American River Basin

Attachment 3: Work Plan

Supporting Documents

Att3_IG1_ARB_Workplan_10of10 includes the following:

Project No.	Project Name	Supporting Documentation Included	Notes
15	Sleepy Hollow Detention Basin Retrofit Project	City of Elk Grove Standard Construction Specifications	The proposed project will follow the included City of Elk Grove Standards.
		Sleepy Hollow Unit No. 2 Grading and Erosion Control Plan	This drawing is the record topo of the Sleepy Hollow Detention Basin.
		Improvement Plans for Shops at Calvine and Bradshaw	The proposed project will include improvements similar to the Erosion Control Plan in these Improvement Plan drawings.
		Landscape Architectural Construction Drawings for Paseo Greenbelt & Wetlands Riparian Habitat Mitigation Area; Laguna Ridge – Drainage Parkway	The proposed project will be similar to the recently constructed Laguna Ridge Drainage Parkway project.

City of Elk Grove Standard Construction Specifications

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SECTION 20 LANDSCAPING

20-1 GENERAL

Landscaping work shall consist of performing roadway planting, park landscaping, irrigation installation, and other work necessary for improving the appearance of the roadside and park facilities, as shown on the Plans and in accordance with these Specifications.

20-2 MATERIALS

Landscaping materials shall conform to the requirements in Section 50-43, "Landscaping Materials", and these Specifications.

20-2.01 Root Control Barrier

Root control barrier shall be installed prior to topsoil placement or by means of trenching against existing surfaces. Panels shall be installed slightly higher than finish grade one inch (1"), flush against edge of pavement, and joined with locking strips or integral male/female sliding locks. Locking mechanism shall have a close tolerance to restrict any slippage between panels. Barrier shall be installed with root deflectors facing inward and shall provide a continuous barrier around the perimeter of each median, tree well, sidewalk or other hardscape surface.

20-2.02 Topsoil

Topsoil shall be placed and spread to the line and grade as shown on the Plans or as directed by the City. Topsoil shall be compacted to approximately eighty percent (80%) relative compaction. Topsoil in tree or shrub pits shall be lightly tamped by hand so as to form a firm setting for the plant, but not hinder growth. Mechanical tamping will not be permitted.

After spreading the topsoil, any extraneous or unacceptable material not previously removed shall be raked off and removed from the topsoil area. Spreading and compacting shall be completed in such a manner that seeding, sodding, or planting can proceed without additional grading.

Immediately before planting, the topsoil shall be cultivated and raked to provide a uniformly smooth, firm, friable, fine textured finished surface. No grading equipment will be permitted on the topsoil after the area has been finish graded and prepared for planting.

20-2.03 Soil Amendment

Soil amendment shall be uniformly spread at the rate specified and incorporated with a rotary cultivator to obtain a homogeneously blended soil six inches (6") in depth, unless specified otherwise in the Special Provisions.

20-2.04 Liquid Green Dye

Liquid green dye used in erosion control and hydroseeding work shall be forty-eight- (48-) hour colorfast, applied at the rate of two (2) quarts per acre, unless otherwise specified in the Special Provisions.

20-2.05 Mulch

Mulch shall be top dressed, where specified, to a minimum depth of three inches (3") over soil level. Taper mulch away from the crowns of all newly planted and existing trees.

20-3 EROSION CONTROL

Erosion control materials shall conform to Section 50-43, "Landscaping Materials", the Special Provisions, and these Specifications.

20-3.01 Seeding and Fertilizing

Seeding and fertilizing shall conform to the Special Provisions and these Specifications.

If the Contractor elects to hydroseed, a minimum of fifteen hundred (1,500) pounds of fiber per acre shall be mixed and applied with the seed, and fertilizer (if required) may be mixed with the seed and fiber and applied in the hydroseeding operation.

The Contractor shall scarify to a depth of six inches (6") and uniformly fine grade so that proper drainage of the entire ground cover is assured. All rocks, soil lumps, and other deleterious materials larger than one inch (1") shall be removed and the area raked smooth.

The Contractor shall avoid any compaction of the soils after treatment, and shall not permit traffic over such areas. In case of such compaction, the areas shall be recultivated by the Contractor, at the Contractor's expense.

Areas to be treated for weed control shall be treated as shown or specified in the Contract . Equipment for hydroseeding application shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry of fiber, fertilizer, seed, and water. The discharge line shall provide even distribution of the slurry on the slopes to be seeded. The slurry tank shall have a minimum capacity of one thousand (1,000) gallons.

The slurry preparation shall begin by adding water to the tank. When the water level has reached the height of the agitator shaft, the stabilizing agent shall be added. Seed and fertilizer shall then be added, followed by the fiber mulch. The combined materials shall then be uniformly blended prior to application. Spraying shall commence within two (2) hours after the tank is full.

