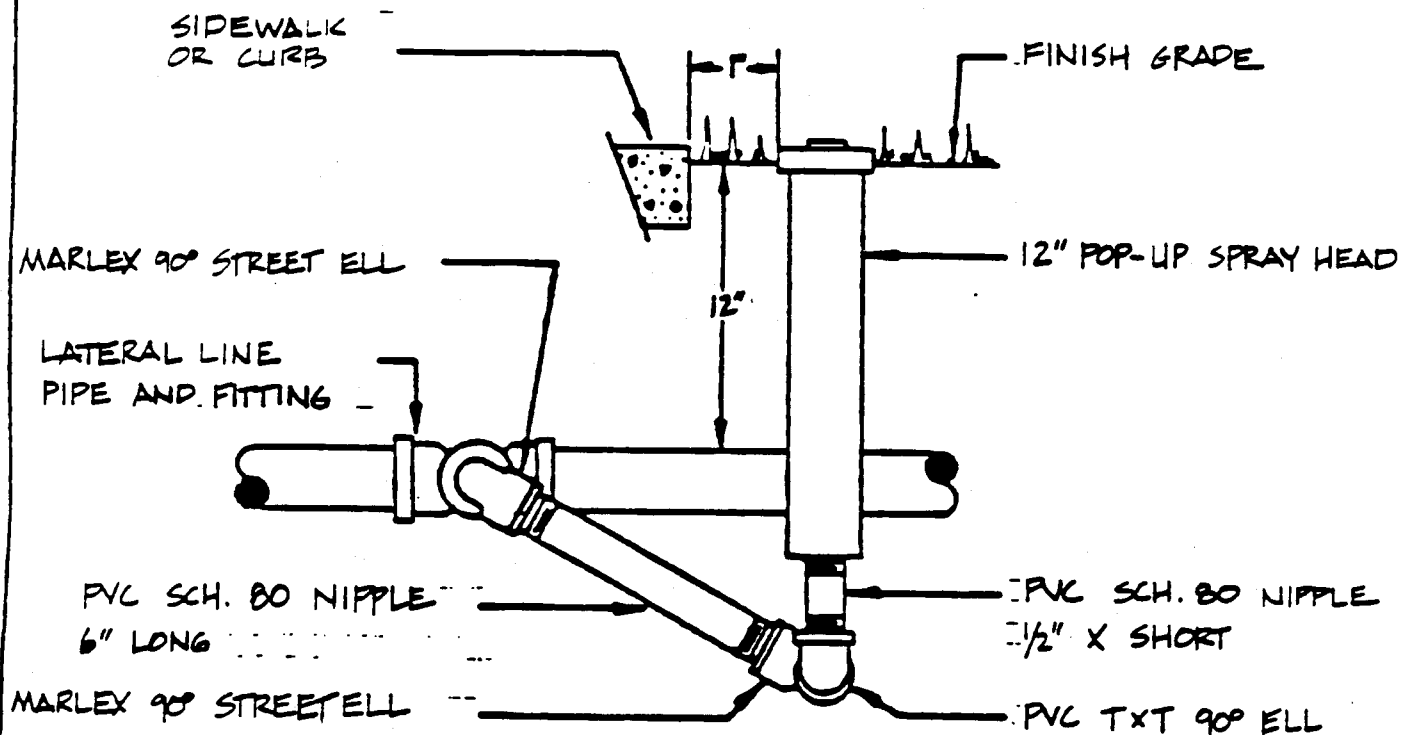
4.3.04

**standard
detail
125**

APPROVED BY:

CITY ENGINEER

DATE



city of oceanside

**standard
detail
127**

12" POP-UP SPRAY / ROTOR HEAD

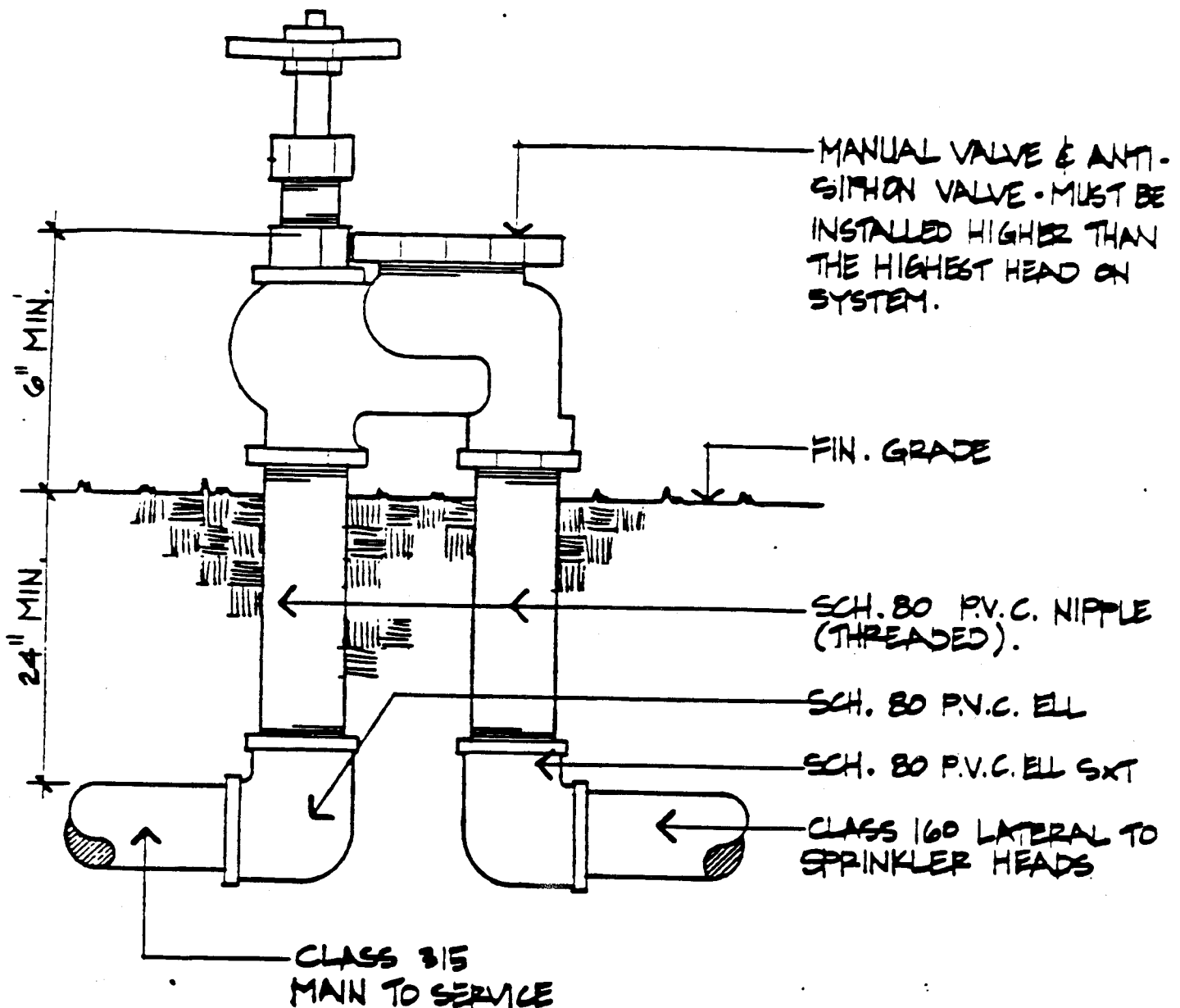
revisions

4.3.84

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DATE



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MANUAL VALVE &
ANTI-SIPHON VALVE DETAIL

revisions

4.3.84

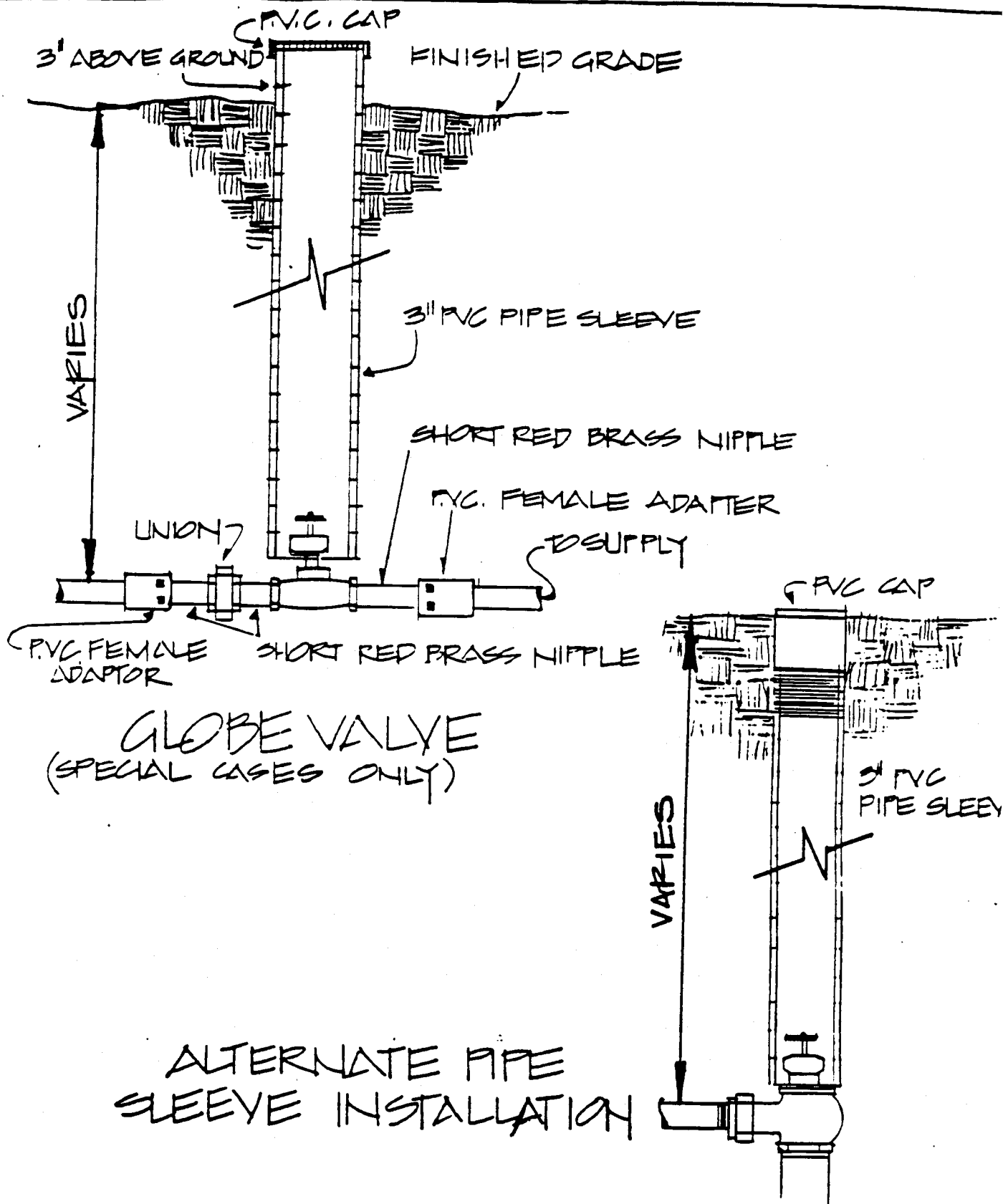
standard
detail

128

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CITY ENGINEER

DATE



city of oceanside

MANUAL VALVES

revisions

4.3.04

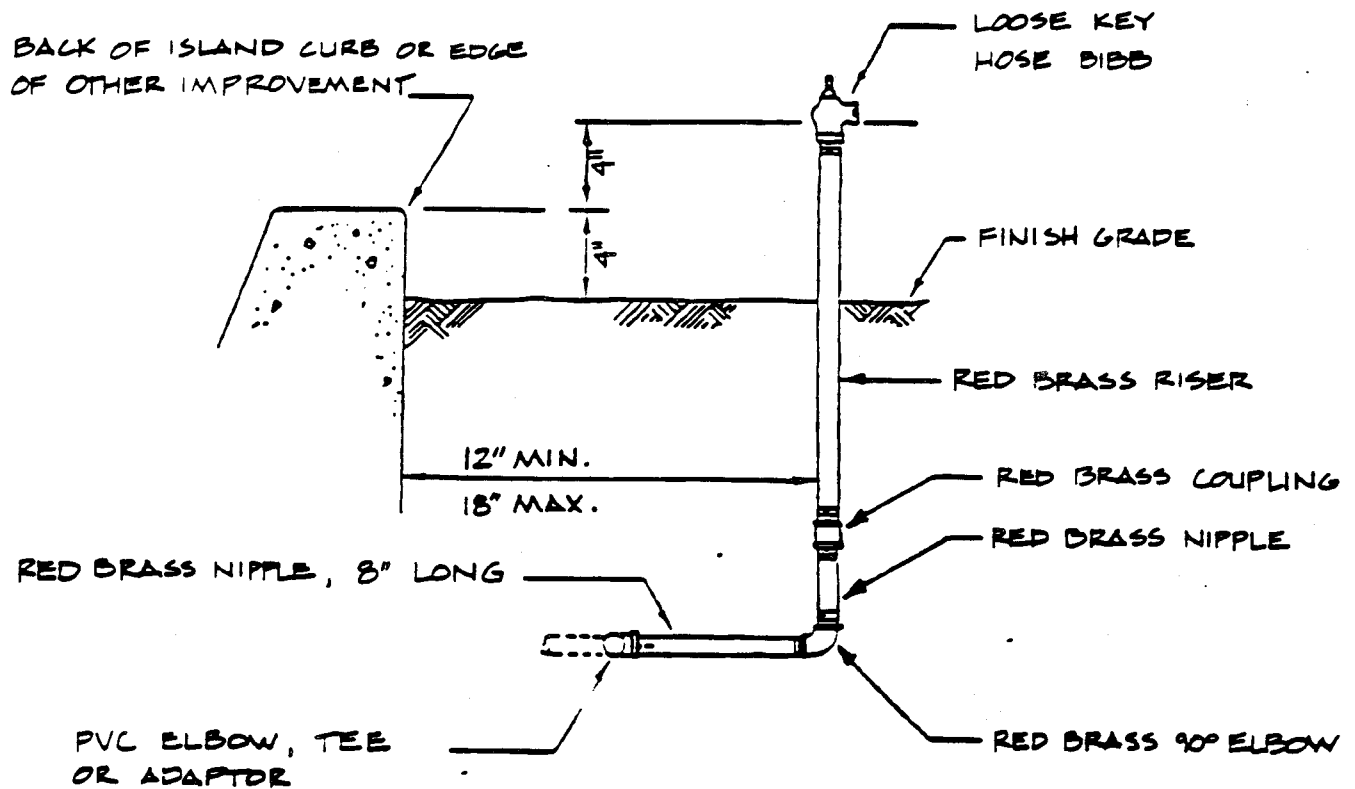
standard
detail

129

APPROVED BY:

CITY ENGINEER

DATE



NOTES:

1. HOSE BIBB SHALL BE LOOSE KEY OPERATED, ALL BRASS OR BRONZE CONSTRUCTION, ANGLE PATTERN WITH REMOVABLE BONNET AND STEM ASSEMBLY, REPLACABLE SEAT WASHERS AND STEM PACKING GLANDS.
2. UNLESS OTHERWISE SPECIFIED, THE HOSE CONNECTION THREAD SHALL BE 3/4" MALE HOSE THREAD (PACIFIC COAST), AND THE RISER OPENING THREAD SHALL BE 3/4" FEMALE I.P.S. DISCHARGE OPENING SHALL BE 90° TO RISER OPENING.

city of oceanside

**standard
detail**

HOSE BIBB

revisions

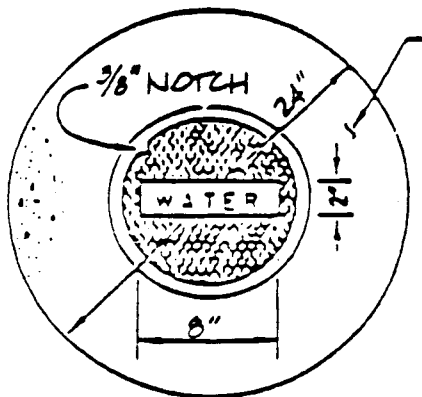
4.3.84

130

APPROVED BY:

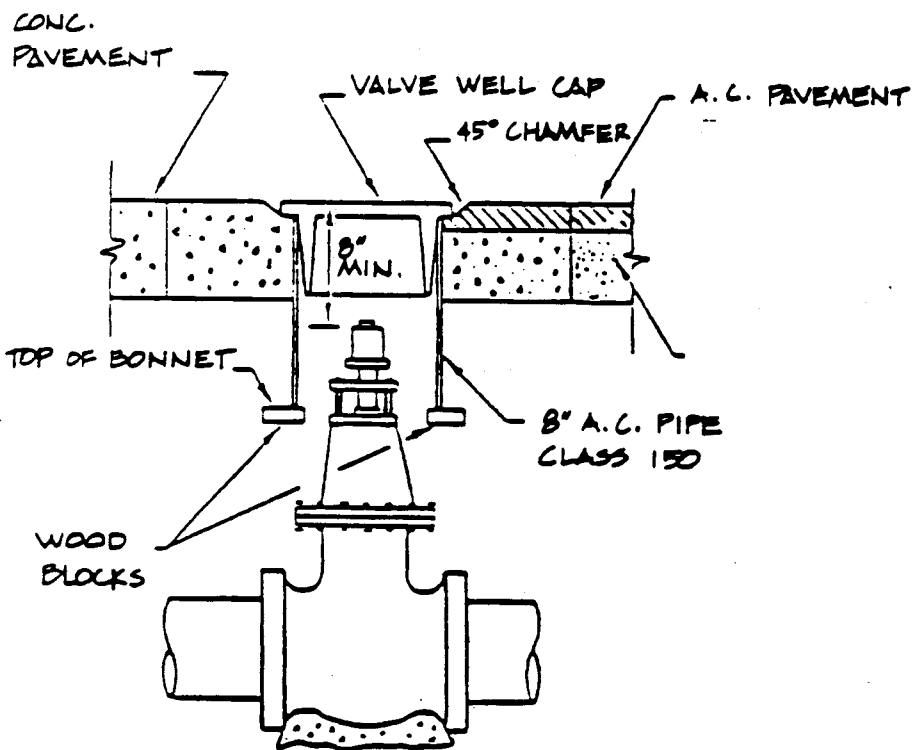
CITY ENGINEER

DATE

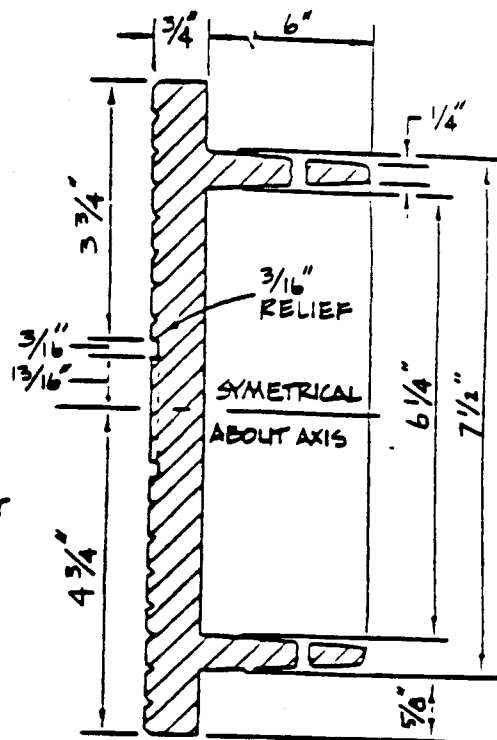


PLAN

PROVIDE 6" CONC. PAD
IN PAVED AREAS.