The Contractor shall perform hydroseeding during calm wind conditions. The operator shall spray the slopes with a uniform, visible coat, using the color of the mulch as a guide. The slurry shall be applied in a sweeping motion to allow the fibers to build on each other, until a good coat is achieved. Unless otherwise specified in the Special Provisions, the application rates shall be:

Material	Application Rate per Acre
Mulch	1,500 pounds
6-20-20 fertilizer	400 pounds
Seed Mix	See Plans or Special Provisions
Liquid Green Dye	2 quarts
Stabilizing Emulsion	As approved by the City

20-3.02 Measurement and Payment

The quantity of erosion control to be paid for by the square foot, square yard, acre or as designated in the Contract will be calculated on the basis of actual or computed slope measurements.

The price paid per square foot, square yard, or acre includes compensation for furnishing all labor, materials, tools, equipment, incidentals and for doing all the work involved in performing erosion control work and hydroseeding, complete in place, including site preparation, hydroseeding application, and clean-up as shown on or specified in the Contract, as specified in these Specifications, and as directed by the City.

20-4 PLANTING

This work shall consist of furnishing and installing planting materials, clearing planting areas, preparing planting areas, planting plants and establishing plants as shown on the Plans and as specified in these Specifications and the Special Provisions.

Planting materials shall be as specified in Section 50-43, "Landscaping Materials", and these Specifications, and shall be installed in accordance with Standard Drawings L-1 and L-2.

20-4.01 Pesticides

The Contractor shall obtain recommendations for the use of pesticides from a licensed Pest Control Adviser in accordance with the requirements of the California Food and Agricultural Code. At least twenty-four (24) hours prior to using any pesticides, a copy of such recommendations shall be submitted to the City for approval. The recommendations shall include, but not be limited to, the pesticides to be used, rates of application, methods of application and areas to which pesticides are to be applied.

Pesticides for weed control shall be applied with a photosensitive dye which will produce a contrasting color when sprayed upon the ground. The color shall disappear between two (2) and three (3) days after being applied. The dye shall not stain any surfaces nor injure plant or animal life when applied at the manufacturer's recommended application rate.

Pesticides shall not be applied when weather conditions, including wind conditions, are unsuitable for such work.

Any new or existing plants which, in the opinion of the City, have been damaged by the application of pesticides shall be replaced by the Contractor at his expense.

20-4.02 Preparing Planting Areas

The City shall approve the ground locations of plants by inspecting the placement of the plants, stakes, or other suitable markers. The Contractor shall furnish all labor, materials, and transportation required to adequately mark the various plant locations.

In areas to be planted, all rocks and other debris greater than one inch (1") in diameter shall be removed and disposed of.

In areas to be planted, the grade shall be one (1") to two inches (2") below the planned finish grade prior to conditioning the soil. In all other areas, the grades shall be as indicated at the grading plane for the type of facility to be constructed thereon.

The formation and compaction of embankments shall conform to the provisions as specified in Section 18, "Earthwork", of these Specifications and as modified herein. In areas to be planted, compaction of the fill shall be not more than eighty-five percent (85%) for the upper one foot (1') of such fill.

Cultivation shall be performed with as many passes with the cultivator as necessary, as determined by the City, to produce a friable, uniformly mixed soil, free of pockets of unmixed soil, amendments, or fertilizers if such are specified.

Areas adjacent to walks, structures, or other such facilities that are inaccessible or difficult to reach by mechanical rotary cultivators shall be cultivated by hand.

After cultivation, the surface shall be raked, rolled, or otherwise smoothed to remove ridges and fill depressions. The finished surface shall be uniform, evenly graded, and reasonably firm. The grades of the finished surface shall be approximately two inches (2") below the top of adjacent curbs or pavement, unless otherwise shown on the plans and except for those areas designated to receive topsoil, where the grade shall be six inches (6") below planned finish grade.

Soil preparation and planting operations shall be conducted under favorable weather conditions only. Soil shall not be worked when excessively dry or wet and the City has the right to stop any work taking place during a period when conditions are considered detrimental to soil structure or plant growth.

The work involved in preparing planting areas shall be so conducted that the existing flow line in drainage ditches will be maintained. Material displaced by the Contractor's operations that interferes with drainage shall be removed and dispersed of as directed by the City.

Cultivation shall be performed until the soil is in a loose condition to a minimum depth of six inches (6"). Soil clods shall not be larger than two inches (2") in any dimension after cultivation. Planting areas that have been cultivated and become compacted for any reason shall be recultivated by the Contractor at his expense.

20-4.03 Header Boards

Header boards shall conform to Section 50-43.11, "Lumber", of these Specifications and shall be installed in accordance with Standard Drawing L-27.

Header board stakes shall be of the size and shape shown on the Plans. Each stake shall be driven

flush with the top edge of the header board and the stake top shall be beveled away from the header board on a forty-five-degree (45) angle. Stakes shall be at four feet (4') on center along the length of the header board. Stakes shall be attached to header boards with a minimum of two (2) 12-penny hot-dip galvanized common nails per stake.

Where asphalt concrete or portland cement concrete surfacing must be removed to permit the installation of header boards, and no joint exists between the surfacing to be removed and surfacing to remain in place, the surfacing shall be cut in a neat line to a minimum depth of 0.17-foot with a power driven saw before the surfacing is removed.

20-4.04 Planting

Plant material shall conform to Section 50-43.14, "Plants", of these Specifications and shall be installed in accordance with Standard Drawings L-1 and L-2.

No planting shall be done in any area until the area concerned has been prepared in accordance with these Specifications and the Special Provisions and presents a neat and uniform appearance satisfactory to the City. When an irrigation system is required, the irrigation system shall be installed and checked for coverage to the satisfaction of the City prior to planting plants.

Planting will not be allowed in any area that in the opinion of the Landscape Architect is too wet or too dry or that is in any other way unacceptable for planting.

Where vines are to be planted against walls or fences, the vines shall be planted as close as possible to the wall or fence as shown on the Plans.

Plants shall be removed from the containers in such a manner that the ball of earth surrounding the roots remains intact, and they shall be planted and watered as hereinafter specified immediately after removal from the containers. Containers shall not be cut prior to delivery to the planting site.

Roots of plants not in containers shall be kept moist and covered until such plants are planted.

Before planting in holes or trenches, water shall be applied to the backfill with a pipe or tube inserted to the bottom of the hole until the backfill material is saturated for the full depth. Backfill for planting holes and trenches shall be placed in two (2) lifts. Water shall be applied to the backfill between lifts with a hose and allowed to fill and percolate. Additional backfill shall not be placed until the water has percolated and saturated the planting hole to its full depth.

Each tree and shrub location shall be as shown on the Plans, or as approved by the City. Plants shall be spaced as indicated on the Plans or in the Special Provisions. Plants in adjacent rows shall be staggered. Tree and shrub locations shall not conflict with any existing utilities, utility boxes, or other improvements. Plants improperly located shall be replanted by the Contractor in the proper location at no additional cost to the City.

Planting shall be performed in accordance with the details shown on the Plans and Standard Drawings. Each plant shall be placed in the planting excavation in an upright position in the center of the hole, and the space around it backfilled with planting mix so that amended soil of a thickness equal to at least half the diameter of the root ball is around the sides of the root ball. Organic matter shall not be placed beneath the plant's root ball. Plants shall be set in the backfill material in flat bottomed holes to such depth that after the soil has settled, the top of the plant ball will be one inch (1") above the bottom of the basin or even with surrounding soil where there is no basin. Plants shall be planted in such a manner that the roots will not be restricted or distorted. Soil shall not be compacted around the roots or ball of the plant during or after planting operations. The plant shall be set so that the root crown is one-half inch (1/2") or three-quarter-inch (3/4") higher than average surrounding grade. The ground around the plant shall be shaped to drain water away from the root crown or trunk of plant. Any plants that have settled deeper or stand higher than specified shall either be raised back to the required level or replaced, at the option of the Contractor.

After planting operations have been completed, the Contractor shall remove all trash, empty plant containers, tools, and equipment used in this work, and any other marks in the area caused by this work shall be repaired at the Contractor's expense, and the ground left in a neat and orderly condition.

20-4.04.A Preparation for Ground Covers

Areas to be planted with ground cover shall receive fertilizer and soil amendment, uniformly distributed and thoroughly cultivated into the top six inches of soil (6”). The rate of application for fertilizer and soil amendment shall be as shown or specified in the Contract.

The Contractor shall fine grade the planting area so that proper drainage of the entire ground cover is assured.

The Contractor shall avoid any compaction of the soils after treatment, and shall not permit traffic over such areas. In the event of such compaction, the areas shall be recultivated by the Contractor, at the Contractor’s expense.

Areas to receive a pre-emergent weed control shall be treated prior to planting as shown in the Plans or specified in the Special Provisions.

Ground covers shall be planted in the prepared soil, which shall be moist and friable, never dry or wet and soggy. The moist condition shall extend to the full depth of cultivation.

Ground cover plants shall be planted in neat, straight rows parallel to the nearest pavement or fence.

The spacing of ground cover plants shall be as shown on the Plans and in the Plant List. Plants shall be planted in neat, evenly spaced rows with staggered triangular spacing. Ground cover shall be planted around shrubs to within one foot (1’), and around trees to within eighteen inches (18”). Ground cover in one (1) gallon containers shall not be planted closer than two feet (2’) to curbs, dikes, paved areas, walls, and fences, unless otherwise shown on the Plans or specified in the Special Provisions. Ground cover from flats shall not be planted closer than six inches (6”) to curbs, dikes, paved areas, walls, and fences, unless otherwise shown or specified in the Contract.

20-4.04.B Preparation for Trees and Shrubs

Trees, shrubs, and vines in ground cover areas shall be planted before ground cover plants or cuttings are planted. Holes for trees and shrubs shall be excavated by auger unless otherwise indicated on the Plans or specified in the Special Provisions. Before an augured hole is made, the top six inches (6”) of soil amendment treated soil shall be removed and stockpiled at one side of hole.