ELEVATION



CAST IRON
VALVE WELL CAP

NOTE: SEE LOCAL WATER
DISTRICT CODES.

city of oceanside

VALVE WELL & COVER

revisions

4.3.84

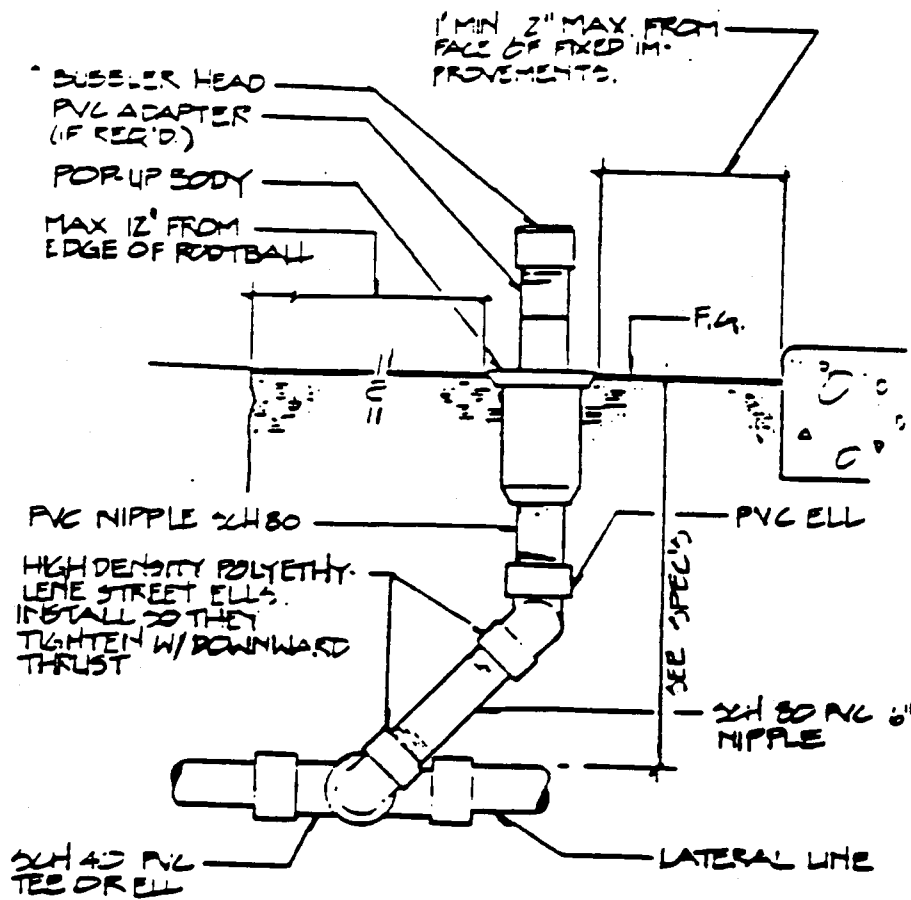
standard
detail

131

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CITY ENGINEER

DATE



city of oceanside

standard
detail

FOR-UP BUBBLER

revisions

4.3.84

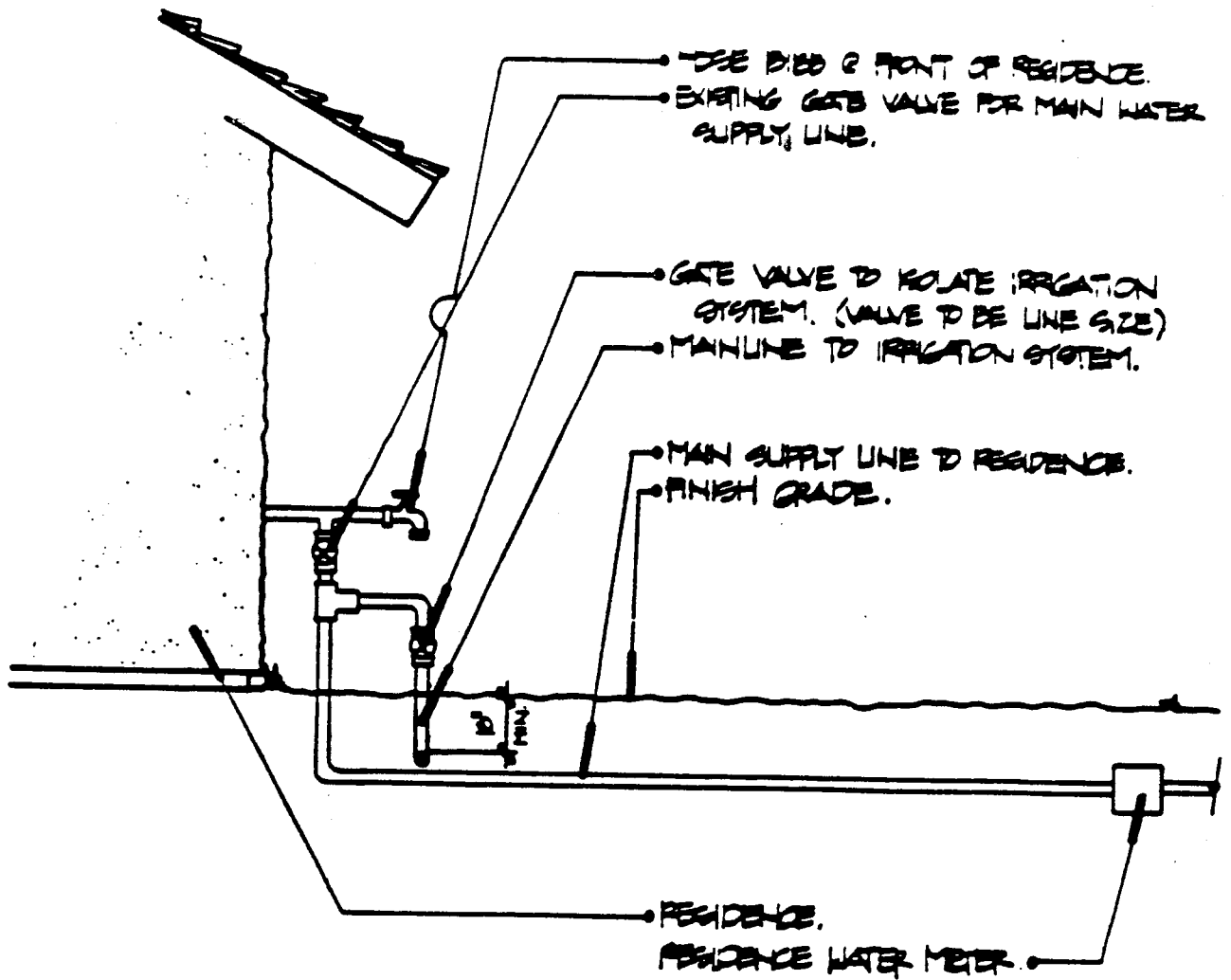
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DATE

27 June 85



city of oceanside

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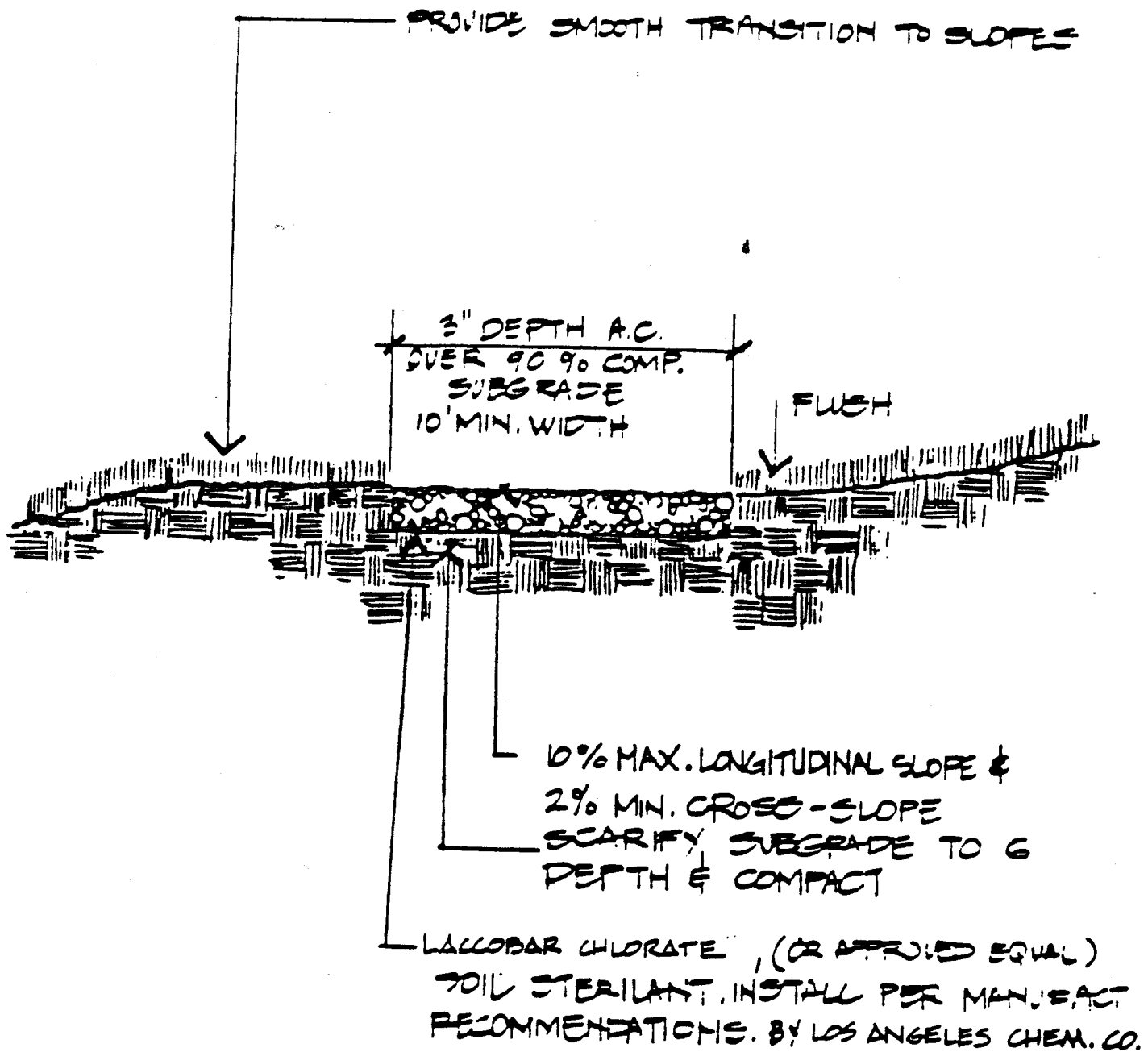
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DATE

27 Nov. 44



NOTE: ASPHALT CONC. PER CALTRANS "PLANNING & DESIGN CRITERIA
FOR BIKEWAYS IN CALIFORNIA", 16-30-78 PAGE 18

city of oceanside

A.C. PATH

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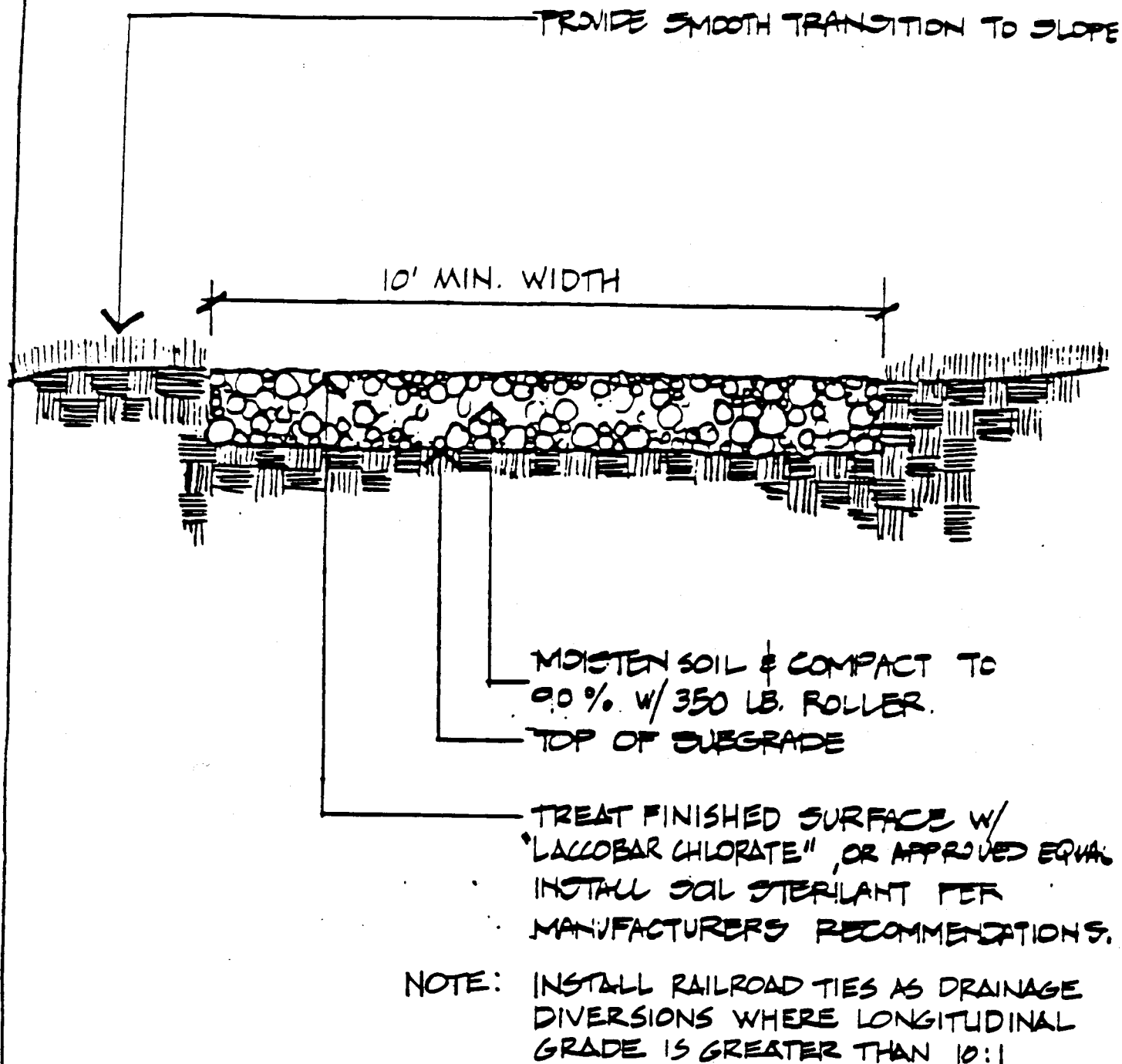
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DECOMPOSED GRANITE PATH

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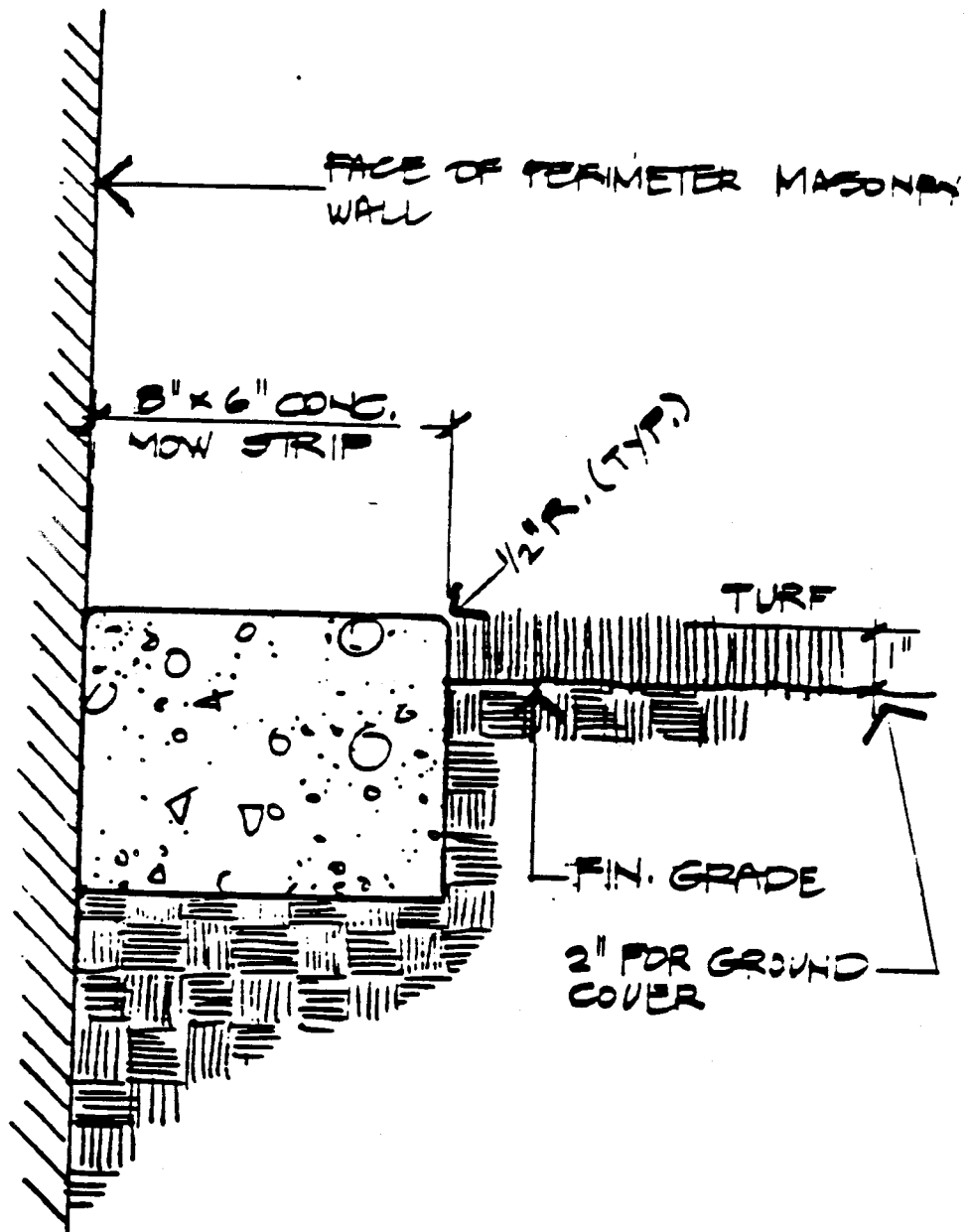
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CONCRETE MOW STRIP
ALONG MASONRY WALL

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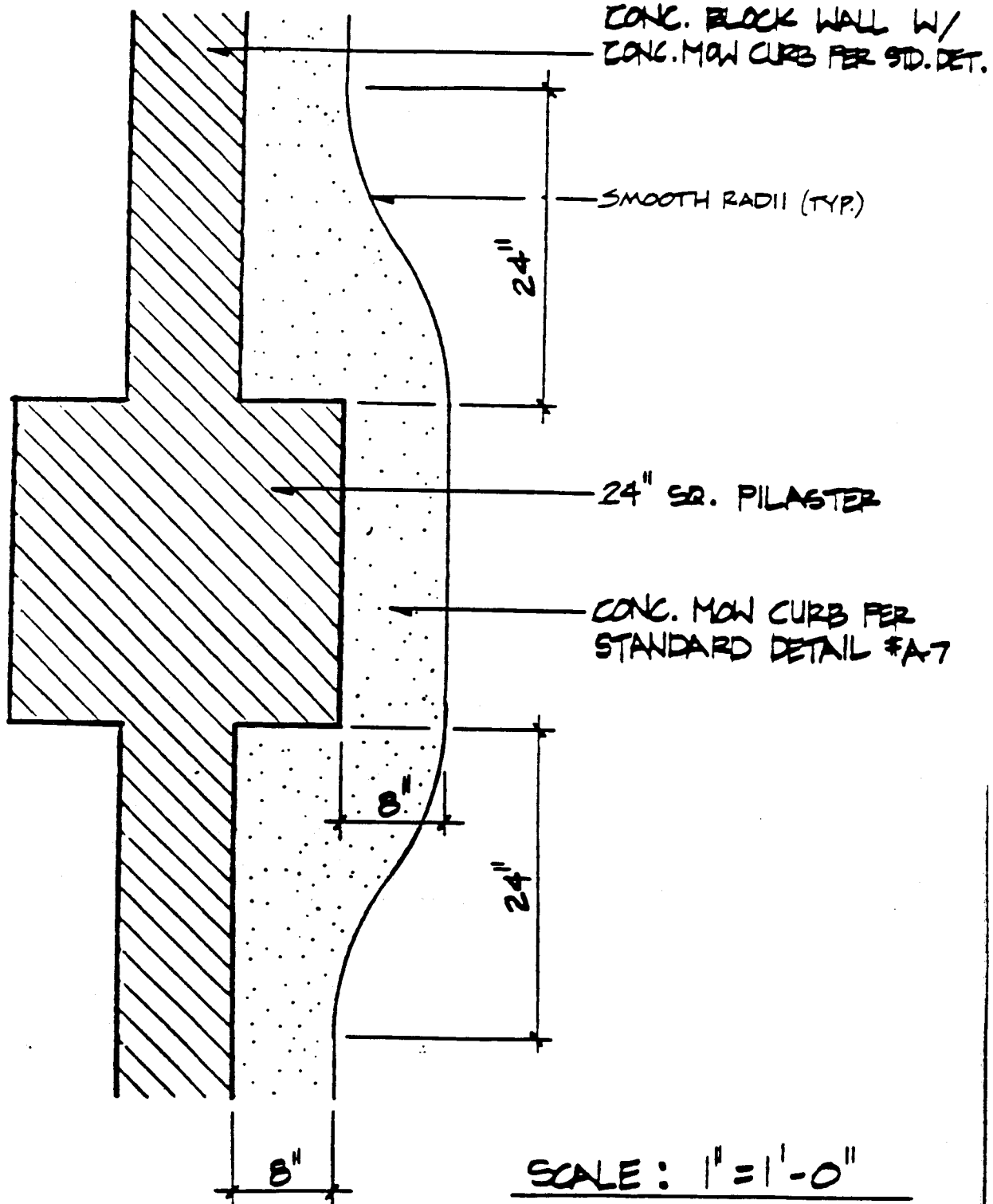
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CONCRETE CURB & PILASTER