A twelve-inch (12”) diameter by ten feet (10’) deep tree pit shall be bored prior to planting all trees fifteen (15) gallons or larger, unless otherwise specified in the Special Provisions. Boring shall take place prior to placement of topsoil. Backfill for bored pit shall be excavated bored material. Backfill shall be jetted and settled a minimum of four (4) days prior to planting trees.

When the backfill around the plant is approximately two-thirds (2/3) completed, the plant shall be thoroughly watered, after which the backfill shall be completed to the grade of the surrounding area.

Planting tablets conforming to Section 50-43.02, “Commercial Fertilizer”, of these Specifications shall be installed according to the following schedule:

Plant Container Size	Planting Tablets
One gallon	2 tablets, 21 gram
2 or 5 gallon	3 tablets, 21 gram
15 gallon	6 tablets, 21 gram
24-inch box stock or larger	10 tablets, 21 gram

No boxed, balled, or canned trees shall be planted if the rootball is broken or cracked, either before or during the process of planting.

All trees shall be provided with two (2) tree stakes. Tree ties shall be placed in one place just below the main fork or branches. Tree ties shall be nailed or tacked through knot to the tree stake with an appropriate length fastener. Tree stakes shall not be driven into the root ball. Except in turf areas, each plant shall have a soil berm constructed around it to retain water. The soil berm shall be at least four inches (4”) high and shall have a minimum inside diameter of two feet (2’) for shrubs and three feet (3’) for trees.

Each tree in a turf area shall have the turf removed in a ring around the tree base. For five-(5) gallon trees, the ring shall be twenty-four inches (24") in diameter; for fifteen-(15) gallon and larger trees, the ring shall be thirty inches (30") in diameter.

20-4.04.C Preparation for Turf

All areas to be turfed shall receive fertilizer and soil amendment, uniformly distributed at the following minimum rates per one thousand (1,000) square feet and thoroughly cultivated into the top six inches (6") of soil, unless otherwise specified in the Special Provisions:

Material	Distribution Rate per 1,000 Square Feet
Fertilizer	18 pounds
Soil Amendment	4 cubic yards

After application of fertilizer and preparation of soil has been completed, the areas to be sodded or seeded in lawn shall be brought to a smooth, uncompacted grade.

The Contractor shall fine grade so proper drainage of the entire area is assured. Rocks, soil lumps, and other deleterious materials larger than one inch (1") shall be removed and the area raked smooth.

The Contractor shall avoid any compaction of the soils after treatment, and shall not permit traffic over such areas. In case of such compaction, the areas shall be recultivated by the Contractor, at the Contractor's expense.

The soil on which the turf sod is to be placed shall be moist at the time of planting. The Contractor shall install the turf sod in conformance with the supplier's recommendations.

The sod shall be installed to the smooth finish grade with tight edges and no gaps. Sod pieces shall be placed with ends staggered. Sod shall not be stretched.

After the sod has been placed, it shall be rolled with a roller to ensure no air pockets are between the roots and the soil. Sod shall be watered immediately after installation.

Turf to be seeded shall be sown in prepared soil at the rate of twelve (12) pounds per one thousand (1,000) square feet or as shown on the Plans or specified in the Special Provisions. Seed shall be raked in lightly and rolled.

20-4.05 Watering

Water from facilities within the limits of the project may be obtained free of charge.

Trees, shrubs, and vines shall be watered immediately after planting. Water shall be applied until the backfill soil around and below the roots or ball of earth around the roots of each plant is thoroughly saturated.

Where watering is done with a hose, a water disbursement device or pressure-reducing device shall be used. Under no circumstances shall the full force of the water from the open end of a hose be allowed to fall within the basin around any plant.

Sprinklers shall water ground cover plants in areas provided with an irrigation system. Several consecutive waterings may be necessary to thoroughly saturate the soil around each plant.

Water shall be applied to plants as often and in sufficient amount to keep the plants in a healthy, growing condition during the life of the Contract.

Precautions shall be taken to prevent water from wetting vehicles, pedestrians, and pavement. The Contractor, at the Contractor's expense, shall repair any erosion or slippage of the soil caused by watering.

Compliance with the provisions in this Section does not relieve the Contractor of responsibility for the replacement of plants. The Contractor, at the Contractor's expense, shall furnish any additional watering required to maintain the plants in a growing condition.

20-4.06 Plant Replacement

Plants that show signs of failure to grow at any time during the warranty period, or which have been injured, damaged, vandalized, or stolen as to render them unsuitable for the purpose intended, as

determined by the City, shall be removed and replaced. Replacement plants shall be furnished and planted by the Contractor at the Contractor's expense. The Contractor and Landscape Architect may agree to the substitution of alternative species of plants to be used as replacements. Any damage to the finish grading caused by replanting operations and/or vandalism shall be repaired and replanted by the Contractor at the Contractor's expense and the plant establishment period extended thirty (30) additional Calendar Days after the replanting or as required by the City.

Turf damage caused by vandalism or premature use shall be repaired and reseeded before final inspection but will not cause extension of the plant establishment period. Turf failure caused by improper maintenance practices and/or weather shall be replanted and the plant establishment period extended thirty (30) additional Calendar Days after the replanting or as required by the City.

Unless otherwise permitted by the City, the Contractor shall complete replacement of unsuitable plants within one (1) week after the City marks or otherwise indicates that such plants shall be replaced.

20-4.07 Plant Establishment Work

The plant establishment period shall begin after all landscape work has been completed and shall continue until final acceptance of the Work. Unless specified in the City's contract documents, the plant establishment period shall be 180 days or until release of the entire project, whichever is later.

Plant establishment work shall include, but is not limited to, all watering, weeding, debris removal, fertilizing, cultivation, spraying, cutting, and pruning necessary to keep the plant material in a healthy, growing condition, and to keep the planted areas neat and attractive throughout the plant establishment period. Vines next to walls and fences shall be kept staked and tied.

During the plant establishment period, electric automatic irrigation systems shall be operated in the automatic mode, unless otherwise permitted by the City. Plants shall be watered to provide optimum growth conditions. The Contractor shall provide equipment and means for the proper applications of water to planted areas not provided with an irrigation system and shall make the necessary changes and additions to the irrigation system when coverage is not adequate to assist in the plant establishment.

The project site shall be kept free of trash and debris during the plant establishment period. Commercial fertilizer shall be applied to trees, shrubs, vines, and ground cover areas as specified in the Special Provisions and shall be watered into the soil after each application.

The Contractor shall notify the City at least forty-eight (48) hours prior to applying each application of commercial fertilizer. As part of the plant establishment work, five (5) Working Days prior to completion of the plant establishment period instructions shall be given to designated City maintenance personnel by a qualified person from the Contractor's personnel on the use and adjustment of the irrigation controllers installed.

During the plant establishment period, trees, shrubs, vines, and ground cover plants, planted as part of the Contract, shall be pruned by the Contractor at the Contractor's expense, as directed by the City.

Trees and shrubs shall be watered, cultivated, and sprayed as required to assure a vigorous, thriving condition from day of planting to end of plant establishment period. Weeds shall be removed during this period. During the plant establishment period, the Contractor shall not water between the hours of 7:00 a.m. and 7:00 p.m.

Should the Contractor fail, be neglectful, or negligent in this work, the City may elect to perform plant establishment work. The City will charge the Contractor the cost for performing the required work by deducting this cost from the payments due the Contractor.

Turf shall be watered, reseeded, edged, weeded, and mowed as required to assure a neat appearance and a healthy and vigorous growth from the day of seeding to the end of plant establishment period. The first mowing shall not be done until the grass is generally at least two inches (2") but less than three inches (3") high. For the first mowing and all subsequent mowing, the mower shall be set to cut at a height of one and one-half inches (1-1/2"). Subsequent mowings, as required, shall be done before the grass is three inches (3") high. Grass clippings for all mowings shall not be allowed to lie after mowing. A catcher shall be used on the mower, and grass clippings shall be removed and discarded off site. Immediately following the first mowing of the turf, turf areas shall be fertilized at the rate of eight

(8) lbs. per one thousand (1,000) square feet or as otherwise specified in the Special Provisions. Reapplication of fertilizer shall take place as directed by the City during the plant establishment period.

Just prior to the end of the plant establishment period, the Contractor shall cut all grass, weed all planting areas, and leave the work area in a neat and attractive condition. Prior to final inspection, all trash and debris shall be removed and disposed of off site. A final inspection shall then be requested by the contractor and held at a time designated by the City Inspector at which time the Plant Establishment Period may be extended due to poor establishment of all or a portion of the plant material. At the end of the plant establishment period, all plant material shall be in a healthy, growing condition.

The Contractor shall guarantee a weed free, even stand of the lawn grass, with ninety-five percent (95%) coverage, of the varieties specified. If such stand does not develop as a result of the first seeding, the Contractor shall reseed and care for thin spots until an even stand with ninety-five percent (95%) coverage is produced.

Weed control herbicides, in addition to that which is specifically required elsewhere, may be applied to planted areas at no expense to the City, if the Contractor deems it necessary. The type of herbicide to be used and method of application shall be approved by the City. Following the plant establishment period, the Contractor shall provide a warranty that guarantees all trees for one (1) year from date of Final Acceptance. The Contractor shall replace any tree that dies during the warranty period and the replacement shall be the same size container as originally designated on the Plans.

20-4.08 Inspection for Plant Establishment Work

Upon completion of the planting work and irrigation installation, the Contractor shall notify the City that the project is ready for maintenance. The City will then schedule a pre- maintenance walk-through inspection and will notify the Contractor and the Landscape Architect of the time and date. Upon inspection, if the City and the Landscape Architect find the irrigation, turf, and planting work complete and in compliance with the Contract, the City will authorize the start of the plant establishment period. Written notice will be given to the Contractor by the City as to the starting date of the plant establishment period.