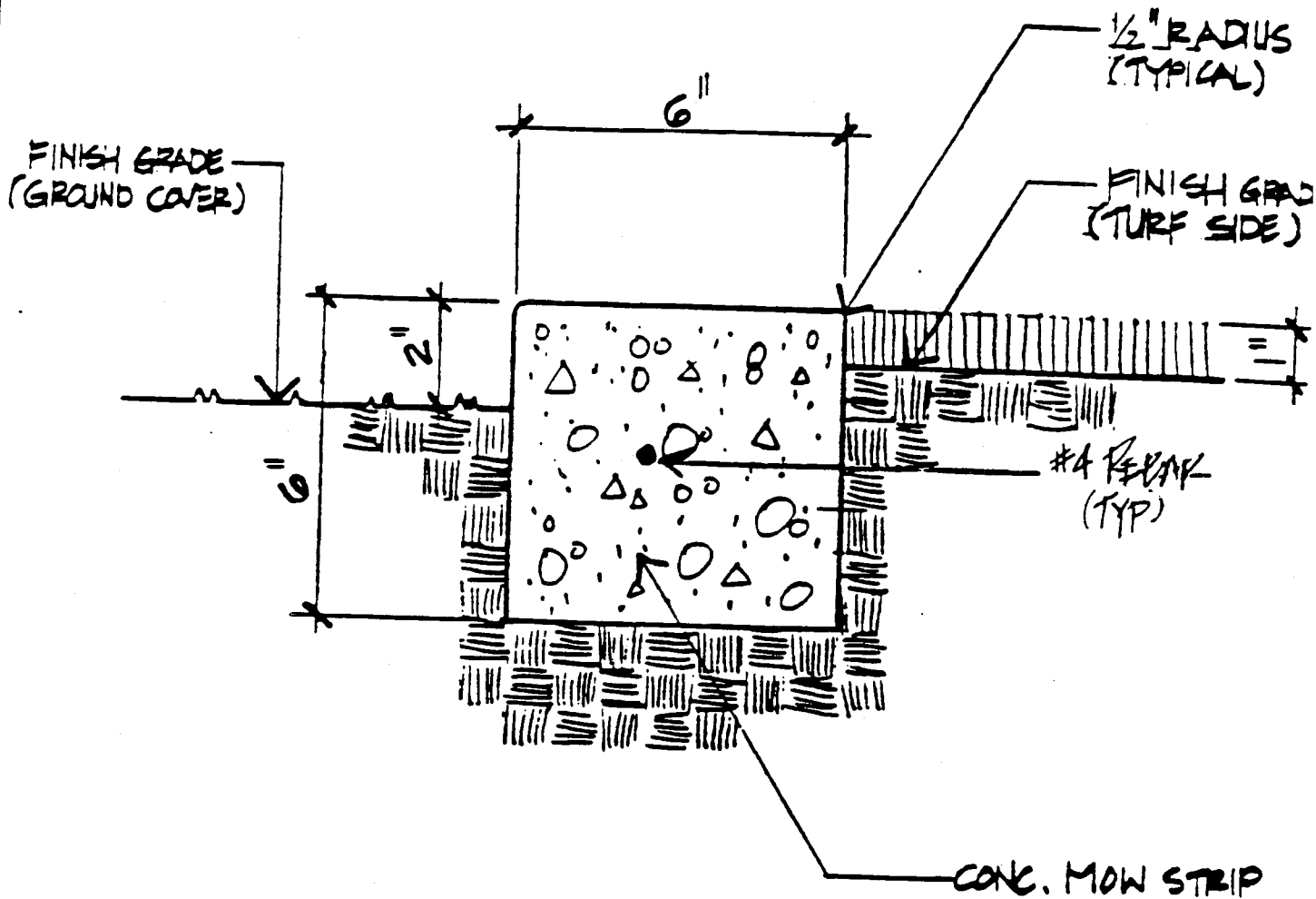
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CONCRETE MOW STRIP

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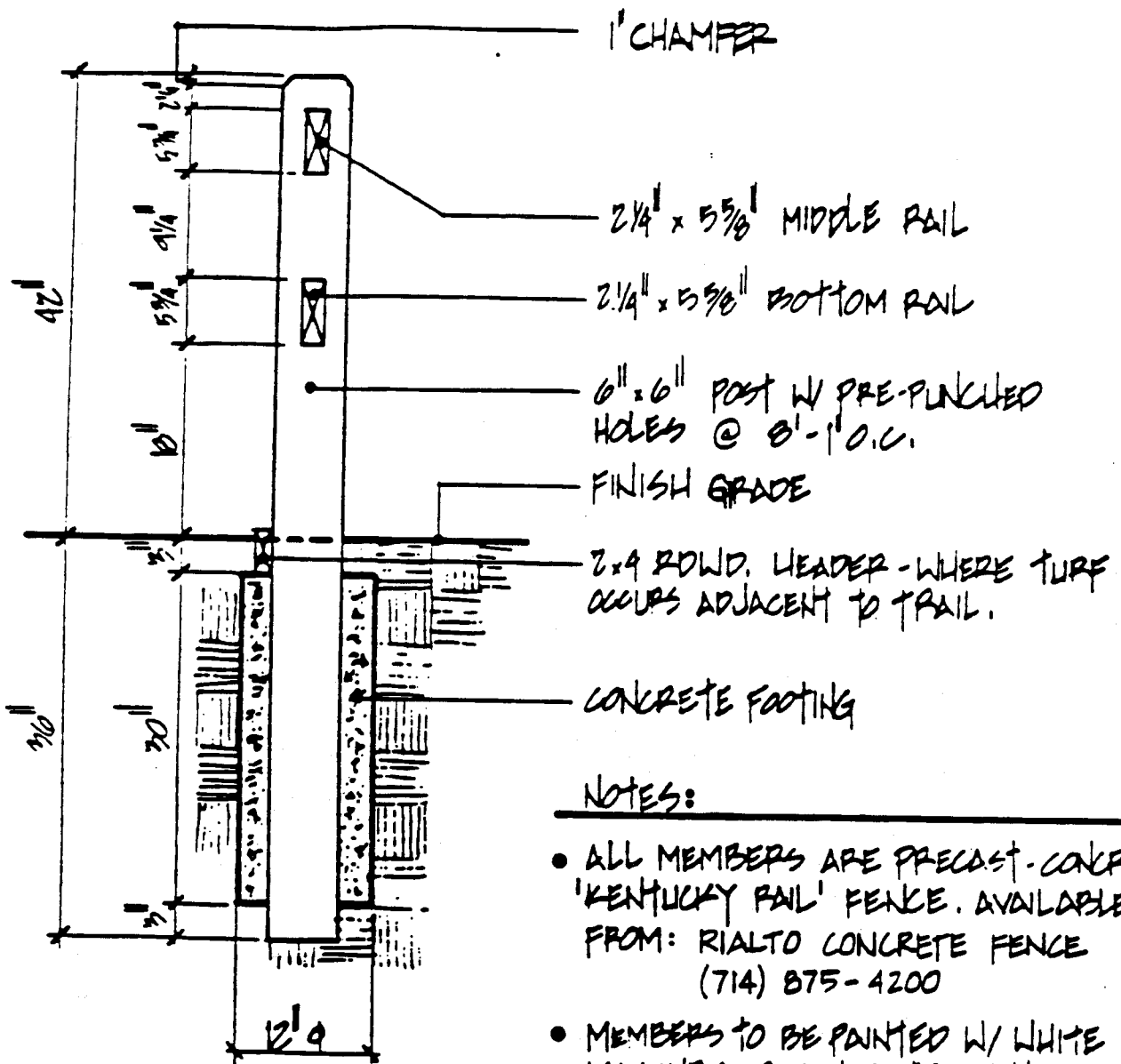
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NOTES:

- ALL MEMBERS ARE PRECAST-CONCRETE 'KENTUCKY RAIL' FENCE. AVAILABLE FROM: RIALTO CONCRETE FENCE (714) 875-4200
- MEMBERS TO BE PAINTED W/ WHITE MASONRY OR CONCRETE PAINT
- CHANGE IN LINEAL DIRECTION REQUIRES 2 POSTS - SIDE BY SIDE.
- END POSTS SHALL HAVE OPEN SLOTS FILLED W/ MORTAR & TEXTURE FINISHED PRIOR TO PAINTING.

city of oceanside

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CONCRETE EQUESTRIAN FENCE

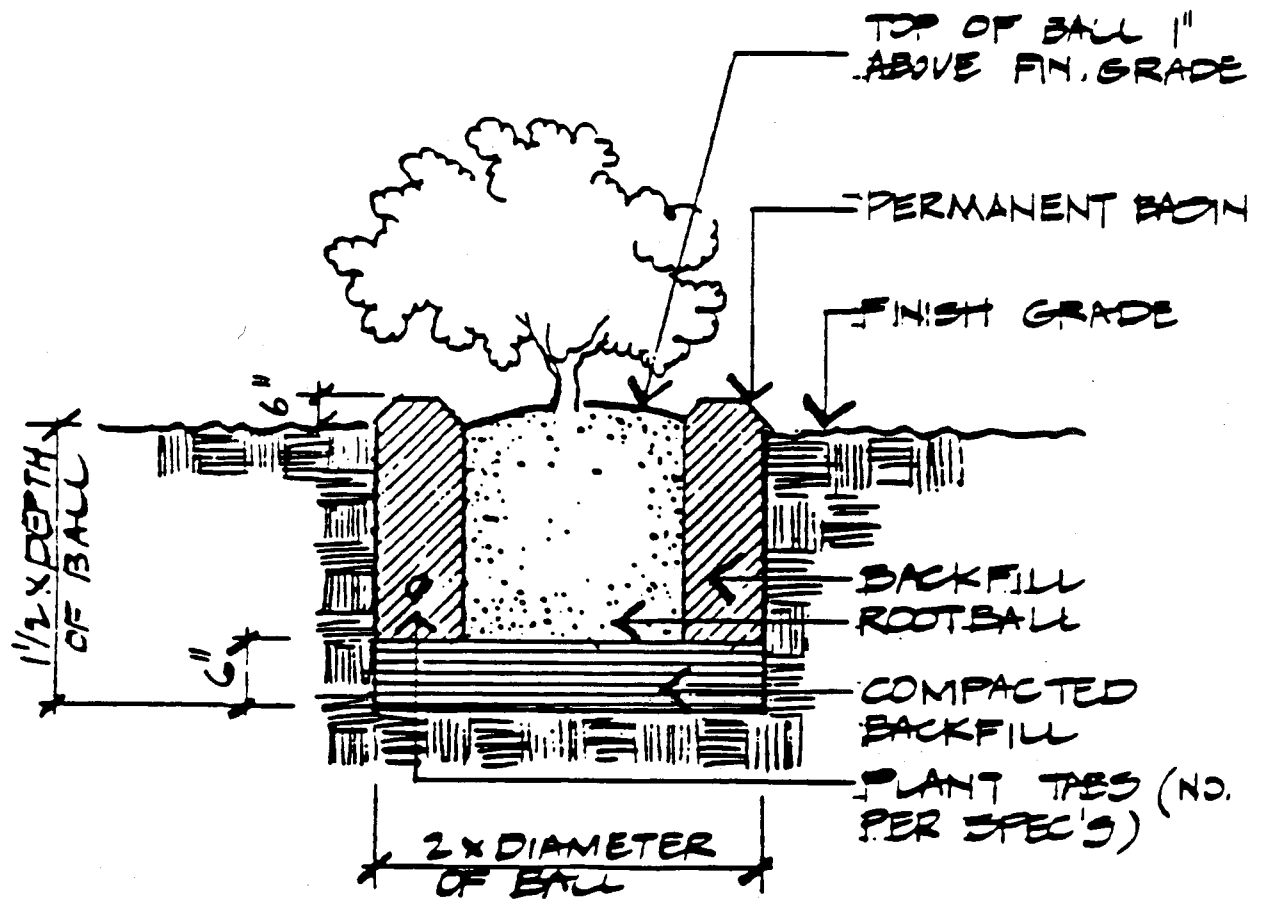
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SHRUB PLANTING

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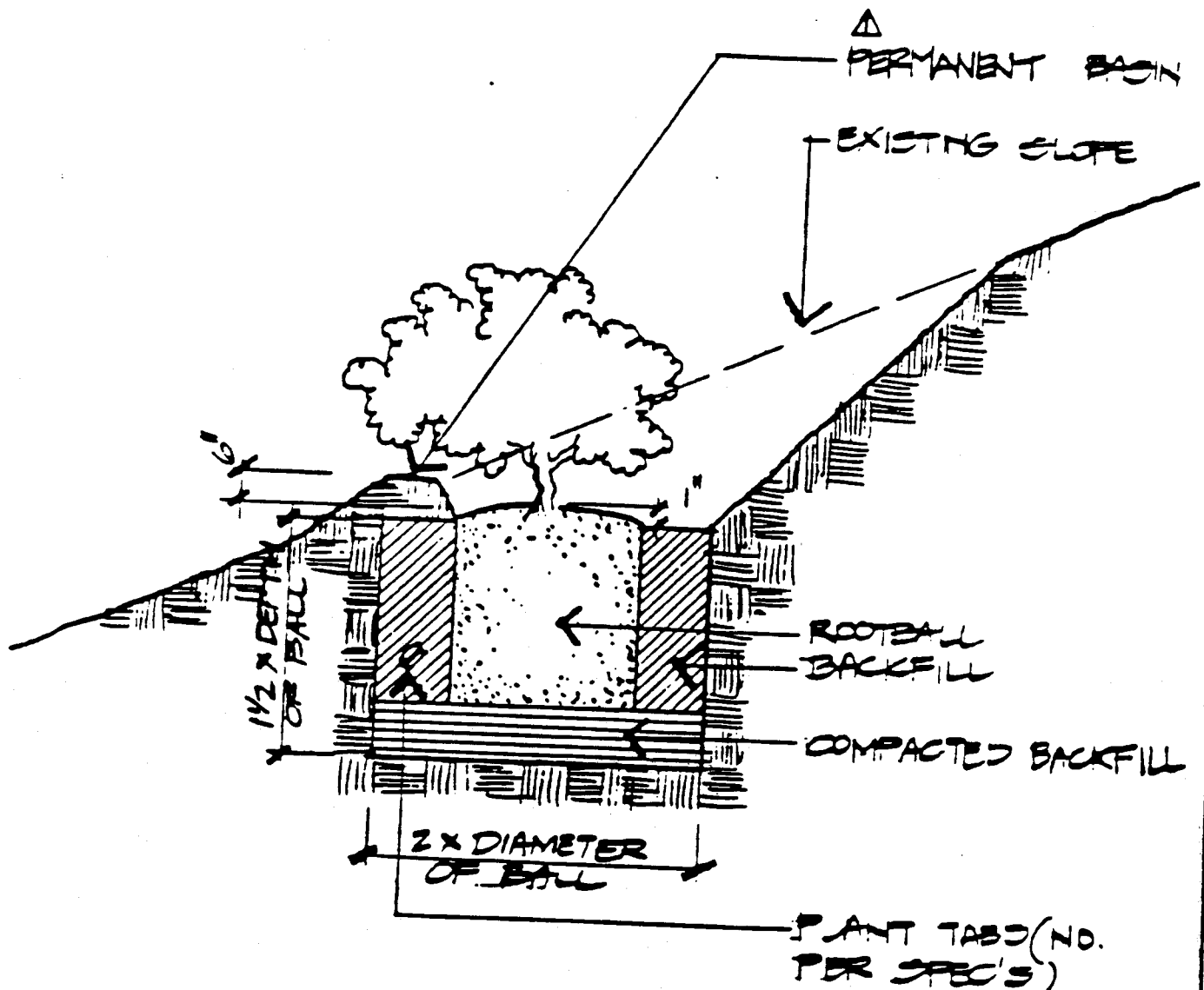
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SHRUB PLANTING (SLOPE)

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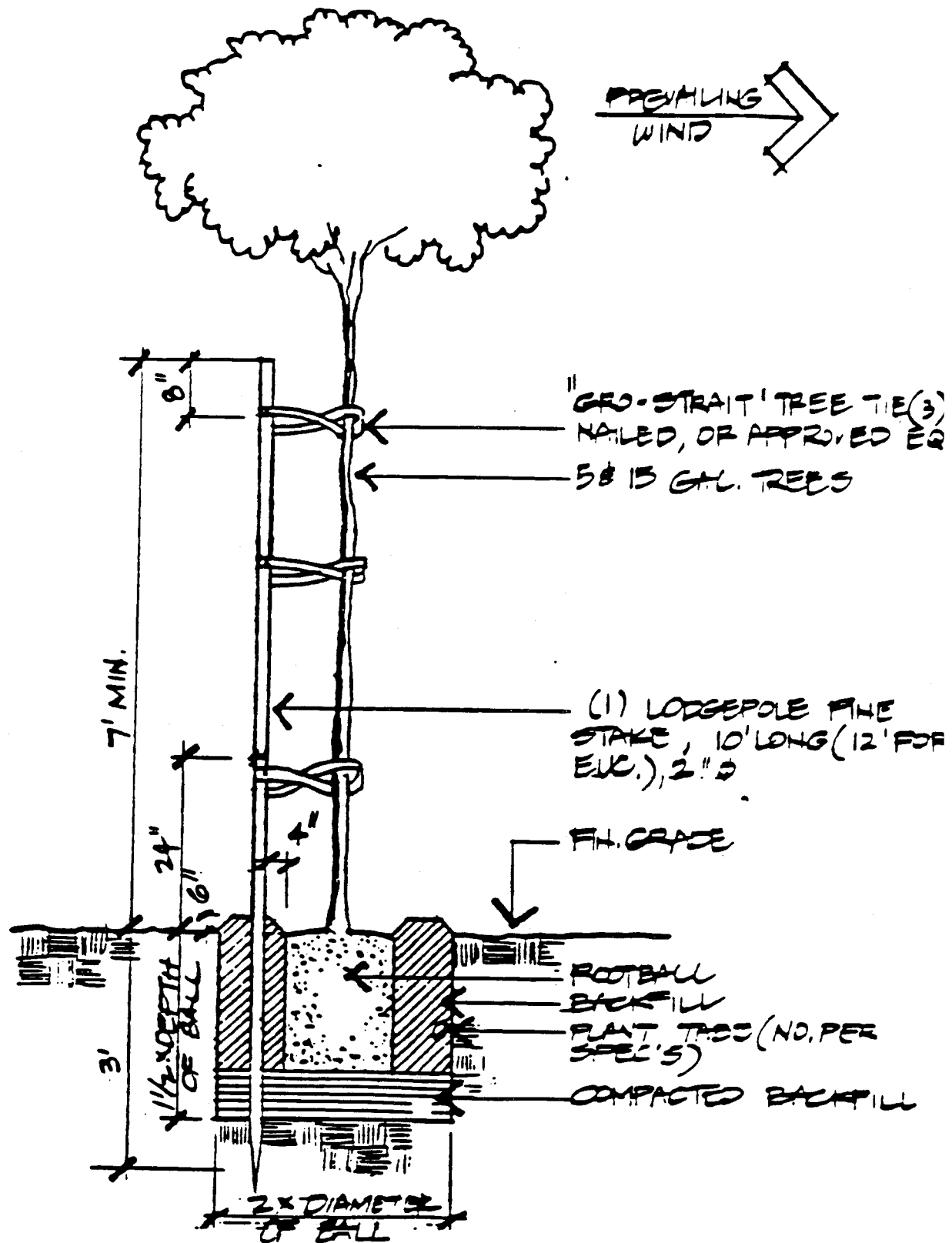
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TREE PLANTING

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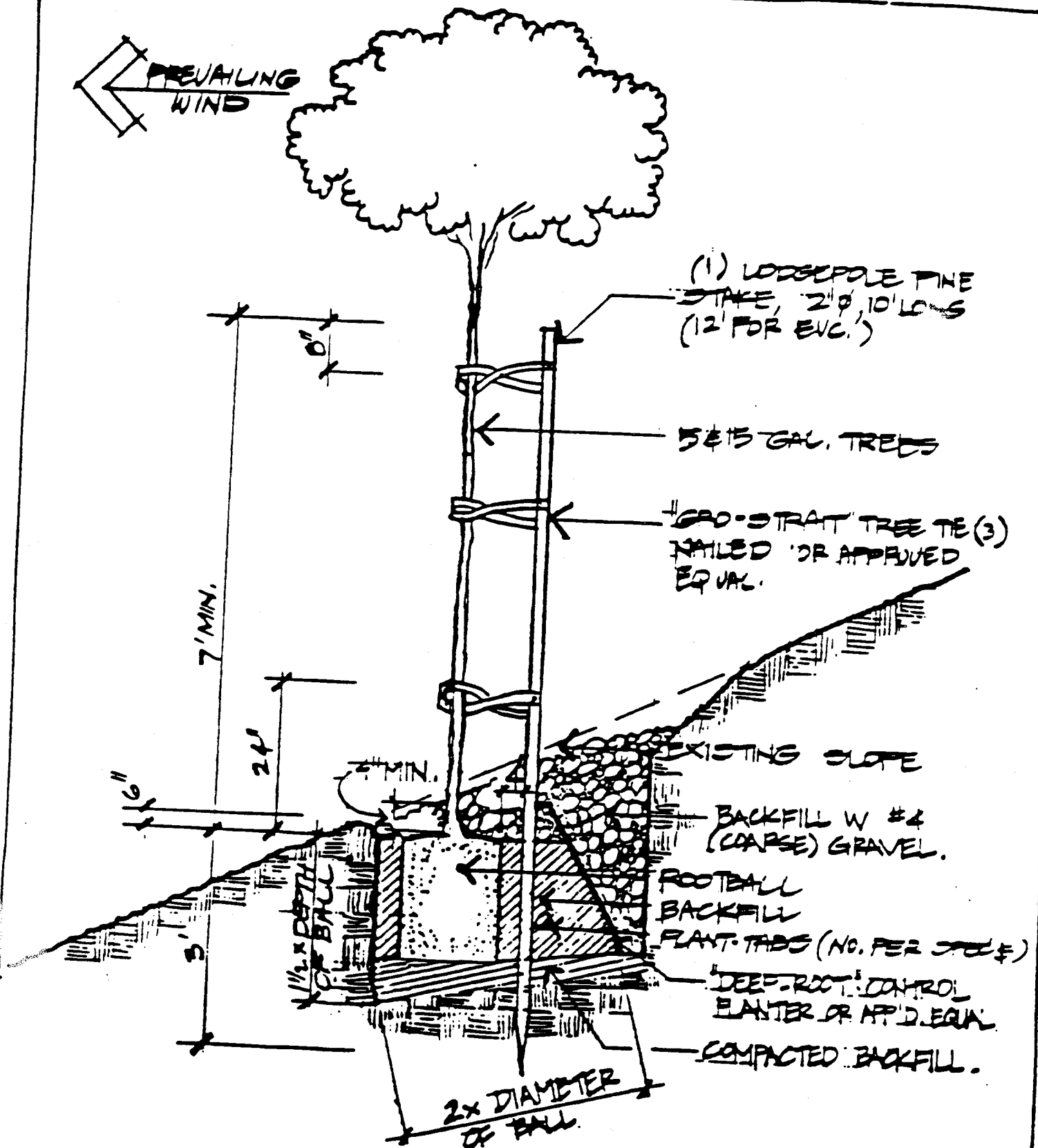
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city of oceanside