20-4.09 Measurement and Payment

Planting work will be paid for at a single lump sum price or at unit prices for separate items of planting work, as designated in the Contract. Full compensation for providing planting work is included in the prices paid for the various items and no additional compensation will be paid.

20-5 IRRIGATION SYSTEMS

Irrigation system materials shall be as specified in Section 50-43, "Landscaping Materials "of these Specifications.

20-5.01 Maintain Existing Water Supply

The Contractor shall notify the City and the property owner, manager, or tenant at least forty-eight (48) hours prior to shutting off the water supply to any portion of an existing irrigation system. The City and the property owner, manager, or tenant shall also be notified when the water supply is returned to said portion of the irrigation system.

Where work is performed on an existing irrigation system, the system shall be checked by the Contractor for proper operation after the work is completed and any malfunctions resulting from the Contractor's operations shall be corrected at the Contractor's expense. If the work will interrupt the water supply for more than twenty-four (24) hours, the Contractor shall water existing landscaping, including that being maintained by City landscape maintenance forces, in the area irrigated from that water supply as often as necessary to maintain healthy plant growth. The watering will be at the Contractor's expense. At the option of the Contractor, temporary connections to an operational existing irrigation system may be made as approved by the City until the interrupted water supply has been restored.

20-5.02 Remove Existing Plants for Trenching

Where trenching for new irrigation facilities is performed in areas planted with existing trees or shrubs, the trenching alignment shall be adjusted as necessary to avoid damage to such trees or shrubs and their root systems.

Where trenching for new irrigation facilities is performed in existing ground cover or turf, sufficient plant material shall be removed to permit the proper installation of such facilities, but in no case shall the removal width exceed five feet (5'). All turf repair or ground cover replacement planting shall be performed before the start of the plant establishment period, or at least fourteen (14) Calendar Days prior to the acceptance of the Contract if there is no plant establishment period.

20-5.03 Electrical Service for Electric Automatic Irrigation Systems

Electrical service for electric automatic irrigation systems shall conform to Section 49,"Signals, Lighting and Electrical Systems", of these Specifications and Standard Drawing 5-8,"Signal, Lighting and Electrical Systems Metered Service Can", of the County Improvement Standards.

20-5.03.A Components

Electrical components for electric automatic irrigation systems shall include irrigation controllers with weatherproof enclosures, remote control valves; valve boxes; pull boxes; conductors between controllers, pumps and valves; moisture sensors; rain switches; and all appurtenances, incidentals, and accessories required for proper installation and operation of the electrical portions of such systems.

Electrical components requiring modifications to conform to the specified requirements shall have such modifications made by the manufacturer before shipment to the project. Components shall also include the electric service pedestal for the irrigation controller.

20-5.03.B Controllers

Controllers shall conform to Section 50-43.20, "Automatic Irrigation Controllers", of these Specifications and shall be installed in accordance with Standard Drawing L-17.

Controllers shall be the type and model specified in the Plans and Special Provisions. All wiring to and from the controller shall be through color-coded plugs and sockets.

All controller locations are essentially diagrammatic and shall be specifically located by the owner, or his representative.

Remote control valves shall be connected to the controller as shown on the Plans, unless otherwise directed by the City.

A complete maintenance and operations manual for each type of controller installed shall be submitted to the City.

The controller housing enclosure shall house the irrigation controller and moisture sensor control panel (if specified) and shall be installed according to the Standard Drawings.

20-5.03.C Control Wire, Electrical Conduit and Pull Boxes

Control wire shall conform to Section 50-43.33, "Irrigation Control Wires", of these Specifications. Pull boxes shall conform to Section 50-43.34, "Pull Boxes", of these Specifications.

Where control wires are installed in the same trench or opening as irrigation pipe, such control wires shall be placed at the same depth or below the pipe.

Sharp bends or kinks in the control wires will not be permitted. Control wires shall be unreeled in place alongside or in the trench and shall be carefully placed along the bottom of the trench and installed in conduit when under pavement. Under no condition shall the cable be unreeled and pulled into the trench from one end.

Not less than one foot (1') of cable slack shall be left on each side of all splices at all points where cable is connected to field equipment. The slack cable shall be placed in the trench in a series of "S" curves.

Conductors shall be run continuous without splices from controller enclosure to the valve boxes. Splices shall be made only in pull boxes or valve boxes. Splices shall be clamped and sealed with

waterproof connectors. When splices are necessary, the wire color shall not change along the wire run. Conductors from controllers to valves shall be wrapped together with electrical tape at ten-foot (10') intervals. An eighteen-inch (18") wire loop shall be provided at each valve.

Pullboxes shall be installed at the following locations:

1. At all control wire splices, except splices made in valve boxes.
2. At intervals not to exceed two hundred fifty feet (250') along any low voltage, neutral and control wire runs. Valve boxes installed along a control wire run shall not be considered as pull boxes in determining the spacing.
3. Within five feet (5') of irrigation controllers or within five feet (5') of cabinets housing one (1) or more controllers.
4. At ends of electrical conduits.
5. At other locations shown on the Plans.

When approved by the City, the Contractor may install additional pull boxes to facilitate the work. Additional pull boxes installed for the Contractor's convenience will be at the Contractor's expense.

The tops of all pull boxes shall be flush with the surrounding finished grade.

20-5.03.D Testing

Field tests shall be performed by the Contractor to demonstrate that electrical components of the irrigation systems function as specified and the system is operational.

A field test shall be satisfactorily completed prior to the start of planting, the plant establishment period, and Final Acceptance, unless otherwise authorized by the City. Field test shall be done to determine that all sprinklers function according to manufacturer's data. The Contractor shall replace any sprinklers/emitters not functioning as specified; otherwise correct system to provide satisfactory performance and retest.

The controller shall be tested in the automatic, semi-automatic, and manual operation modes.

20-5.04 Installation

20-5.04.A General

Foreign material shall be prevented from entering the irrigation system during installation. Immediately prior to assembling, all pipes, valves, and fittings shall be cleaned. All unattached ends of pipe, fittings, and valves shall be plugged or capped pending attachment of additional pipe or fittings. All lines shall be thoroughly flushed out prior to attachment of sprinklers, emitters, and other terminal fittings. Repair of irrigation systems shall be made within one (1) Calendar Day after a malfunction or damage to any portion of the system has occurred, unless otherwise directed by the City.

The system shall completely, efficiently and evenly irrigate all areas, and shall be left ready for operation to the satisfaction of the City.

The Contractor shall install the specified pipe, valves fittings, wiring, switches, controls and appurtenances at the locations shown on the Plans. The irrigation system as shown on the Plans, except for sprinkler locations, is diagrammatic. The City will, or direct the Contractor to, determine specific locations.

The Contractor shall provide, at the work site, temporary facilities required for the safe and proper storage of materials, tools, etc. These facilities shall be constructed only in locations approved by the City or as designated on the Plans, and must not interfere with the work of any other contractor. At such times as the Contractor's facilities interfere with the proper installation and completion of the Work, they shall be removed by the Contractor, at the Contractor's expense, within three (3) Calendar Days after having been notified by the City that such removal is necessary.

20-5.04.B Irrigation Sleeving

Sleeving for water line crossovers and sprinkler control crossovers shall conform to Section 50-43.18, "Irrigation Sleeving Conduit", of these Specifications.

Control wire, water supply line or lateral line pipe crossovers shall be installed in conduits or as shown on the Plans. After completing conduit backfill and prior to performing the pressure test on a water line

crossover, the Contractor shall demonstrate that the water line crossover can be moved longitudinally within the conduit. Where water line crossovers are installed for future use, the ends of such crossovers shall be capped immediately after testing. Conduits shall extend twelve inches (12") beyond edge of paving unless otherwise noted on the Plans.

The location of each conduit shall be designated by cementing a Type A pavement marker to the paved shoulder near each end and over the centerline of the conduit using a standard set type adhesive. Type A pavement markers and adhesive shall conform to the provisions in Section 85, "Pavement Markers", of the State Specifications and shall not conflict with existing markers within the project site.

20-5.04.C Water Line Crossovers

Water line crossovers are supply line or lateral line pipes installed in conduits.

Water line crossovers shall be polyvinyl chloride (PVC) plastic pipe, Class 315 or Schedule 40, with a minimum pressure rating of three hundred fifteen (315) pounds per square inch, and shall be sized as shown or specified in the Contract .

After completing conduit backfill and prior to performing the pressure test on a water line crossover, the Contractor shall demonstrate that the water line crossover can be moved longitudinally within the conduit. The water line crossover shall then be positioned to extend at least one (1) foot beyond each end of the conduit.

Where water line crossovers are installed for future use, the ends of such crossovers shall be capped immediately after testing.

20-5.04.D Trenching and Backfilling

Trenching and backfilling shall be in accordance with Standard Drawing L-18. Trenches shall be excavated only as far in advance of pipe laying as is permitted by the City. Excavated material shall be piled in a manner that will not endanger the Work and will avoid obstructing sidewalks and driveways. Open trenches and piles of dirt shall be marked and lighted as to provide safety to all pedestrians and to vehicular traffic.

Rock, pavement, and other debris encountered during trenching operation shall be removed and disposed of outside of the project limits at the Contractor's expense. The size and quantity of material to be disposed of will be determined by the City.

Trenches for plastic pipe shall be smooth and free of jagged rubble or sharp objects which will cause bending stress and uneven weight distribution to pipes, conduits and conductors during backfilling operations. Trenches for solvent-cemented plastic pipe supply lines shall be of sufficient width to permit snaking of the pipe. Other trenches shall not be excavated wider than necessary for the proper installation of pipe supply lines.

Except as otherwise specified in this Section, backfill material shall be material excavated from the trenches, compacted by an City-approved method other than ponding or jetting with water until the backfill material, after settlement, is level with the surrounding soil. When any backfilled area has settled excessively, said area shall be refilled and compacted by the Contractor at the Contractor's expense, including furnishing, placing, and compacting the fill material.