TREE PLANTING (SLOPE) w/DEEP ROOT BARRIER

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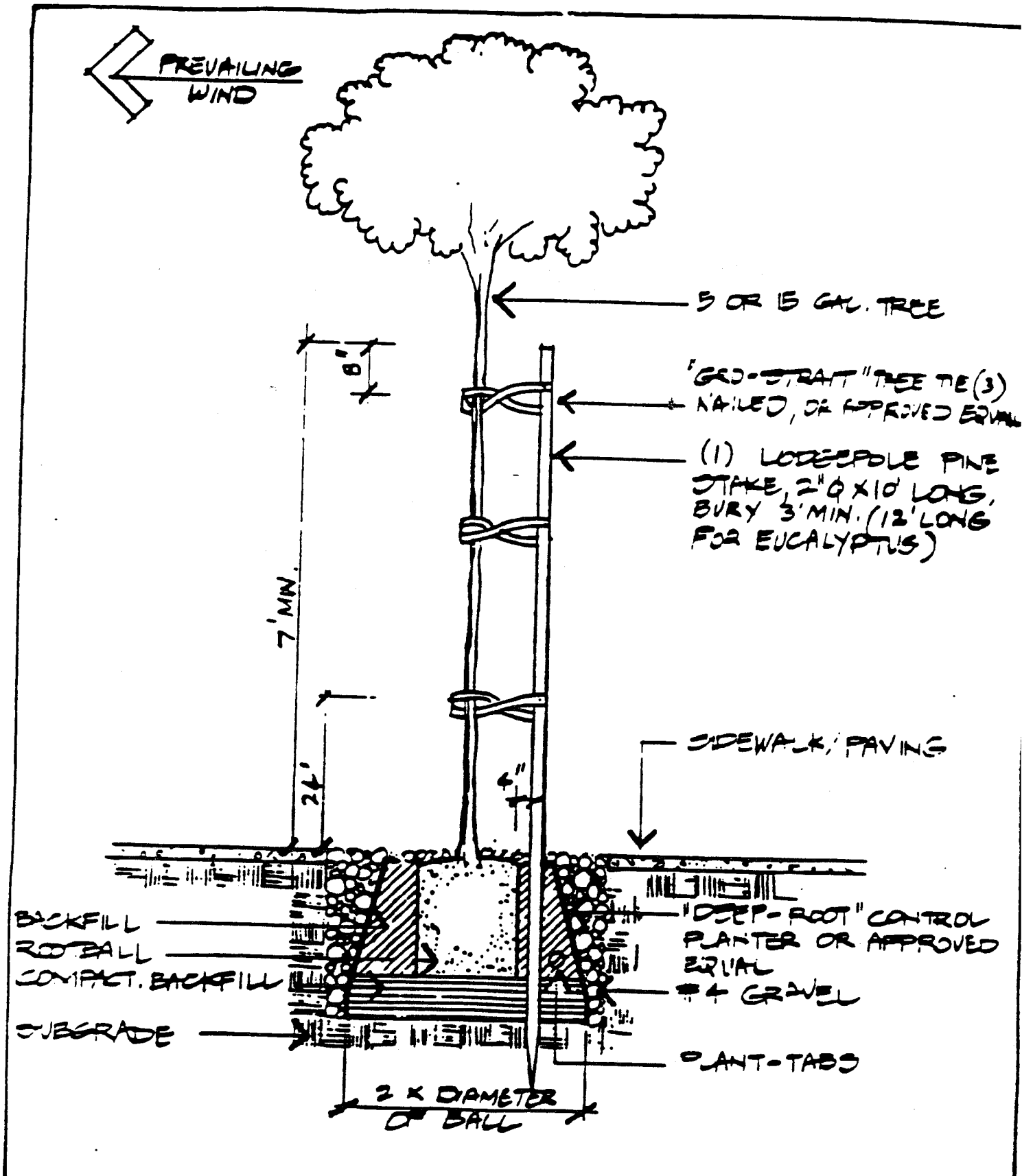
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TREE PLANTING (TREEWELL)

revisions

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211

APPROVED BY:

CITY ENGINEER

DATE



Revision	By	Approved	Date
211A		<i>[Signature]</i>	11-11-97

**STREET TREE PLANTING / STAKING
15 GALLON & 24" BOX CONTAINER**

SHEET 1 OF 2 SHEETS
CITY ENGINEER 2/10/07 Date
STANDARD
DRAWING NO. 211A

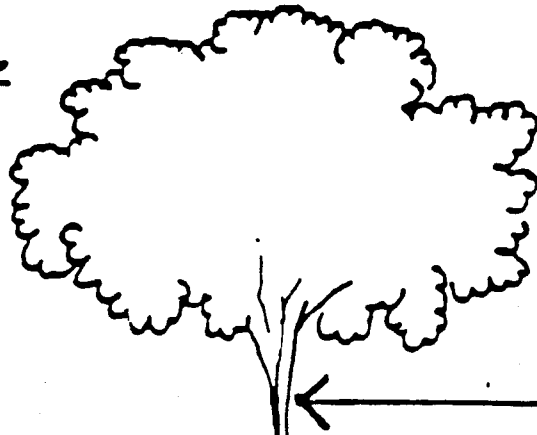
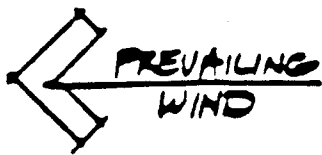
GENERAL NOTES

1. APPROVED TREE TIES.
2. 2" DIA. x 10' LODGE POLE PINE STAKE (2 TYP.)
KEEP CLEAR OF ROOTBALL.
3. 3" MIN. DEPTH WATER BASIN.
PRIOR TO END OF CONTRACTOR'S MAINTENANCE PERIOD,
REMOVE BASIN. PROVIDE SMOOTH TRANSITION TO TOP
OF MOUND.
4. FINISHED GRADE.
5. AMENDED BACKFILL. SEE AGRICULTURAL SOILS REPORT
AND RECOMMENDATIONS.
6. PLANT TAB. INSTALL PER MANUFACTURERS SPECIFICATIONS.
7. EXISTING SOIL.
8. SCARIFY SIDES AND BOTTOM OF PLANTING PIT.
9. ARBOR-GUARD TRUNK PROTECTOR FOR USE IN TURF AREAS.
10. SET TOP OF ROOTBALL 3" - 6" ABOVE FINISH GRADE
AND SLOPE FOR DRAINAGE. MINIMUM 2% CROSSFALL.
11. INSTALL APPROVED ROOTBARRIER WITHIN 10' OF ANY HARDSCAPE,
ASPHALT OR PAVEMENT. A MIN. 24" DEPTH AND 10
LINEAR FEET INSIDE EDGE OF HARDSCAPE.
12. COMPACTED NATIVE SOIL.
13. SIDEWALK OR HARDSCAPE EDGE.
14. IN HEAVY CLAY SOILS INSTALL A 4" PERFORATED
PVC DRAIN PIPE OR CORRUGATED PERFORATED PIPE WITH DRAIN
CAP. WRAP PIPE WITH DRAIN SOCK OR MIRAFI CLOTH. INSTALL ONE
"BREATHING TUBE" PER EVERY 15 GALLON STREET TREE, AND TWO
"BREATHING TUBES" PER EVERY 24" BOXED STREET TREE.
15. PREPARED BACKFILL SOIL.
16. 3/8" PEA GRAVEL SUMP.

NOTE: MAINTAIN TURF OR GROUND COVER AT A RADIUS 12"
AWAY FROM TREE TRUNK.

ACAD FNAME: TREESK2

Revision	By	Approved	Date	CITY OF OCEANSIDE	SHEET 2 OF 2 SHEETS
211A					
				TREE PLANTING / STAKING 15 GALLON	CITY ENGINEER 2/10/97 Date
					STANDARD
					DRAWING NO. 211A



5 OR 15 GAL. TREE

100 STRUT TREE TIE (3)
STAILED, OR APPROVED EQUIV.

(1) LODGEPOLE PINE
STAKE, 2" Ø X 10' LONG,
BURY - 3' MIN. (12' LONG
FOR EUCALYPTUS)

7' MIN.

MIN. 4" LAYER OF
COARSE GRAVEL

SIDEWALK/PAVING

1' DEEP-ROOT CONTROL
PLANTER OR APPROVED
EQUIV.

4" GRAVEL

PLANT-TABS

NOTE:

SUBSURFACE PLANTER MAY OR
MAY NOT BE REQUIRED, AS

DIRECTED BY: CITY LANDSCAPE ARCHITECT

city of oceanside

standard

TREE PLANTING (TREEWELL)
IN SLOPING SIDEWALK

revisions

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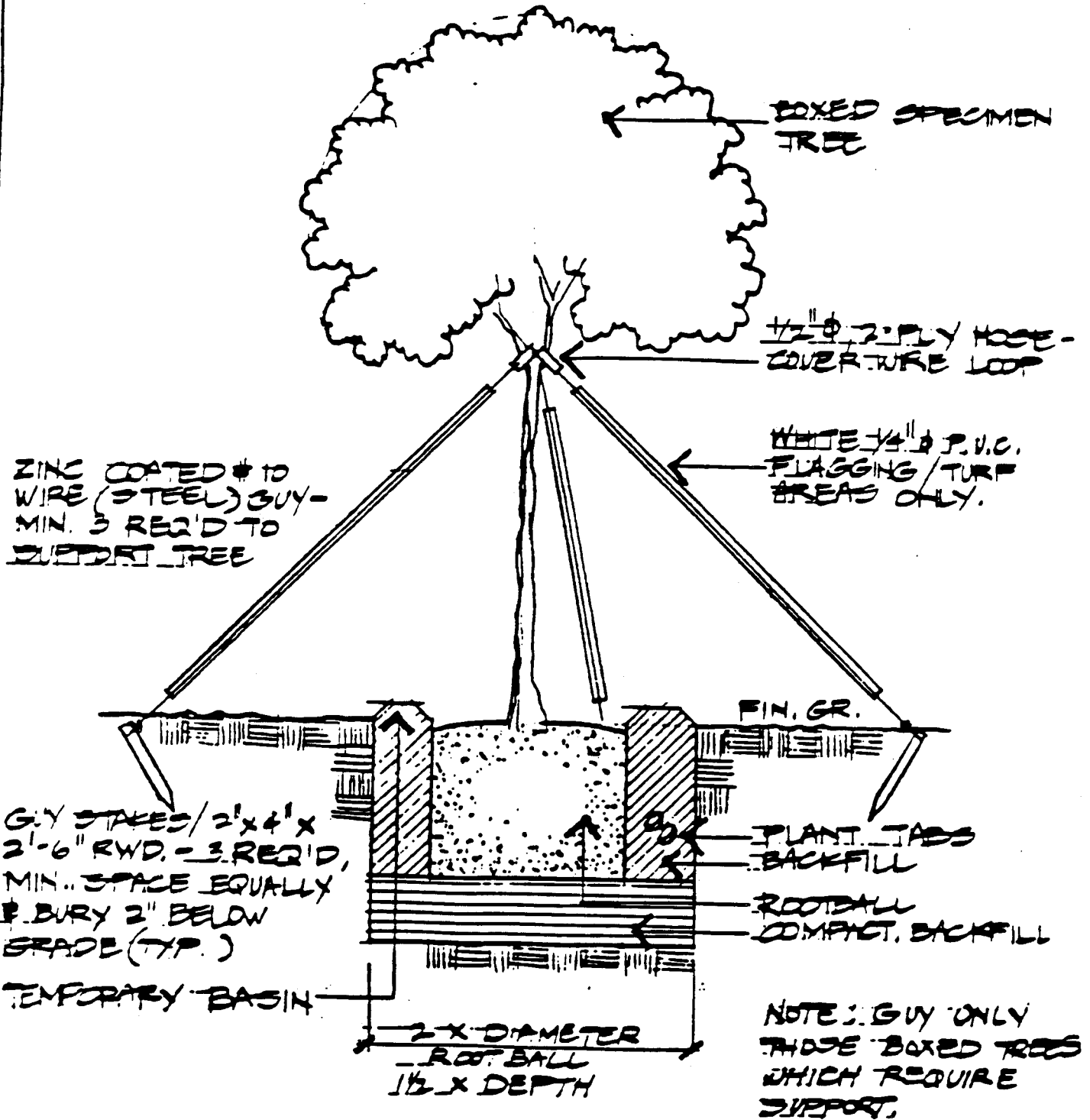
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APPROVED BY:

CITY ENGINEER

DATE



city of oceanside

TREE GUYING

APPROVED BY: [Signature]

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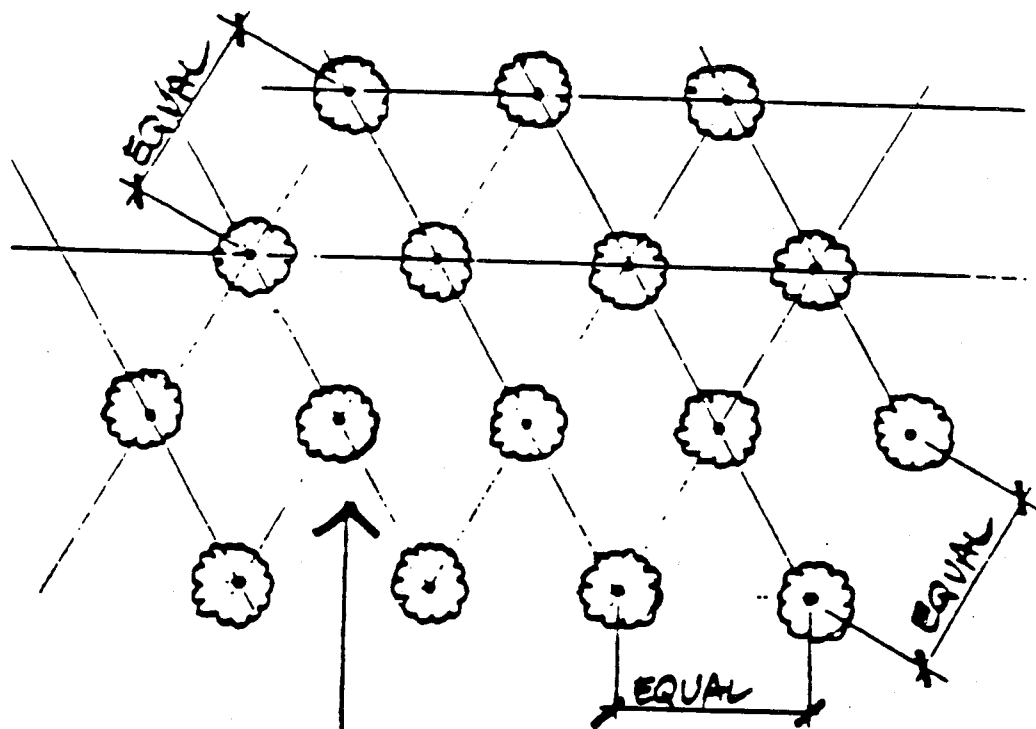
CITY ENGINEER

DATE

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ALL GROUND COVER TO BE
PLANTED @ = SPACING
(TRIANGULAR) PER O.C. SPACING
ON PLANS

city of oceanside

GROUND COVER SPACING

revisions

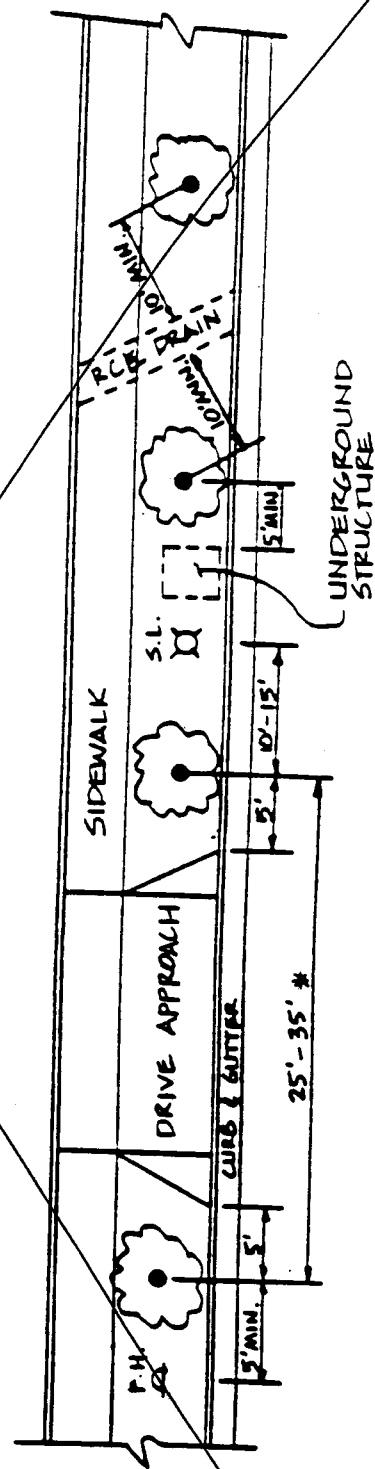
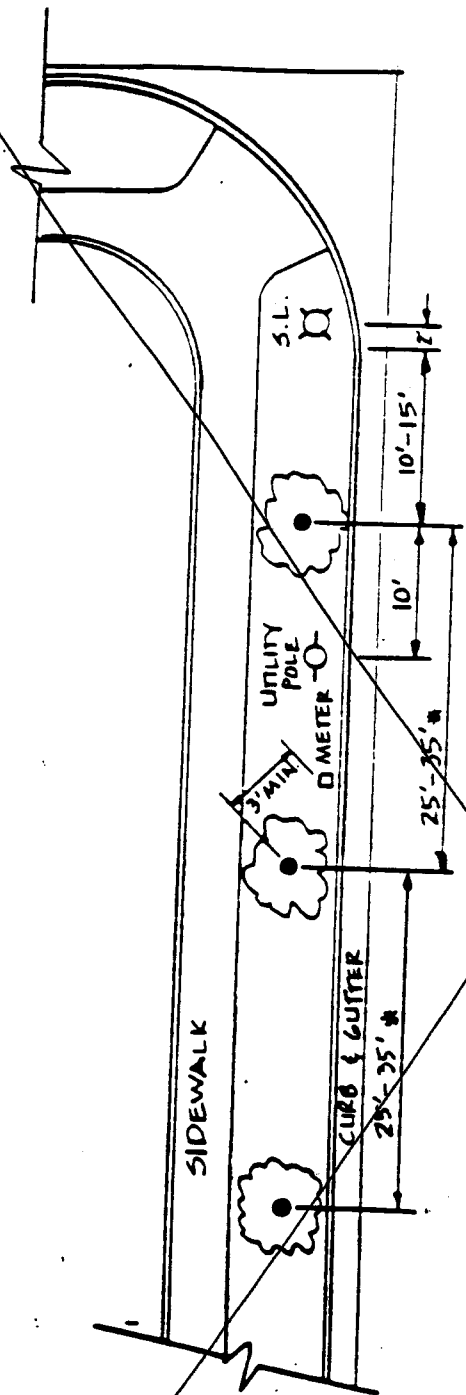
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CITY ENGINEER

DATE



* SEE TREE LIST FOR PROPER SPACING

city of oceanside

STREET TREE PLACEMENT

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4.3.84

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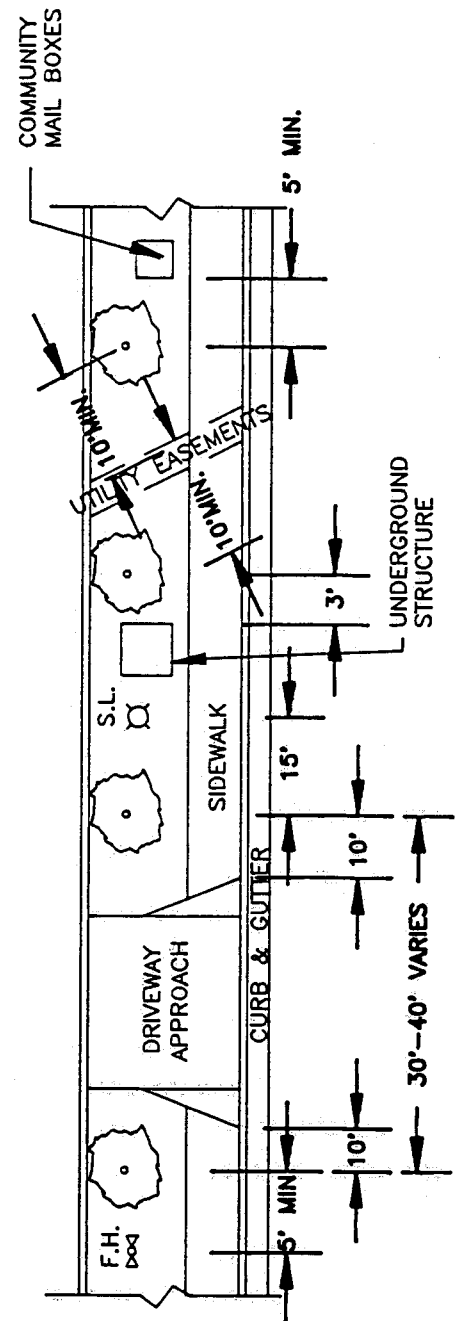
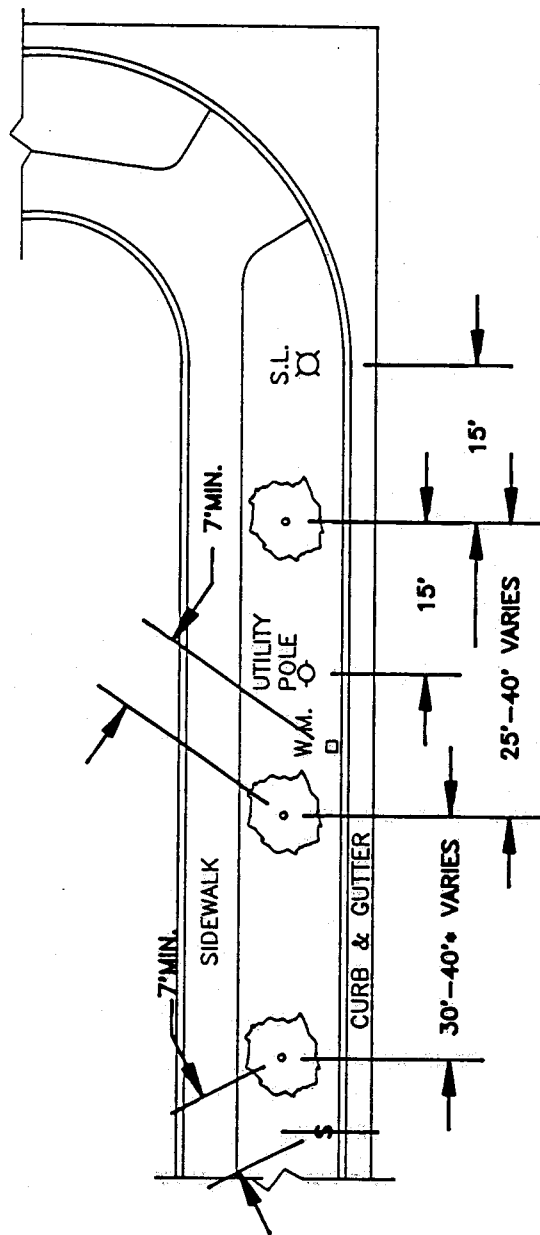
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APPROVED BY:

CITY ENGINEER

DATE

27 June '88



ACAD FRAME: 215R

Revision	By	Approved	Date
215A		<i>[Signature]</i>	11-11-97

CITY OF OCEANSIDE

STREET TREE PLACEMENT

SHEET 1 OF 2 SHEETS
[Signature] 11-11-97
 CITY ENGINEER Date
 STANDARD
 DRAWING NO. 215

STREET TREES AND OTHER TREES SHALL BE SPACED:

3 FEET FROM TRANSFORMERS, CABLE, AND DOUBLE CHECK DETECTORS

5 FEET FROM MAILBOXES

5 FEET FROM FIRE HYDRANTS (ALL SIDES)

7 FEET FROM CENTERLINE OF ALL UTILITY LINES (WITHOUT EASEMENT)
(SEWER, WATER, AND STORM DRAINS)

10 FEET FROM EASEMENT BOUNDARIES
(SEWER, WATER, STORM DRAINS, ACCESS, OR OTHER UTILITIES)

10 FEET FROM DRIVEWAYS (UNLESS A LINE OF SIGHT IS DETERMINED
BY THE TRAFFIC SECTION TO BE OTHERWISE)

15 FEET FROM STREET LIGHTS AND OTHER UTILITY POLES

LINES OF SIGHT AT ARTERIALS, COLLECTOR, AND LOCAL STREETS SHALL
BE REVIEWED AND DETERMINED BY THE TRAFFIC ENGINEER.

ACAD FNAME: 215A

Revision	By	Approved	Date	CITY OF OCEANSIDE	SHEET 2 OF 2 SHEETS <i>John Wiley 11-11-87</i>
				STREET TREE AND TREE PLACEMENT	STANDARD DRAWING NO. 215A

DEFINITION OF TERMS

DEFINITION OF TERMS

- Backfill - That soil which is replaced in a hole after excavation and placement of irrigation lines or plant materials.
- Drought-Tolerant Plants - Plants from California and other dry areas that can survive on very little water such as that which falls in Southern California in normal rainfall years.
- Engineer of Work - This term shall refer to the responsible designing professional of the respective project.
- Erosion - The transportation of soil particles, or mass movement of soil (mass wasting), by water, wind, front leaving, or mechanical means.
- Landscaping - A combination of trees, shrubs, perennials, ground covers and artifacts, arranged in such a manner as to effect a design that follows the principles of this document.
- Native Plants - Plants that are indigenous to the State of California or the Southwestern United States and Northwestern Mexico.
- Naturalized Plants - Plants introduced to Southern California from other places that have become established in wildlands without cultivation.
- Ornamental Plants - Plants cultivated in this area for landscaping purposes.
- Parkway - That area of a public street that is between the curb and sidewalk or between the sidewalk and the property line of the adjacent property owner, which is used for planting purposes.
- Slope - An inclined piece of land (5) five feet or higher vertical rise and 5:1 or steeper.
- Street Trees - Are trees planted in the public right of way along City streets for beautification and benefit of the general public.
- Topsoil - Soil which is within the A-1 horizon of a soil profile, containing organic matter, nutrients, and the micro-organisms necessary for normal plant growth.
- Wildlife - Indigenous or naturalized bird, reptilian, mammalian, fish, or invertebrate life found in the out of doors.
- Water Conservation - Proper water management procedures, including design as well as maintenance procedures by using drip irrigation, drought tolerant plant materials.

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ATTACHMENT

CITY OF OCEANSIDE
GUIDELINES AND SPECIFICATIONS FOR
LANDSCAPE DEVELOPMENT

ADDENDA

ADOPTED BY CITY COUNCIL
NOVEMBER 6, 1991

RESOLUTION NO. R 91-286

REVISED INITIATIVES
AND STANDARDS - NOVEMBER 5, 1997

M E M O R A N D U M

DATE: February 3, 1992

TO: Landscape Architects, Development Community

FROM: T. Brad Therrien, Assistant City Engineer *TBT*

SUBJECT: Revised Edition of The City of Oceanside Guidelines and Specifications For Landscape Development

The Engineering Department has recently completed Addenda to the 1985 City of Oceanside Guidelines and Specifications For Landscape Development (Landscape Manual). The Addenda to the Landscape Manual are essential in keeping up with current standards in the landscape industry. Modifying the standards as presented in the Addenda will aid developers and landscape architects in the preparation and processing of design plans.

The Addenda to the Landscape Manual is available at the Engineering Counter and may be purchased for a cost of \$5.00. The Landscape Manual and Addenda are available at the Engineering Counter and may be purchased for a cost of \$35.00.

TBT/DBJ/alw



CITY OF OCEANSIDE

Engineering Department

P O L I C Y M E M O R A N D U M

DATE: June 5, 1992
TO: Development Community
FROM: Ronald A. Beckman, City Engineer
SUBJECT: Landscape Plan "As-Built" Certifications

Effective July 1, 1992, an "As-Built" certification will be required on all new and in-process landscape plans.

The certification will be included on all landscape plans in an effort to reduce the staff processing time necessary for bond releases. Once the certification is provided, a cursory review by staff will be performed. A complete review of the plans to verify that the as-built information is included on the plans will be the responsibility of the project landscape architect. The certification shall be completed with the as-built submittal and the request for bond release.

The unsigned certification shall appear on the title sheet of all landscape plans which have not been approved as of July 1, 1992. The certification may be added to landscape plans approved prior to July 1, 1992, if requested by the landscape architect of record.

The attached certification shall appear on all landscape plans approved after July 1, 1992.

Ronald A. Beckman
City Engineer

RAB:TW:DBJ:mc

City of Oceanside Policy Memorandum
Landscape Plan "As-Built" Certification
June 5, 1992
Page 2

**LANDSCAPE PLANS
AS-BUILT CERTIFICATION**

I hereby certify that all landscaping and irrigation have been constructed under the observation of a qualified Landscape Architect and in accordance with the recommendations and specifications set forth in the project agricultural soil report, the City Water Conservation Ordinance, The City of Oceanside Guidelines and Specification for Landscape Development, and any other applicable ordinances and requirements.

I hereby certify that these landscape plans reflect an accurate and correct representation of the As-built conditions.

Landscape Architect of Record: _____

Date: _____

Professional Seal:

RESOLUTION NO. R91-286

A RESOLUTION OF THE CITY COUNCIL
OF THE CITY OF OCEANSIDE ADOPTING ATTACHMENTS 1-9
TO THE 1985 REVISED EDITION OF THE CITY OF OCEANSIDE
GUIDELINES AND SPECIFICATIONS FOR LANDSCAPE DEVELOPMENT

WHEREAS, it is in the best interest of the City of Oceanside to establish and update standard preparation guidelines and specifications and processing procedures for landscape design plans to insure uniform requirements for public works and subdivision development within the City;

WHEREAS, the City Engineer has recommended that the City adopt the addenda (Attachments 1-9) to the 1985 Revised Edition of the City of Oceanside Guidelines and Specifications for Landscape Development as the standard for the City of Oceanside;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Oceanside as follows:

1. Attachments 1-9 to the 1985 Revised Edition of the City of Oceanside Guidelines and Specifications for Landscape Development, attached hereto and incorporated herein by reference, hereby are adopted as standard preparation guidelines, specifications, and processing procedures for public works and subdivision development within the City of Oceanside;

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RESOLUTION NO. R97-158

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF
OCEANSIDE ADOPTING CERTAIN REVISIONS TO THE 1985
EDITION OF THE CITY OF OCEANSIDE GUIDELINES AND
SPECIFICATIONS FOR LANDSCAPE DEVELOPMENT

WHEREAS, it is in the best interest of the City of Oceanside to establish and update standard preparation guidelines and specifications and processing procedures for landscape design plans to insure uniform requirements for public works and subdivision development within the City;

WHEREAS, the City Engineer has recommended that the City Council adopt a resolution incorporating certain revisions to the *1985 Edition of the City of Oceanside Guidelines and Specifications for Landscape Development* as the standard for the City of Oceanside.

NOW, THEREFORE, the City Council of the City of Oceanside DOES RESOLVE as follows:

SECTION 1. Attachments 1-14, attached hereto and incorporated herein by reference, are hereby incorporated into the *1985 Edition of the City of Oceanside Guidelines and Specifications for Landscape Development* as standard preparation guidelines, specifications and processing procedures for public works and subdivision development within the City of Oceanside.

SECTION 2. Any provisions of the *1985 Edition of the City of Oceanside Guidelines and Specifications for Landscape Development* which are inconsistent with the provisions of the attached revisions are hereby superseded and of no force or legal effect.

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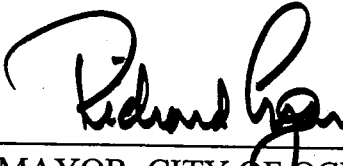
1 PASSED AND ADOPTED by the City Council of the City of Oceanside, California, this
2 5th day of November, 1997, by the following vote

3 AYES: LYON, HARDING, JOHNSON, McCAULEY, O'HARRA

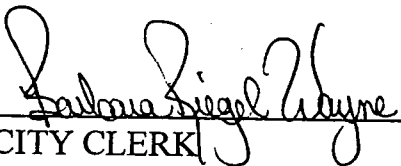
4 NAYES: NONE

5 ABSENT: NONE

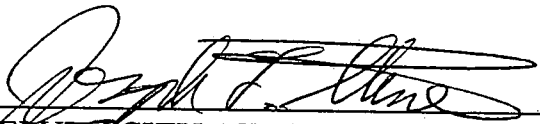
6 ABSTAIN: NONE

7 
8 MAYOR, CITY OF OCEANSIDE

9 ATTEST:

10 
11 CITY CLERK

13 APPROVED AS TO FORM:

14 
15 DEPUTY CITY ATTORNEY
16 ASSISTANT

26 [Resolution ADOPTING CERTAIN REVISIONS TO THE 1985 Edition of the City of
27 Oceanside Guidelines and Specifications for Landscape Development]

2. Plan Check Procedures:

a. Initial Landscape Plan Review Submittal

In an effort to coordinate proposed improvements, it is essential that the landscape plans match the grading and improvement plans.

One set of preliminary and/or precise grading plans and one set of improvement plans shall be submitted with three sets of landscape plans on first-time submittals.

All landscape plans for Landscape Maintenance Assessment Districts shall be a separate submittal. A separate cost estimate shall be submitted (including items listed below), fees paid and bonds in place prior to plan approval and landscape installation.

The following are required for first-time submittal for landscape plan check:

three(3) sets of landscape plans (blueines); {some projects may require additional sets}.

one(1) set of resolutions (Conditions of Approval)

one(1) set of irrigation calculations

one(1) set of agricultural soils report analysis from a certified plant and soils lab

one(1) set of cost estimate

submittal of appropriate plan check deposit

All plans are to be drawn on "D" sheets (24" x 36"), with an official City of Oceanside title block at the lower right-hand corner.

All print (typewritten or lettering) shall be 1/8 inch or larger.

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

All plans are to be checked by the Engineer of Work for consistency, accuracy, clarity and conformity with City Standard Specifications, standard drawings and design criteria before submission for approval. If the plans are found to be incomplete during initial review by the City, they will be returned unchecked to the Engineer of Work for completion prior to re-submittal.

3. Landscape Plan Procedure for Executing Mylars, Construction Changes and As-Builts

When the plan check process is complete, the City will request submittal of original mylar (minimum 4 mil. thickness) sheets for signature approval. These mylars shall contain the Landscape Architect's wet stamped professional seal and date on each sheet; wet signature on the Declaration of Work; and wet signature of all appropriate officials on the title sheet.

Once these mylars are approved and signed by the appropriate City officials, the particular plan becomes the property of the City of Oceanside. The Landscape Architect shall retain the original mylar set to use for any future construction changes (revisions) or As-Builts. The City will keep a photo mylar on file.

To request a construction change, submit three(3) sets of blueines to the City Engineer. Proposed changes shall be marked in red ink or identified with delta, each change clouded, and labeled in an approved change block on each sheet. Once approved, all construction changes shall be transferred onto the original mylars. The title sheet also must contain a signature construction change block for the City Engineer and Director of Planning to sign. After the City Officials have signed the revisions, the City will make a new photo mylar copy of the revised sheet(s), which will replace the initial photo mylar copy on file. The original again will be returned to the Engineer of Work/Landscape Architect.

Prior to City acceptance of all landscape improvements (after one year of maintenance) and prior to request for bond release, the owner/developer shall provide the City with two(2) marked-up sets of blueine "As-Built" changes. Once reviewed by the appropriate City Landscape Inspector, these prints shall be returned to the Landscape Architect and all annotations shall be transferred onto the original mylar set. The word "As-Built" shall be wet inked, dated, and wet signed by the Landscape Architect on each mylar sheet and then returned to the City prior to project acceptance and bond release.

O. Electric Control Valves

(10) MOISTURE CONTROL COMPUTER SPECIFICATIONS FOR LANDSCAPE MAINTENANCE ASSESSMENT DISTRICTS

The system must control irrigation taking into account measured moisture level, previous history and a user-determined moisture level setting.

There must be a capability to use standard wiring for sensors to control valve operation.

There must be programmable overrides of the moisture sensing function which allow at least seven days without moisture sensing and then automatically return to the normal program.

When the moisture sensing feature indicates that sufficient water is applied for one station, the system must skip automatically to the next station.

There must be a capability to display the last 30 days irrigation history both on the display and by computer printout using an optional IBM compatible computer.

The system must have the capability of reading a flow sensor and turning off valves and skipping to the next valve if there is excess flow without requiring the user to enter flow rates for each station. The system also must have the capability of shutting off the mainline via a master control valve.

There must be at least two programs and at least three start times per program.

The system must have the capability of monitoring and adjusting moisture level set points at the controller with no adjusting being done at the valve box.

Sensor Type

The moisture sensor shall be of the point contact, volume saturation type. The sensing probes shall be stainless steel and require no maintenance or calibration for the life of the system. The sensor shall include data transmission circuitry with the entire unit being encased in epoxy. The sensing unit shall be wired in parallel with station solenoids using two pieces of number 14 direct burial wire.

N. Drip Irrigation Systems

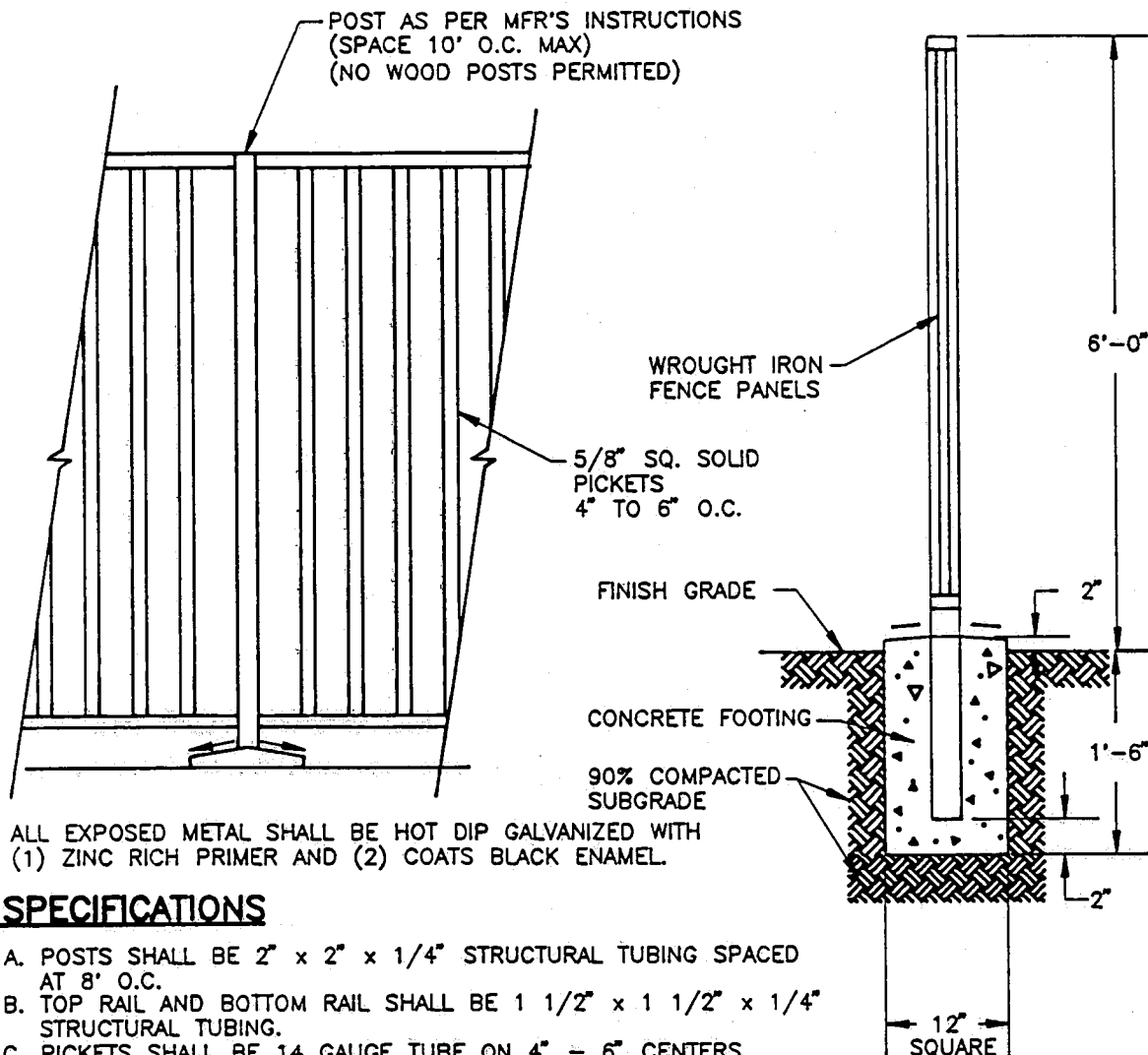
1. All components shall be of non-corrosive materials.
2. All lateral piping shall be Class 200 PVC and installed below finish grade of the planting area. Emitter distribution tubing in front yard landscape shall be covered with a minimum of three(3) inches of mulch or bark. Slope areas may have emitters and tubing on grade. Landscape Maintenance Assessment Districts (LMAD) and public rights-of-way shall bury tubing a minimum of four(4) inches below grade and install emitters on Schedule 80 risers in emitter boxes (excluding slopes). In highly visible vandal-prone areas, emitters shall be placed in emitter boxes and tubing shall be buried.
3. System equipment shall be installed below grade in meter boxes.
4. Separate emitters shall be of self flushing, pressure compensating design. Flow rates shall be appropriate for the soil conditions and plant water requirements.
5. Drip tubing systems with embedded or integral bi-wall small orifice-type emitters shall be pressure compensating to allow a maximum emission rate differential of no more than five percent along the entire length of tubing.
6. The design of drip systems shall provide a balanced water supply to plant materials of different sizes irrigated by a common lateral line.
7. All drip systems shall be adequately filtered and regulated per the manufacturer's recommended design parameters.
8. All systems shall be capable of automatically flushing out accumulated particulate matter. System designs shall provide a means for servicing such flushing requirements with a minimum of erosion or disruption to the surrounding landscape. Automatic dripper end flushvalve assembly is required at the end of each line.

9. Pressure regulating devices shall be included at critical points in the design of the irrigation system. The critical points for the pressure regulating devices are at the pressure compensating valves and/or at the filtration system itself or as deemed necessary by the Landscape Architect.
10. Systems shall be designed for the mature size of plant material to be irrigated, including the eventual rooting pattern of the planting. A minimum of 50 percent of the root structure of the plant material is to be irrigated at all stages of growth, up to and including full mature size. All necessary equipment for mature plant size irrigation shall be installed initially. Future outlets for tubing shall be capped or otherwise sealed until needed.
11. Emitters shall be protected from soil or root incursion and easily accessible.
12. Pressure regulators, filters, and valves in front yard landscapes may be above grade. Pressure regulators, filters, and valves in commercial, subdivision (homeowner associations), LMAD, and public right-of-ways shall be in approved meter/valve boxes or above grade in an approved enclosure.
13. The use of distribution tubing and polyethylene tubing shall be kept to a minimum. Lateral lines shall consist of PVC pipe. All distribution tubing shall use tubing stakes and bug caps.

SPECIAL SYSTEMS

Special systems may be allowed at the discretion of the City Engineer.

All micro-spray systems shall be hard-piped.



ALL EXPOSED METAL SHALL BE HOT DIP GALVANIZED WITH
(1) ZINC RICH PRIMER AND (2) COATS BLACK ENAMEL.

SPECIFICATIONS

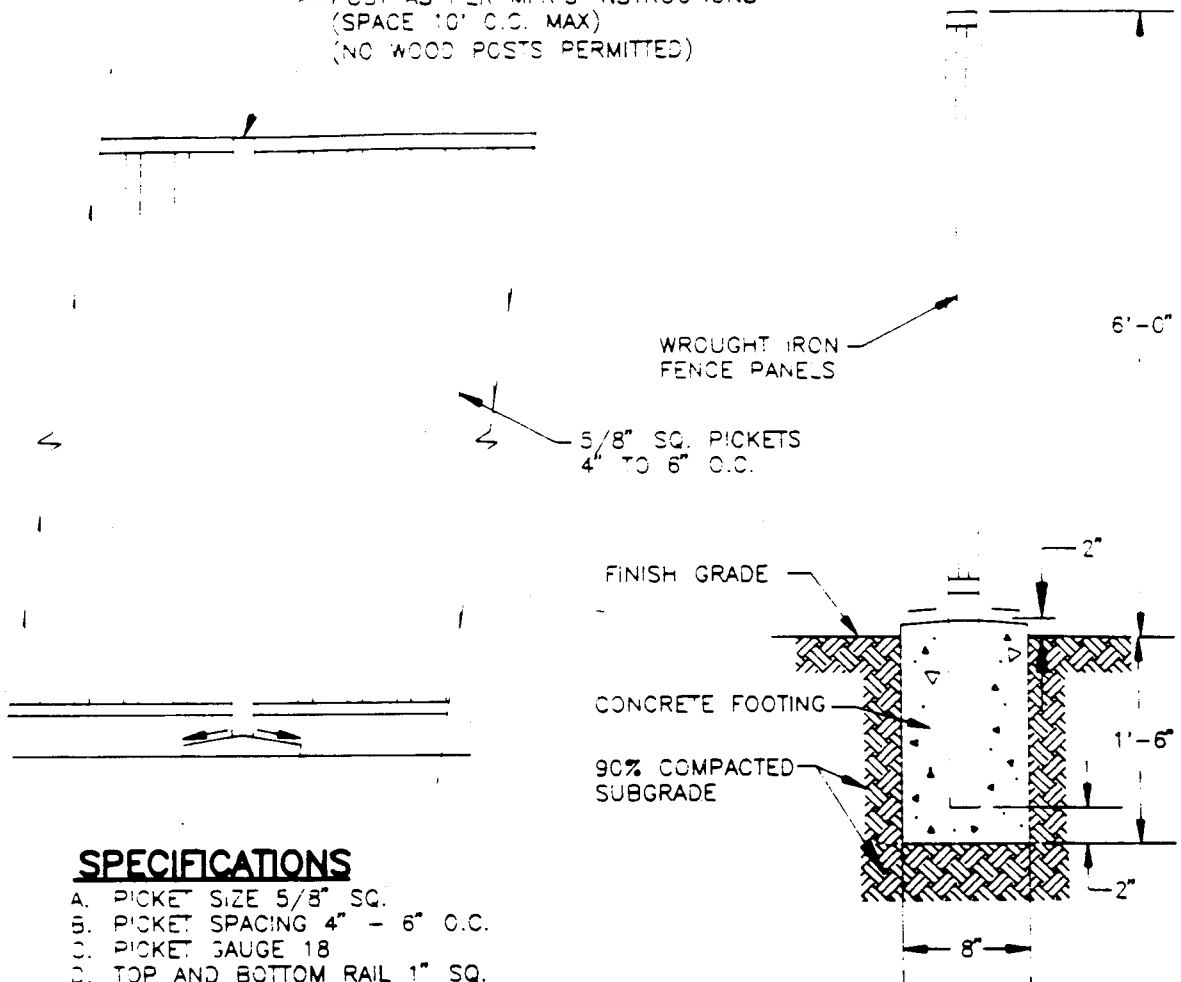
- A. POSTS SHALL BE 2" x 2" x 1/4" STRUCTURAL TUBING SPACED AT 8' O.C.
- B. TOP RAIL AND BOTTOM RAIL SHALL BE 1 1/2" x 1 1/2" x 1/4" STRUCTURAL TUBING.
- C. PICKETS SHALL BE 14 GAUGE TUBE ON 4" - 6" CENTERS.
- D. TOP RAIL, BOTTOM RAIL, AND PICKETS SHALL BE SHOP WELDED WITH 1/8" FILLET WELDS ALL SIDES (TYPICAL).
- E. POSTS SHALL BE INSTALLED IN 12" DIA. OR 12" SQUARE BY 20" DEEP FOOTINGS. THE TOP 2" OF THE FOOTING SHALL BE EXPOSED ABOVE FINISHED GRADE AND TROWLED TO DRAIN.
- F. FIELD WELD FENCE PANELS TO POSTS WITH 1/8" FILLET WELD ALL SIDES (TYPICAL). FIELD WELDS SHALL BE THOROUGHLY CLEANED AND COATED WITH ZINC PRIMER PRIOR TO PAINTING.
- G. FOR SLOPED INSTALLATIONS, POSTS AND PICKETS SHALL ALWAYS REMAIN VERTICAL. TOP AND BOTTOM RAILS SHALL RUN PARALLEL TO SLOPE.

NOTE

ACKNOWLEDGEMENT IN WRITING BY THE FENCE MANUFACTURER SHALL BE PROVIDED TO THE CITY LANDSCAPE INSPECTOR PRIOR TO INSTALLATION OF ANY SECTIONS OF THE WROUGHT IRON FENCE STATING THAT THE MANUFACTURING PROCESS DESCRIBED ABOVE WAS APPLIED.

Revision	By	Approved	Date	CITY OF OCEANSIDE	
				6' WROUGHT IRON FENCE HOT DIPPED GALVANIZED	<i>John Weiss 11-11-97</i>
					CITY ENGINEER Date
					STANDARD
					DRAWING NO. 140

— POST AS PER MFR'S INSTRUCTIONS
(SPACE 10' O.C. MAX)
(NO WOOD POSTS PERMITTED)



SPECIFICATIONS

- A. PICKET SIZE 5/8" SQ.
- B. PICKET SPACING 4" - 6" O.C.
- C. PICKET GAUGE 18
- D. TOP AND BOTTOM RAIL 1" SQ.
- E. TOP AND BOTTOM RAIL GAUGE 16
- F. POST SIZE 1 1/2" SQ.
- G. POST GAUGE 16
- H. POST SET IN P.C.C. CONCRETE FOOTING. TOP OF FOOTING 2" ABOVE FINISH GRADE.

WELDING/CLEANING:

COLD ROLLED TUBULAR STEEL TO BE MIG WELDED ALL 4 SIDES TO TOP & BOTTOM RAILS. PANEL HANDSCRUBBED WITH TRICHLOROTHANE III, RCFT-M-500 AND DIPPED INTO "BLUE GRIP" IRON PHOSPHATE ETCHING SOLUTION.

PAINTING/SEALING:

PANEL TO BE ELECTROSTATICALLY SPRAYED WITH 2 FULL COATS (2 MIL THICKNESS PER EACH COAT, TOTAL 4 MIL THICKNESS WET) OF ZINC-RICH METALHIDE PRIMER WITH RUST INHIBITIVE PIGMENTS FINAL COAT TO CONSIST OF PRO-LINE 1000 DELUXE HIGH GLOSS MARINE BLACK ENAMEL TOPCOAT (2 MIL THICKNESS WET).

- J. PRIOR TO ANY INSTALLATION, WRITTEN ACKNOWLEDGEMENT SHALL BE PROVIDED TO THE CITY LANDSCAPE INSPECTOR BY THE FENCE MANUFACTURER STATING THAT THE WROUGHT IRON FENCE WAS MANUFACTURED IN COMPLIANCE WITH THE ABOVE STATED SPECIFICATIONS.

Revision	By	Approved	Date

CITY OF OCEANSIDE

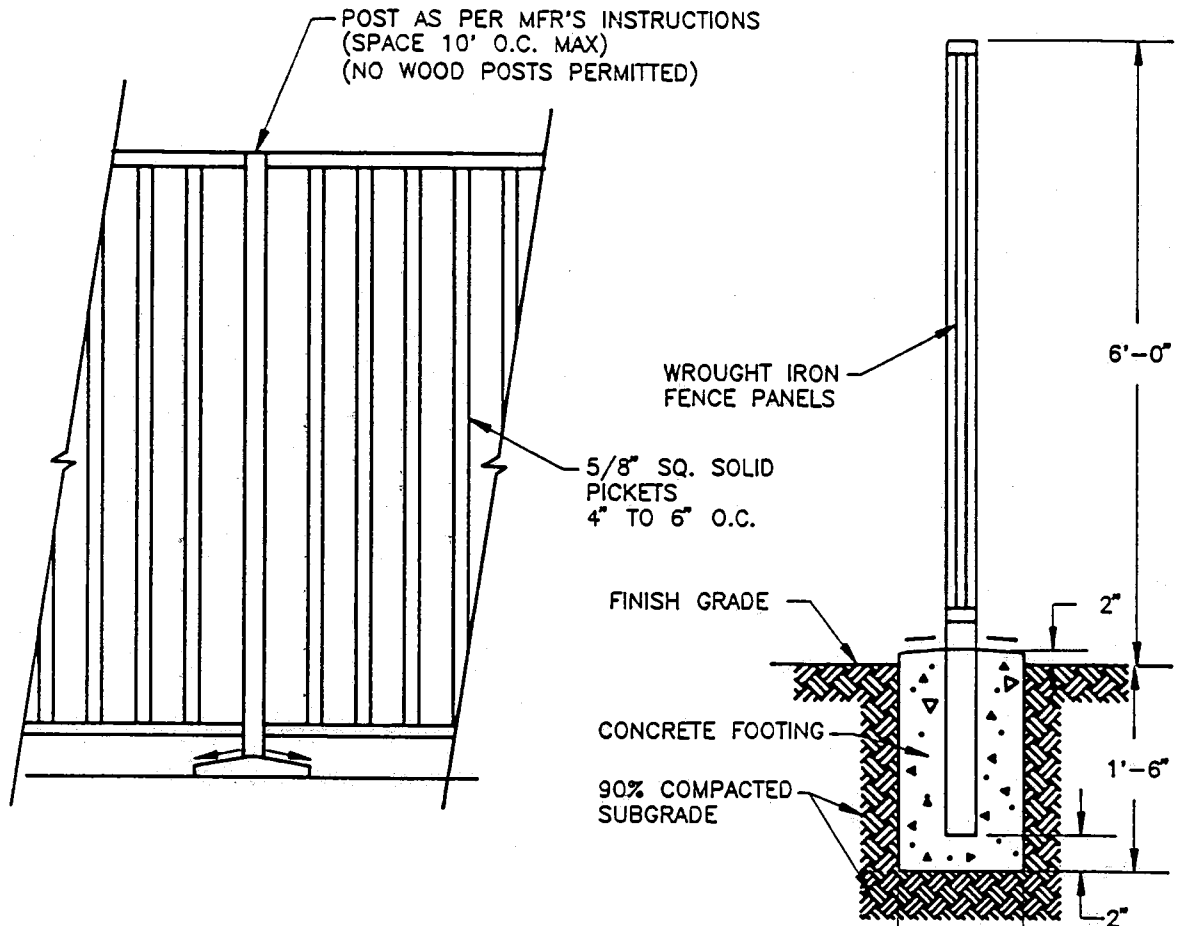
6' WROUGHT IRON FENCE

ZINC "METALHIDE"

Russell A. Bock *Yates*

CITY ENGINEER Date

STANDARD
DRAWING NO. 141



SPECIFICATIONS

- POSTS SHALL BE 2" x 2" x 1/4" STRUCTURAL TUBING SPACED AT 8' O.C.
- TOP RAIL AND BOTTOM RAIL SHALL BE 1 1/2" x 1 1/2" x 1/4" STRUCTURAL TUBING.
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NOTE

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SEE SHEET B FOR
ADDITIONAL SPECIFICATIONS.

Revision	By	Approved	Date	CITY OF OCEANSIDE 6' WROUGHT IRON FENCE ZINC THERMAL SPRAYING	SHEET 1 of 2 SHEETS <i>Chris. White 11-11-93</i>
					CITY ENGINEER Date
					STANDARD
					DRAWING NO. 141A

ZINC THERMAL SPRAYING SPECIFICATION FOR THE CITY OF OCEANSIDE, CALIFORNIA

REFERENCES:

AMERICAN WELDING SOCIETY C2.18.93
AMERICAN SOCIETY FOR TESTING AND MATERIALS B833-93
STEEL STRUCTURES PAINTING COUNCIL
COATING STANDARD GUIDE 23.00, JUNE 1, 1991

"A ZINC OR ZINC/ ALUMINUM ALLOY COATING MAY BE USED IN PLACE OF A GALVANIZED ZINC COATING. THIS COATING SHALL BE APPLIED BY ONE-WIRE FLAME, OR TWO-WIRE ARC THERMAL SPARY EQUIPMENT. PRIOR TO APPLICATION OF THE ZINC OR ZINC/ALUMINUM COATING, AN SSPC SP10, NEAR WHITE BLAST SHALL BE ESTABLISHED, WITH A 2-4 MIL ANCHOR TOOTH PROFILE. ROUND STEEL SHOT WILL NOT BE USED. THE SUBSTRATE MUST BE GREASE AND DUST FREE, PRIOR TO APPLICATION OF THE COATING. THE ZINC OR ZINC/ALUMINUM COATING THICKNESS CAN RANGE FORM 3 TO 8 MILS, DEPENDING ON OWNER SPECIFICATION AND/OR CONTRACTOR SUGGESTION, TAKING INTO CONSIDERATION THE EVENTUAL ATOMSPHERIC ENVIRONMENT OF THE STRUCTURE."

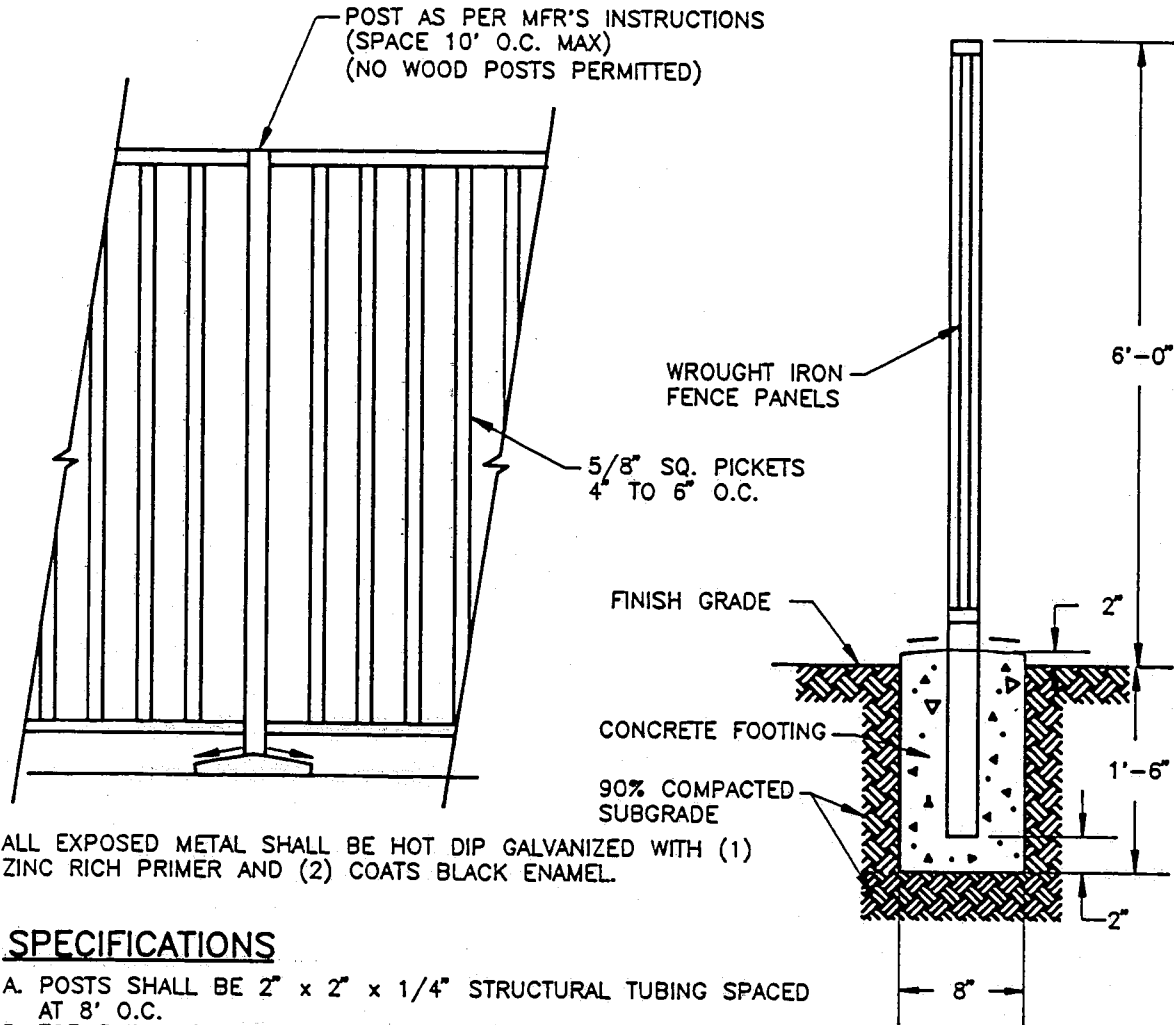
FOR DAMAGED OR INCOMPLETE GALVANIZED AREAS, REFER TO ASTM A780-80.

RECOMMENDED MATERIAL SUPPLIER: THE PLATT BROS. AND CO. (800) 752-8276.

RECOMMENDED METALLIZING CONTRACTOR: WROUGHT IRON FENCING (619) 591-3110.

ACAD FNAME: 141B

Revision	By	Approved	Date	CITY OF OCEANSIDE 6' WROUGHT IRON FENCE ZINC THERMAL SPRAYING	SHEET 2 OF 2 SHEETS <i>City Engineer 11-11-47</i> CITY ENGINEER Date STANDARD DRAWING NO. 141A



ALL EXPOSED METAL SHALL BE HOT DIP GALVANIZED WITH (1) ZINC RICH PRIMER AND (2) COATS BLACK ENAMEL.

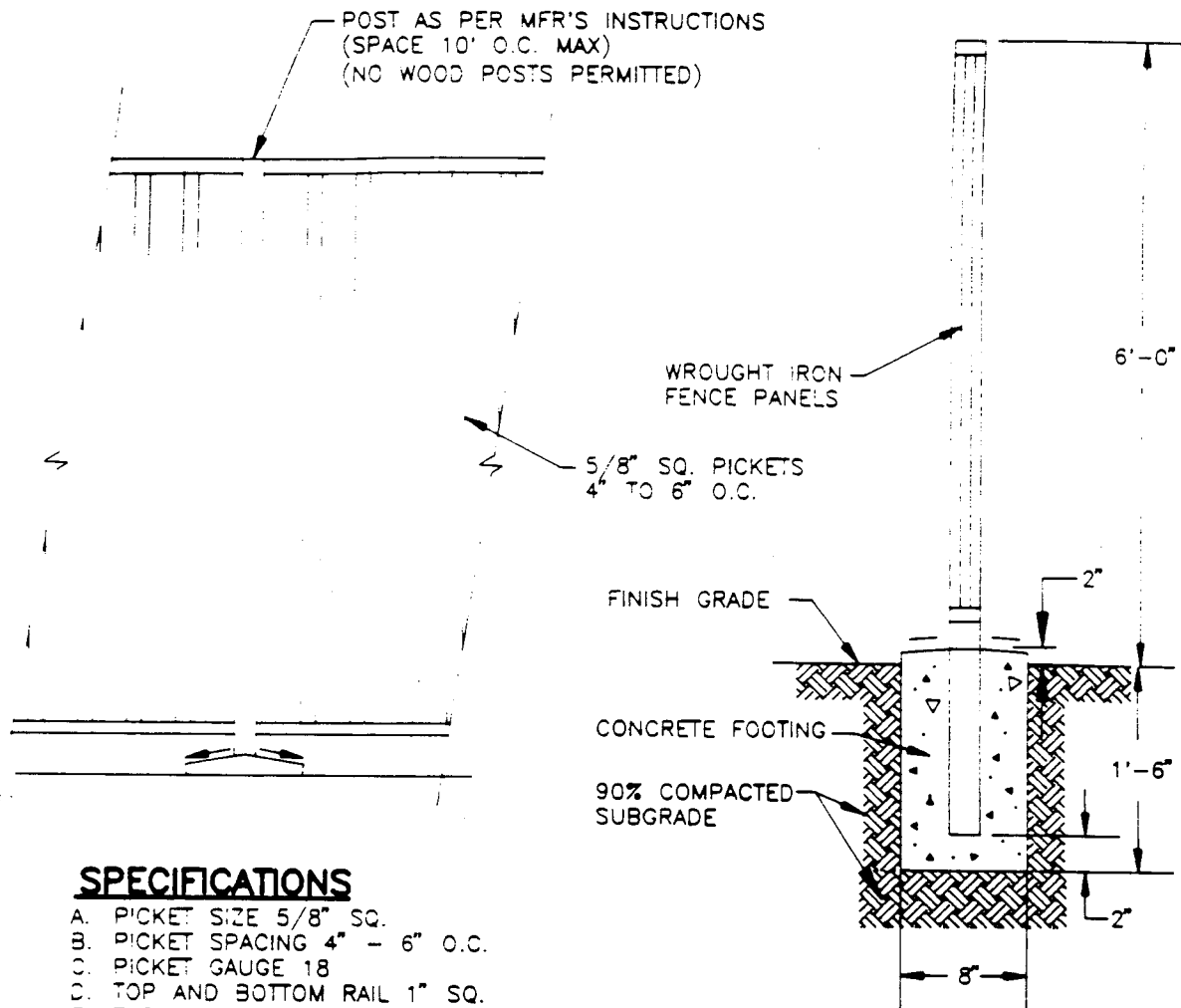
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Revision	By	Approved	Date	CITY OF OCEANSIDE 6' ORNAMENTAL TUBULAR STEEL FENCE HOT DIPPED GALVANIZED	<i>Quate Lubin 11-11-97</i> CITY ENGINEER Date STANDARD DRAWING NO. 142



SPECIFICATIONS

- A. PICKET SIZE 5/8" SQ.
- B. PICKET SPACING 4" - 6" O.C.
- C. PICKET GAUGE 18
- D. TOP AND BOTTOM RAIL 1" SQ.
- E. TOP AND BOTTOM RAIL GAUGE 16
- F. POST SIZE 1 1/2" SQ.
- G. POST GAUGE 16
- H. POST SET IN P.C.C. CONCRETE FOOTING. TOP OF FOOTING 2" ABOVE FINISH GRADE.

WELDING/CLEANING:

COLD ROLLED TUBULAR STEEL TO BE MIG WELDED ALL 4 SIDES TO TOP & BOTTOM RAILS. PANEL HANDSCRUBBED WITH TRICHLOROTHANE III, RCFRT-M-500 AND DIPPED INTO "BLUE GRIP" IRON PHOSPHATE ETCHING SOLUTION.

PAINTING/SEALING:

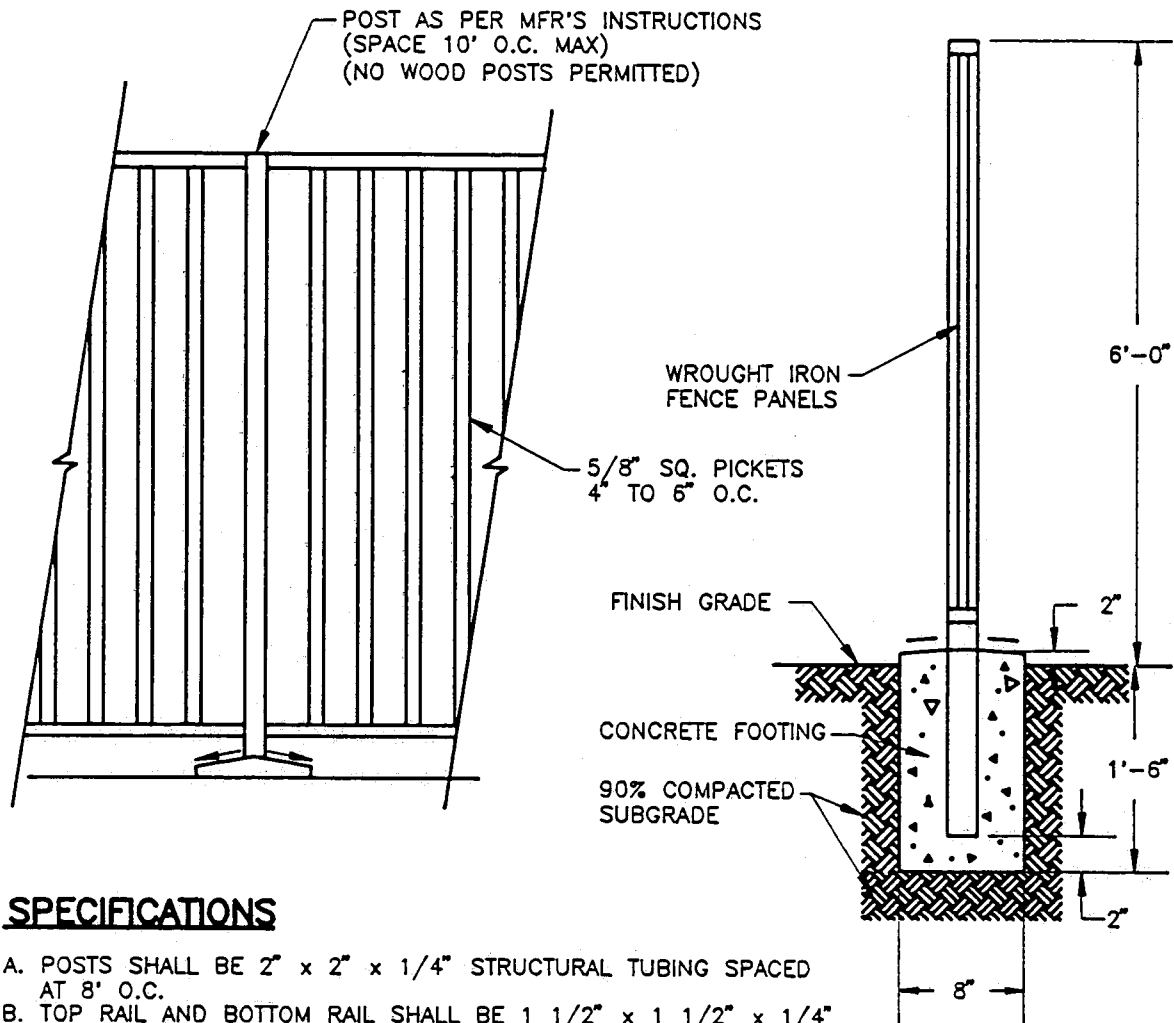
PANEL TO BE ELECTROSTATICALLY SPRAYED WITH 2 FULL COATS (2 MIL THICKNESS PER EACH COAT, TOTAL 4 MIL THICKNESS WET) OF ZINC-RICH METALHIDE PRIMER WITH RUST INHIBITIVE PIGMENTS FINAL COAT TO CONSIST OF PRO-LINE 1000 DELUXE HIGH GLOSS MARINE BLACK ENAMEL TOPCOAT (2 MIL THICKNESS WET).

- J. PRIOR TO ANY INSTALLATION, WRITTEN ACKNOWLEDGEMENT SHALL BE PROVIDED TO THE CITY LANDSCAPE INSPECTOR BY THE FENCE MANUFACTURER STATING THAT THE WROUGHT IRON FENCE WAS MANUFACTURED IN COMPLIANCE WITH THE ABOVE STATED SPECIFICATIONS.

Revision	By	Approved	Date

CITY OF OCEANSIDE
6' ORNAMENTAL TUBULAR
STEEL FENCE
ZINC "METALHIDE"

Ronald A. Bach
 CITY ENGINEER Date
 STANDARD
 DRAWING NO. 143



SPECIFICATIONS

- A. POSTS SHALL BE 2" x 2" x 1/4" STRUCTURAL TUBING SPACED AT 8" O.C.
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SEE SHEET B FOR
ADDITIONAL SPECIFICATIONS.

Revision	By	Approved	Date	CITY OF OCEANSIDE	SHEET 1 OF 2 SHEETS <i>See below 11-11-47</i>
				6' ORNAMENTAL TUBULAR STEEL FENCE ZINC THERMAL SPRAYING	CITY ENGINEER Date
					STANDARD
					DRAWING NO. 143A

ZINC THERMAL SPRAYING SPECIFICATION FOR THE CITY OF OCEANSIDE, CALIFORNIA

REFERENCES: AMERICAN WELDING SOCIETY C2.18.93
 AMERICAN SOCIETY FOR TESTING AND MATERIALS B833-93
 STEEL STRUCTURES PAINTING COUNCIL
 COATING STANDARD GUIDE 23.00, JUNE 1, 1991

"A ZINC OR ZINC/ ALUMINUM ALLOY COATING MAY BE USED IN PLACE OF A GALVANIZED ZINC COATING. THIS COATING SHALL BE APPLIED BY ONE-WIRE FLAME, OR TWO-WIRE ARC THERMAL SPARY EQUIPMENT. PRIOR TO APPLICATION OF THE ZINC OR ZINC/ALUMINUM COATING, AN SSPC SP10, NEAR WHITE BLAST SHALL BE ESTABLISHED, WITH A 2-4 MIL ANCHOR TOOTH PROFILE. ROUND STEEL SHOT WILL NOT BE USED. THE SUBSTRATE MUST BE GREASE AND DUST FREE, PRIOR TO APPLICATION OF THE COATING. THE ZINC OR ZINC/ALUMINUM COATING THICKNESS CAN RANGE FORM 3 TO 8 MILS, DEPENDING ON OWNER SPECIFICATION AND/OR CONTRACTOR SUGGESTION, TAKING INTO CONSIDERATION THE EVENTUAL ATOMSPHERIC ENVIRONMENT OF THE STRUCTURE."

FOR DAMAGED OR INCOMPLETE GALVANIZED AREAS, REFER TO ASTM A780-80.

RECOMMENDED MATERIAL SUPPLIER: THE PLATT BROS. AND CO. (800) 752-8276.

RECOMMENDED METALLIZING CONTRACTOR: WROUGHT IRON FENCING (619) 591-3110.

ACAD FNAME: 143B

Revision	By	Approved	Date	CITY OF OCEANSIDE	SHEET 2 OF 2 SHEETS <i>Debi Adin 11-11-97</i>
				6' ORNAMENTAL TUBULAR	CITY ENGINEER Date
				STEEL FENCE	STANDARD
				ZINC THERMAL SPRAYING	DRAWING NO. 143A

SECTION V

GUIDELINES FOR CITY OF OCEANSIDE LANDSCAPE MEDIANS

1. Ratio of landscape versus hardscape
2. Integration of hardscape and mow strip
3. Percolation tests
4. Special curbs
5. Soil testing
6. Drainage
7. Sight-distance zone and visibility
8. Drought-tolerant plants
9. Irrigation
10. Tree selection requirements
11. Maintenance

SECTION V

1. Ratio of Landscape vs. Hardscape

The ratio of landscape versus hardscape shall be determined by City Council and adopted per City Standards. The developer/owner shall be responsible to meet such ratio and base landscape design in medians accordingly.

2. Integration of Hardscape and Mow Strip

The design of medians shall be integrated with decorative hardscape such as: decorative brick cobblestones, embedded bomanite interlocking pavers, stamped concrete, aggregate rock or other approved hardscape. In areas where landscape is not applicable (i.e. - turn pockets, medians less than 6 feet in width measured from face of curb to face of curb), the use of hardscape shall be incorporated.

Owner/developer shall provide in medians a minimum 12 inch wide decorative hardscape mow strip along the back of the curb. This may be a part of the integrated overall design of the decorative hardscape required above, but in no case shall the mow strip be less than 12 inches along the back of the curb.

3. Percolation Tests

Percolation tests may be required on soils known to have a high water table or other soil problems.

4. Special Curbs

Special curb design may be required in order to help mitigate high water table or other soil problems. Refer to Department of Transportation Standard Plans Curb Type A1-8 (latest edition), G-1 8" San Diego Regional Standards, or as approved by the City Engineer.

5. Soil Testing

After the conclusion of rough grading, the soil shall be tested by a certified agricultural soils and plant laboratory service. All recommendations for actual materials and procedures for preparation shall be incorporated into the design.

SECTION V

6. Drainage

Subsurface drains (with cleanouts) shall be installed to alleviate the buildup of excessive moisture within the median. Excessive runoff onto City streets shall not be allowed. In addition, subdrains will be required where leaching of median water into the street section is determined to be a probability. Where a master drainage system is not constructed, drainage shall be as approved by the City Engineer.

Connections into the Master Drainage System shall comply with the City of Oceanside Engineer's Manual. Drainage design shall be subject to the review and approval of the City Engineer and the Water Utility Division.

7. Sight Distance Zone and Visibility

The area between the nose of median and the beginning of any landscape planting shall be known as the "SIGHT DISTANCE ZONE". A sight distance zone shall be approved for each intersection by the City Engineer. All sight distances shall be in accordance with the *City of Oceanside Engineers Design Manual*.

Intersections should be planned and located to provide as much sight distance as possible. In achieving a safe highway design, as a minimum, there should be sufficient sight distance for the driver on the minor highway to cross the major highway without requiring approaching traffic to reduce speed.

Any plant material within the sight distance zone shall not exceed 18 inches above street level at maturity. Low type groundcover and subshrubs (low growing shrubs) may be acceptable. No trees shall be permitted within the sight distance zone.

Subshrubs may be planted outside the sight distance zone but shall not exceed 30 inches above street level at maturity.

8. Drought Tolerant Plants

Trees, shrubs and low prostrate spreading shrubs shall be drought tolerant. Use only low prostrate shrubs to form ground cover. Once they are established, watering can be reduced. No groundcover or hydroseed mixes are allowed in median. No bark chips, shredded bark, or decorative rock are allowed in median. Hydrozoning (grouping plants with similar water needs) shall be reflected in the design.

In addition, plant material requirements under any City Landscape Master Plan or Historical Design Guidelines shall be adhered to unless revised herein.

SECTION V

No turf shall be allowed in medians. Mounding may be permitted in medians pending review and approval of City Engineer. If permitted, mounding shall be limited to a maximum height whereupon the height of the mound and plants shall not exceed the allowable sight distance heights of the 18" or 30" sight-distance zones. Mounds shall have a maximum cross sectional slope of 7%.

9. Irrigation

Median irrigation water shall be supplied by a separate water meter for median use only and be protected by a reduced-pressure backflow preventer. Both the water meter and backflow preventer shall be placed in the adjacent public right-of-way, or approved location, and not in the medians.

Irrigation should be accomplished through the use of low-volume heads which concentrate the water where it is required. Flood pop-up bubblers, or drip irrigation only is allowed. In all cases, water run off into streets is prohibited.

Use City-approved moisture sensing devices tied into multi-programmable irrigation controllers for maximum irrigation efficiency and water conservation. Enclose irrigation controllers in approved vandal-resistant enclosures. Controllers shall not be permitted in medians, but shall be placed in the adjacent public right-of-way or other approved location. Controller locations may be near an existing bus turnout or on-site parking area for ease of access by maintenance personnel. The controller location shall not obstruct sight visibility.

Valve locations shall be toward the center of the median planting (away from the curb) to minimize danger and hazards to maintenance personnel.

Quick coupling valves shall be provided every 200 feet or at every valve cluster, but shall not be less than one per median planted area. Quick coupling valves shall have one or two piece brass body designed for working pressure of 150 p.s.i. operable with quick coupler. Quick coupling valves shall be 3/4" size and shall be equipped with a locking vinyl cover, yellow in color. Quick coupling valves shall be similar to those manufactured by Rainbird or an approved equal.

Refer to City of Oceanside Guidelines and Specifications for Landscape Development for irrigation details.

All electrical wiring shall be sleeved in Schedule 40 electrical conduit under hardscape.

SECTION V

A flow-sensor and a master control valve per Point of Connection (P.O.C.) are required to detect breaks in mainline and laterals. This valve is designed to remain open during normal operations and to close when the flow-rate through the valve reaches a predetermined excess volume/pressure as in the case of a mainline breakage. Flow sensors shall be approved by the City Engineer.

10. Tree Selection Requirements

Trees shall provide an attractive appearance with a minimum of leaf and seed-pod litter. Select trees which have an upright and fairly open growth habit, are resistant to diseases and insects and require a minimum amount of pruning. Tree canopies or branches shall not hinder vehicular traffic movement. Lower branch structure shall not be less than 6' vertical height from the top of the curb at time of planting in order to provide sight-visibility clearance. Multi-trunk trees shall not be permitted. All trees shall be provided with approved root barriers. All trees in medians shall be approved by the City Engineer.

For a suggested approved list of median street trees, refer to *City of Oceanside Approved Street Trees*.

11. Maintenance

Median landscape and irrigation systems shall be maintained by the developer/contractor for a period of one year prior to final acceptance by the City. This period commences upon a date established by the City Landscape Inspector after landscape installation is complete. This time may be extended if the maintenance provisions are not met. (See Section III-Maintenance and Inspection in the *City of Oceanside Guidelines and Specifications for Landscape Development*.) Maintenance after the one-year period shall be per Resolution of project in perpetuity.

The design of all medians, including landscaping and irrigation, shall be approved by the City Engineer, the Director of Planning and (in some cases) the Public Services Director.

SECTION VI

FRONT YARD LANDSCAPE AND MODEL LANDSCAPE PLAN SUBMITTAL

In an effort to be consistent in processing the submittal of front yard landscaping and model landscape plans, these plans are to be submitted to the City of Oceanside as schematic drawings. Submit three (3) sets of plans, an agricultural soils report, a precise grading plan and an improvement plan. The City Engineer and the Director of Planning will review and approve these plans.

Each plan shall be drawn on 24" x 36" 4 mil mylar, "D" sheets, with an official City of Oceanside Title Block at the lower right-hand corner. Oversized sheets will not be accepted. The following items shall be addressed within the plan package:

I. Front Yard Landscapes

A. Title Sheet

1. General Notes (Exhibit A).
2. Submittal Date Block.
3. Declaration of Work.
4. Signature Block.
 - (a) City Engineer
 - (b) Director of Planning
5. Vicinity Map, with north arrow.
6. Project Location Site, Lay-out Map of Subdivision, with north arrow.
7. Owner's name, address, and phone number.
8. Landscape Architect's name, address and phone number.
9. Professional wet stamp, signature, and date on each sheet at time of mylar request.
10. Consecutive numbering of sheets.
11. Sheet Index.

B. Schematic Drawings

1. May include typicals per each floor plan.
2. Plans shall be drawn to Engineers Scale (no smaller than 20 scale) or Architects Scale (no smaller than 1/8" scale). All print (typewritten or lettering) shall be 1/8" or larger.

C. Design Criteria for Front Yard Landscape (Minimum Standards)

1. All plant material - trees, shrubs, and turf shall be of a drought-tolerant species and variety.
2. One-15 gallon (minimum) approved street tree shall be provided per lot, and two-15 gallon

SECTION VI

- (minimum) approved street trees per corner lot shall be provided with approved root control barriers.
3. One-15 gallon yard tree (with root control barrier if planted within six feet of hardscape) shall be provided.
 4. A total of eighteen (18) container stock shrubs (one-gallon and five-gallon sizes) shall be provided.
 5. Hand-planted groundcover may be planted on slopes if using micro-jet irrigation. Hydroseed mixes shall not be allowed on slope areas. Incorporate low prostrate spreading shrubs on slopes in conjunction with a non-living material such as jute matting with a drip irrigation system.
 6. All slopes exceeding eight feet in height and having a slope ratio of 4:1 or steeper may be irrigated with conventional low precipitation-rate overhead irrigation systems. If a portion of a slope qualifies for micro-irrigation and/or drip irrigation, the entire slope is to be irrigated with the same system for front, side and back yard slopes.
 7. Hydroseed mixes shall not be allowed in flat shrub planter areas. Hand-planted groundcover in flat areas is allowed only if micro-jet irrigation is installed.
 8. Incorporate shredded bark, small bark chips, decorative rock, or mulches in shrub plant areas. Shredded bark, small bark chips, and decorative rock shall not be installed in public right-of-ways or public utility easements.
 9. Turf area shall not exceed 35% of the total square footage of front yard landscape area. Turf may be seeded or sod. In any event, the developer is responsible for establishing an even stand of turf.
 10. An agricultural soils test shall be submitted for every ten lots. The soils laboratory's recommendations shall be followed.
 11. Provide separate control valves for turf and shrub, sun and shade, flat and slope areas, (Hydrozone) etc....
 12. Provide an irrigation system meeting all applicable codes and water-efficient xeriphytic practices.
 13. Control valves shall be located near hardscape for the convenience of the homeowner.
 14. Drip emitters shall be installed in emitter boxes in flat landscaped areas, public rights-of-way, public utility easements, and in highly visible vandal-prone areas. Emitter distribution tubing shall be covered with a minimum of three inches of mulch or bark.

SECTION VI

15. The developer is to maintain individual front yards for a minimum of 90 days after completed installation or until City acceptance.
16. Automatic controllers with water management adjustments and automatic rain shut off devices are required.
17. The developer/contractor is to supply the homeowner with sprinkler key and specialty tools necessary for adjustments to the system.
18. Walls, fences, gates and other necessary architectural details shall be shown and located on the plan.
19. Shovel cut, redwood header board or concrete mow curb shall be shown and located on the plan.
20. Other information, details, or notes may be required on the plan at the discretion of the City Engineer.

II. Model Landscapes

A. Title Sheet

1. General Notes (Exhibit A)
2. Submittal Date Block
3. Declaration of Work
4. Signature Block
 - (a) City Engineer
 - (b) Director of Planning
 - (c) Fire Marshall
5. Vicinity map, include north arrow
6. Project Site Location/Lay-out map of subdivision, include north arrow. Identify model lots and parking lots.
7. Owner's name, address, and phone number.
8. Landscape Architect's name, address, and phone number.
9. Professional wet stamp, signature, and date on each sheet at time of mylar request.
10. Consecutive numbering of sheets.
11. Sheet index.

B. Schematic Drawings

1. Plans shall be drawn to scale (no smaller than 1/8" Architects Scale). All print (typewritten or lettering) shall be 1/8" or larger.
2. Show fire hydrant location.
3. Show trap fence and gate location, call out height, material, pad lock or knox box. Provide one gate per model.
4. Trap fence shall be located out of public sidewalk, keeping sidewalk free to public access.
5. Show one street tree per lot, two street trees per corner lot. Minimum 15 gallon size located in public rights-of-way or public

SECTION VI

- utility easements. Install in approved root barriers. Street trees shall match Production Landscape Plans.
6. No decorative paving shall be located in public rights-of-way or public utility easements. No trip hazards (steps, walls, etc.) or use of rock, gravel, shredded bark, or bark chips may be placed within rights-of-way or public utility easements.
 7. Show all trellises or wood structures in back yard. Set back shall be 15 feet from top or bottom of slope or rear property line, whichever designates rear set back. Contact Planning Department for appropriate setbacks per project site.
 8. Design all models with drought-tolerant landscape. (See Exhibit B and Exhibit C).
 9. Show plant material for all slopes.
 10. Show plant material locations, botanical and common names, size, and any special remarks.
 11. Show and call out header board, concrete mow strip or shovel cut.
 12. Call out type of irrigation system, include manufacturer's name, and model numbers for backflow preventer, gate valve, pressure regulator, and sprinkler heads. Include note that pop-up bodies shall be used along all pedestrian walkways.
 13. Comply with the principles and concepts of 100% Xeriscape plantings/micro-irrigation systems.
 14. List soil amendments and/or certified soil lab recommendations.

There shall be no bonding required. Fees for plan check, landscape inspection and reproduction shall be required for both the front yard landscape and model landscape plans. Plans shall be approved and signed by appropriate City Officials prior to obtaining building permits and installing landscape. In addition, for model homes, Precise Grading Plans prepared by a Civil Engineer shall be approved by the City Engineer prior to obtaining a building permit. Prior to final sign-off on an occupancy permit, the City's Landscape Technician/Inspector will review each unit requested for occupancy to ensure that installation of planting and irrigation, in conformance with the schematics, has taken place. The irrigation also will be tested to ensure operability and adequacy of coverage.

Attachment: Exhibit A
Exhibit B
Exhibit C

EXHIBIT A

General notes (not limited to the following)

- (1) The contractor must notify the City Landscape Inspector (619-966-4747) 48 hours (two working days prior to start of construction.
- (2) The developer is required to fully maintain all landscaping a minimum of 90 days or until City acceptance of all improvements.
- (3) Turf areas shall have a maximum design slope of 4:1. Ground cover areas shall have a maximum design slope of 2:1.
- (4) Name of soils lab(s) performing agricultural and structural soils tests. Soils testing for agricultural suitability shall be accomplished at the conclusion of rough grading and submitted to the City Engineer prior to soil preparation.
- (5) The landscape or irrigation contractor is to verify existing P.S.I. at job site prior to installing landscape irrigation system. Verification shall be made with the Oceanside Water Department.
- (6) The contractor is responsible for obtaining building and plumbing permits prior to commencing wall construction and irrigation installation, respectively.
- (7) Irrigation systems for individual parcels shall have points of connection for the system between the water meter and water service riser into dwelling and ahead of any water regulating device installed for dwelling.
- (8) Work shall be done in accordance with *City of Oceanside Guidelines and Specifications for Landscape Development (1985)*.
- (9) All reduced pressure backflow preventers and pressure vacuum breaker assemblies shall be tested after installation, relocation, or repairs by a City-approved certified tester. Notify Water Utilities Department for current list (619) 966-4850. Developer/owner is responsible for supplying a copy of the test results to the City Landscape Inspector.

EXHIBIT B

MODEL HOME DEVELOPMENT CRITERIA
WATER CONSERVING LANDSCAPE DESIGN

Low water usage landscaping shall be installed in all new developments.

It is City policy that model homes in new residential tracts be landscaped entirely with a "Xeriscape" concept, defined as "the conservation of water through creative landscaping".

The following criteria apply to those model homes being designed to meet the water-saving landscaping requirement. Model homes shall contain exclusively low water usage plant materials, which may include California natives. Drip, bubbler, or micro-irrigation systems shall be installed. Appropriate signs and literature for prospective home buyers shall be on display and available to those purchasers who are interested in the information.

a. Low water usage plant materials

The low water usage plant material list contains plant materials suitable for most areas in Oceanside. Other low water usage plants will be considered. One, five and fifteen gallon containers are required; however, a smaller container size for California native plants may be given consideration.

b. Turf areas

Turf normally requires more water than low water usage ground covers and shrubs. Turf area shall not exceed thirty-five (35) percent of the total square footage of front yard landscape area. Limit turf in back yard to only those areas that are used for social and play activities. Large areas of turf therefore are discouraged. Areas approved for turf will require the use of drought-tolerant turf varieties.

c. Irrigation systems

An irrigation system shall include drip, bubbler or micro-irrigation properly located to minimize landscape water over-spray onto an unplanted area.

d. Maintenance and water schedule

A post-installation maintenance program with a watering schedule for the ongoing maintenance is encouraged and shall be included in literature.

EXHIBIT B

e. Signs

A front yard sign identifying a xeriscape model shall be large enough to be visible from the street (at least 2 feet by 2 feet) and located in front of the model home. The sign shall indicate that the model is landscaped with drought-tolerant or low water usage plant material and low volume/low precipitation irrigation systems.

Several signs shall be placed throughout the landscaped area identifying the irrigation system used, the different areas of the landscape, and any other features that contribute to the overall water conserving theme (hardscapes, mulch, redwood bark).

A drawing, or combination of drawings, shall be displayed inside the house providing a schematic of the landscape. These drawings should include a key identifying the plants in the yard. It is suggested that this schematic also be printed on a handout to be available at the model or the sales office. The drawings should be in color, easy to read and framed for protection.

f. Literature

Literature describing water conserving landscapes, locations where plant material may be obtained, irrigation systems, maintenance procedures and any other explanatory information pertaining to water conservation shall be displayed inside the model or sales office. Packets of the literature should be available to prospective home buyers.

EXHIBIT C

LOW WATER USAGE
PLANT LIST

The following plant materials require minimal irrigations. Once established, they are commonly available and attractive. Landscape materials not included on the following list may be considered.

Botanic NameCommon NameTrees-Evergreen

<i>Olea europea</i>	European Olive
<i>Melaleuca quinquenervia</i>	Cajeput Tree
<i>Pinus canariensis</i>	Canary Island Pine
<i>Eucalyptus sideroxylon</i>	Pink Ironbark
<i>Eucalyptus citriodora</i>	Lemon-Scented Gum
<i>Tristania conferta</i>	Brisbane Box
<i>Quercus agrifolia</i>	Coast Live Oak
<i>Prunus lyonii</i>	Catalina Cherry
<i>Schinus molle</i>	Californian Pepper

Trees-Deciduous

<i>Platanus acerifolia</i>	European Sycamore
<i>Ginkgo biloba</i>	(Grafted Male) "Fairmont"
<i>Pistachia chinensis</i>	Chinese Pistache
<i>Alnus rhombifolia</i>	White Alder
<i>Platanus racemosa</i>	California Sycamore
<i>Quercus sp.</i>	Oak
<i>Acacia sp.</i>	Wattle
<i>Casuarina</i>	Beefwood
<i>Metrosideros</i>	New Zealand Christmas Tree

Shrub-Large

<i>Arbutus unedo</i>	Strawberry Tree
<i>Abelia grandiflora</i>	Glossy Abelia
<i>Escallonia fradesii</i>	Pink Escallonia
<i>Photinia fraseri</i>	Photinia
<i>Nerium oleander</i>	Oleander-varieties
<i>Prunus lyonii</i>	Catalina Cherry
<i>Juniperus torulosa</i>	Hollywood Juniper
<i>Myoporum laetum</i>	Myoporum
<i>Rhamnus californica</i>	Coffeeberry
<i>Ceanothus sp.</i>	Ceanothus
<i>Heteromeles arbutifolia</i>	Toyon
<i>Fremontia 'California Glory'</i>	Flannel Bush
<i>Echium fastuosum</i>	Pride of Madeira

EXHIBIT C

Eleagnus pungens

California Silver Berry

Botanic Name

Common Name

Prunus ilicifolia
Callistemon sp.
Cotoneaster
Cistus sp.
Arctostaphylos sp.
Leptospermum
Rhus
Cassia artemisioides

Hollyleaf Cherry
Bottlebrush
NCN
Rock Rose
Manzanita
Tea Tree
Lemonade Berry
Feathery Cassia

Shrubs-Medium

Mahonia aquifolium
Rapheolopis indica
Juniperus sp.
Hemerocallis aurantiaca
Knipofia uvaria
Ceanothus sp.

Oregon Grape (compact)
Indian Hawthorne
Juniper Varieties
Golden Day-Lily
Red Hot Poker
California Lilac

Shrubs-Low

Juniper sp.
Ceanothus griseus horiz.
Pyracantha prostrata
Arctostaphylos hookeri

Low Juniper Varieties
Carmel Creeper
Santa Cruz
Monterey Manzanita

Ground Covers

Arctotheca calendula
Baccharis pilularis 'Twin Peaks'
Gazania sp.
Arctostaphylos
Cotoneaster microphylla
Phylla nodifolia
Rosmarinus prostrata

Yellow Capeweed
Coyote Bush
Gazanias
Little Sur Manzanita
Rock Spray
Lippia
Dwarf Rosemary

Vines

Doxantha unguis-cati
Bougainvillea (species)

Cats Claw
Bougainvillea

Turf

Improved fescues
Bermuda hybrids

EXHIBIT C

Perennials - for color

Coreopsis auriculata
Diplacus hybrids
Galvenia speciosa
Kniphofia uvaria
Limonium perezii
Penstemon hybrids

Golden Coreopsis
California Monkey Flower
Island Snapdragon
Poker Flower
Statice
California Penstemon

SECTION VII

XERISCAPE LANDSCAPE REQUIREMENTS

On March 27, 1991 City Council approved and adopted Article V, Chapter 37 revising Oceanside's Water Conservation Program. All landscape plans shall be designed in accordance with the principles and concepts of 100% xeriscape plantings/micro irrigation systems. The following standards shall be incorporated into all new and revised landscape plans:

I. Erosion Control of Slope Areas

Non-living Temporary Erosion Control:

In lieu of installing a living cover crop such as a hand planted ground cover or hydroseed mix on slopes, incorporate a non-living material such as:

1. Jute matting
2. Curlex blankets
3. Sterilized straw - punched
4. Other materials approved by the City Engineer

These non-living materials shall be placed on slopes in conjunction with low prostrate spreading shrubs. While the non-living material provides temporary erosion control the prostrate shrubs will eventually fill in, thus providing ultimate erosion control.

II. Landscape Access and Utility Easements

Omit grasscrete with turf in landscape access and utility easements, install surface materials such as:

- A. Decomposed granite
- B. Decorative rock
- C. Decorative concrete
- D. Asphalt
- E. Other suitable all-weather surface

Material to be used in the access or utility areas will be determined by the weight of trucks utilizing the easement and the percentage of grade of the easement.

A sub-base material and/or a reinforcement material may be required with surface materials (A-E above).

III. Emergency Access and Utility Easements

SECTION VII

- A. Decomposed granite
- B. Decorative concrete
- C. Asphalt
- D. Other suitable all-weather surface

Material to be used in the access or utility areas will be determined by the weight of trucks utilizing the easement and the percentage of grade of the easement.

A sub-base material and/or a reinforcement material may be required with surface materials (A-D above).

Fire Marshal and City Engineer approval is required.

IV. Off-Site Graded Areas

- A. Flat Areas - per Erosion Control Standards
- B. Slopes - same as Section One

V. Fire Buffer Zone

If a 6-foot decorative block wall is placed at top of slope separating structure from fire zone, a fire buffer zone may not be required.

An approval from Planning Department to allow a 6-foot decorative block wall would be required and determined on a case by case basis. Otherwise, a 100-foot fire buffer (or as determined by the Fire Marshal) is required.

Plant material shall consist of fire-retardant and anti-erosion varieties. Permanent irrigation on a drip system shall be installed.

VI. Front Yard Landscapes

Design Criteria:

1. All plant material - trees, shrubs, and turf shall be of a drought-tolerant species and variety.
2. One 15-gallon (minimum) approved street tree shall be provided per lot, and two 15-gallon (minimum) approved street trees per corner lot shall be provided with approved root control barriers.

SECTION VII

3. One 15-gallon yard tree (with root control barrier if planted within six feet of hardscape) shall be provided.
4. A total of eighteen container-stock shrubs (a combination of one-gallon and five-gallon sizes) shall be provided.
5. Hand planted groundcover or hydroseed mixes shall not be allowed on slope areas. Incorporate low prostrate spreading shrubs in conjunction with a non-living material such as jute matting. Irrigate with a drip system.
6. All slopes exceeding eight feet in height and having a slope ratio of 4:1 or steeper may be irrigated with conventional low precipitation-rate overhead irrigation systems. If a portion of a slope qualifies for micro-irrigation and/or drip irrigation, the entire slope is to be irrigated with the same system for front, side and back yard slopes.
7. Hydroseed mixes shall not be allowed in flat shrub planter areas. Hand-planted groundcover in flat areas is allowed only if micro-jet irrigation is installed.
8. Incorporate shredded bark, small bark chips, decorative rock, or mulches in shrub plant areas. Shredded bark, small bark chips, and decorative rock shall not be installed in public right-of-ways or public utility easements.
9. Turf area shall not exceed 35% of the total square footage of front yard landscape area. Turf may be seeded or sod. In any event, the developer is responsible for establishing an even stand of turf.
10. An agricultural soils test shall be submitted for every ten lots. The soils laboratory's recommendations shall be followed.
11. Provide separate control valves for turf and shrub, sun and shade, flat and slope areas, etc. (Hydrozone).
12. Provide an irrigation system meeting all applicable codes and water-efficient xeriphytic practices.
13. Control valves shall be located near hardscape for the convenience of the homeowner.

SECTION VII

14. Drip emitters shall be installed in emitter boxes in flat landscaped areas, public rights-of-way, public utility easements, and in highly visible vandal-prone areas. Emitter distribution tubing shall be covered with a minimum of three inches of mulch or bark.
15. The developer is to maintain individual front yards for a minimum of 90 days after completed installation or until City acceptance.
16. Automatic controllers with water management adjustments and automatic rain shut off devices are required.
17. The developer/contractor is to supply the homeowner with sprinkler key and specialty tools necessary for adjustments to the system.
18. Walls, fences, gates and other necessary architectural details shall be shown and located on the plan.
19. Shovel cut, redwood header board or concrete mow curb shall be shown and located on the plan.
20. Other information, details, or notes may be required on the plan at the discretion of the City Engineer.

VII. MEDIANS

- A. No turf allowed in medians.
- B. No groundcover or hydroseed mixes allowed in medians.
- C. No bark chips, shredded bark, or decorative rock allowed in medians.
- D. Provide drought tolerant shrubs, and trees in medians.
- E. Use only low prostrate spreading drought tolerant shrubs to form ground cover.
- F. Incorporate 75% hardscape and 25% softscape (landscape) in medians.
- G. Use only drip or bubbler irrigation in medians.
- H. Maintain a minimum of a 12-inch safety strip (decorative concrete) along back of curb on both sides of planter area.

SECTION VII

- I. Refer to Section V - GUIDELINES FOR CITY OF OCEANSIDE LANDSCAPE MEDIANS.

VIII. SIDE YARD LANDSCAPES

- A. Where side yards of duplex/multiplex units require a five foot or less side yard setback, elimination of groundcover may be granted and hardscape incorporated if surface drainage is maintained.
- B. Planter areas shall still be required for aesthetics and screening purposes.

IX. PLANTABLE WALLS (Cribwalls, or other walls approved by the City Engineer)

- A. Drought tolerant planting is required using liners, hand-planted cuttings, and/or one gallon low prostrate spreading shrubs, vines, or groundcover.
- B. No hydroseeding allowed.
- C. Use drip or micro-jets.
- D. Refer to CRIBWALL SPECIFICATIONS MEMORANDUM dated December 14, 1989. These specifications are available for review in the office of the City Engineer.

X. GENERAL FLAT LANDSCAPE AREAS

- A. Restrict turf area to usable areas only.
- B. Establish percentage of turf allowed.
- C. Incorporate more usage of rockscape, hardscape, small bark chips, shredded bark, or decorative rock into landscape area.
- D. Install drip, bubbler, micro-jets, or a combination thereof.
- E. Install moisture sensing devices.
- F. Check valves at bottom of slopes and other locations as needed shall be required.
- G. Install flow sensors to detect break in mainline, laterals, and sprinkler heads.
- H. Install only drought-tolerant plant material.

SECTION VII

XI. IRRIGATION SYSTEMS

A. Permanent

1. All lateral and mainline shall be buried.
2. Brownline shall be reviewed for approval on a case by case basis and only with the approval of the City Engineer.
3. Install drip, bubbler, micro-jets, or a combination thereof.
4. Install flow sensors to detect break in mainline, laterals, and sprinkler heads. Irrigation mainlines that are one inch in diameter or less and do not exceed 300 linear feet (measured from backflow preventer to the end of the mainline) shall be exempted from having to provide flow sensors..
5. Install moisture sensing devices. All moisture sensor locations shall be identified and/or tagged in the field.
6. Check valves at bottom of slopes and other locations as needed shall be required.

B. Temporary

No temporary systems allowed unless approved by the City Engineer on a case by case basis.

MEMORANDUM

Community Services Department Engineering Division

To: Development Community

From: Peter Weiss, City Engineer 

Date: November 10, 1997

Subject: CERTIFICATION, CHECKLIST, AND GUARANTEE FOR
CONTRACTUAL LANDSCAPE ARCHITECTURAL SERVICES

The City Council has recently approved the City of Oceanside Development Streamlining Initiatives. One of the initiatives is to reduce the City's inspection of private landscape improvements and reduce the inspection fee accordingly.

In order to implement this initiative, the City will rely on the Landscape Architect of Record to certify the landscaping improvements comply with the approved landscape plans.

The Licensed Landscape Architect of Record will be required to submit a letter to the City of Oceanside, Engineering Division stating:

"I have observed/inspected the construction of the landscaping and irrigation systems. I hereby certify that the landscape and irrigation have been constructed in accordance with the approved landscape plans, and all applicable City requirements and standard construction practices."

A field observations/inspections checklist for Irrigation and landscape is attached. The checklist should be used by the Landscape Architect of Record to verify compliance with the approved landscape plans, specifications, City of Oceanside Standards, and acceptable landscape construction practices.

All observation/inspection work shall be performed and landscape certificate submitted to the Engineering Division, Landscape Section, prior to the occupancy of any residential unit or non-residential phase

In addition, the developer/owner will be required to sign the plans (see attached guarantee) indicating that a contractual agreement for construction observations-inspections has been awarded to the Landscape Architect of Record. The guarantee for contractual architectural services shall be signed on the title sheet prior to the final approval of the landscape drawings.

Sample:

LANDSCAPE CERTIFICATE

PROJECT: _____

FILE NO: _____

LANDSCAPE DRAWING NO(S): _____

LOCATION: _____

LOT NO(S): _____

PARCEL OR MAJOR NO(S): _____

CONTRACTOR: _____

WORK BEGAN: _____ WORK COMPLETED: _____

I hereby certify that I have observed/inspected the construction of the landscape, and irrigation system. I hereby certify that the landscape and irrigation have been constructed in accordance with the approved landscape plan, and all applicable City requirements and standard construction practices.

Landscape Architect of Record: _____

Date: _____

Seal:

GUIDELINE CHECKLIST FOR LANDSCAPE AND IRRIGATION

IRRIGATION

1. Pre-construction Meeting_____
2. Mainline trench depth and pipe_____ (Including all sleeves for mainlines)
3. Mainline Pressure Test - (Install pressure gauges at P.O.C. and farthest branched ends). Test at 150 psi. for 3 hours. _____
4. Lateral trench depth and pipe_____ (Including all sleeves for lateral lines)
5. Swing joint assemblies_____
6. Irrigation lines crossing under brow ditches_____
7. Valve assemblies_____
8. Nozzle installation_____
9. Coverage test for irrigation_____
10. Backflow preventer installation and certification_____ (May include pressure vacuum breakers, anti-siphon valves, or angle valves with atmospheric vacuum breakers)
11. Separate water meter if required per conditions of approval_____
12. Installation of gate valves or ball valves_____
13. Installation of flow sensors and master control valves_____ Certification of flow sensors_____
14. Installation of anti-check valves to prevent low head drainage_____
15. Installation of moisture sensors_____ Certification of moisture sensors_____
16. Installation of controller(s)_____
17. Installation of rain check devices_____
18. Installation of all valve boxes with 6" depth of gravel_____
19. Submittal of as-builts and verification_____
20. Processing of Field Change Request Forms_____

GUIDELINE CHECKLIST FOR LANDSCAPE AND IRRIGATION**PLANTING**

1. Verification of soil preparation based on Agricultural Soil Analysis and recommendations_____
2. Processing of Field Change Request Forms to change out plant material_____
3. Inspection of post or pre weed abatement_____
4. Verification of hydroseeding, sodding, or handplanted plant material_____
5. Inspection of tree, shrub, and groundcover planting_____ (Includes the placement of all street trees)
6. Verification of rootbarriers_____
7. Inspection of required front yard landscape_____
8. Inspection of median planting and irrigation_____
9. Compliance to approved landscape plans and conditions of approval of project_____

MISCELLANEOUS

1. Verify all walls and fences are built according to approved landscape plans_____
2. Verify trash enclosures are installed as per the approved landscape plans_____
3. Verify overhead trellis, garden walls, tot lots, and any other amenities are installed per the approved landscape plans_____
4. Schedule walk throughs for occupancy releases, commencement of the required one-year maintenance period, as-built verification, and/or bond exoneration_____

SECTION VIII

**GUARANTEE FOR CONTRACTUAL LANDSCAPE
ARCHITECTURAL SERVICES**

I have contracted with the Landscape Architect of Record to perform field observations and construction inspections to assure that the project will be constructed in accordance with the approved landscape plans, and all applicable City requirements and standard construction practices.

Developer/Owner

Date