Trenches for pipe and electrical conductors may be excavated manually or with mechanical trenching equipment. Trenching equipment shall be essentially vertical so that a minimum of surface is disturbed. Blades of road graders shall not be used to excavate trenches. Trenches for pipe shall be excavated to the depths shown on the Plans.

Pipe shall have a firm, uniform bearing for the entire length of each pipe line. Wedging or blocking of pipe will not be permitted.

Trenches shall not be excessively wet and shall not contain pools of water during backfilling operations.

Extreme care shall be exercised by the Contractor while backfilling. Any materials or equipment damaged while backfilling shall be repaired or replaced by the Contractor as directed by the City, at no cost to the City.

Rock saw trenching within asphalt pavement shall be repaired in accordance with Section 14, "Restoration of Surfaces", of these Specifications.

20-5.05 Pipe

Plastic pipe supply lines, plastic pipe irrigation lines, and fittings shall be installed in accordance with the pipe and fitting manufacturers' printed instructions and these Specifications.

PVC pipe one and one-half inches (1-1/2") or less in diameter shall be cut with "PVC cutters", not by sawing. Pipe greater than one and one-half inches (1-1/2") in diameter shall be cut with a fine-toothed hacksaw and any burrs shall be removed. All pipe shall be cut straight and true.

The outside surface of the pipe and the inside surface of the fittings shall be wiped with a clean cloth to remove all dirt and moisture before the solvent cement solution is applied. Solvent cement welding shall be done in accordance with the printed instructions of the solvent manufacturer.

The male portion of each threaded plastic pipe and fitting connection shall be wrapped with at least two (2) layers of approved pipe thread sealant tape. Pipe from the service connection through a backflow preventer assembly to plastic pipe supply lines shall be copper, bronze, or as shown on the Plans, and shall be wrapped with six (6) mil plastic tape.

Plastic pipe supply lines shall be installed not less than twenty-four inches (24") below the finished grade, measured from the top of pipe, unless otherwise shown or specified in the Contract.

Valves and fittings shall be designed for and shall meet the requirements for service at an operating pressure of one hundred fifty pounds per square inch (150 psi), unless otherwise specified.

Valves and fittings shall have connections compatible with the type of pipe joint selected by the Contractor. If mechanical joints or slip-type joints are used, the Contractor shall furnish and install necessary portland cement concrete thrust blocks as specified by the City.

Guarantee shall cover workmanship of materials from the plastic pipe manufacturer for all plastic pipe and fittings. Main irrigation lines shall be Schedule 40 for lines one and one-half inches (1-1/2") and smaller and Class 315 PVC for lines two inches (2") and larger. Lateral irrigation lines shall be Class 200 PVC. PVC pipe shall conform to CS 256 and ASTM Designation: D 2241.

Pipe fittings shall be of the same material as pipe where applicable and recommended by the pipe manufacturer for the particular type of pipe to which they are to be connected, and shall conform to the following specifications.

All slip-joint PVC fittings shall be Schedule 40. All Schedule 40 PVC couplings four inches (4") in diameter or larger shall be a minimum of seven inches (7") in length.

The Contractor shall use only the solvent supplied and recommended by the manufacturer to attach PVC pipe and pipe joints. The pipe and fittings shall be thoroughly cleaned of dirt, dust, and moisture before applying solvent.

The Contractor shall make solvent weld joints with nonsynthetic bristle brush in the following sequence:

1. Apply a liberal, even coat of purple PVC primer to the pipe and fitting immediately before applying the solvent.
2. Apply a liberal even coat of solvent to the inside of the fitting and then to the outside of the pipe, making sure that the coated area is equal to the depth of the fitting socket.
3. Insert the pipe quickly into the fitting and turn the pipe approximately one-quarter (1/4) turn to distribute the solvent and remove air bubbles. Hold the joint for approximately fifteen (15) seconds so the fitting does not push off the pipe.
4. Use a clean rag and wipe off all excess solvent.
5. To prevent disturbing the last completed joint, the pipe shall not be twisted when making subsequent joints.

Allow at least fifteen (15) minutes setup time for each welded joint before moving.

On plastic to steel connections, the Contractor shall work the steel connections first. For all PVC threaded connections use thread sealing paste with virgin Teflon. In no event shall an oil base joint compound be used on a PVC joint.

The Contractor shall exercise care in handling, loading, unloading, and storing plastic pipe and fittings. All plastic pipe and fittings shall be stored under cover before using, and shall be transported in a vehicle that can support the entire length of pipe. The City will inspect all pipe before it is laid and will reject any section that is damaged or is found to be defective to a degree which will materially affect function and service of pipe. Any section of pipe that has been bent, dented, or damaged shall be discarded until said section of pipe is cut out and rejoined with a coupling.

The Contractor shall install the pipe to line and grade, as staked by the City. The Contractor's facilities for lowering the pipe into the trench shall be such that neither the pipe nor the trench will be damaged.

All pipes shall be assembled free from dirt, pipe scale, and burrs. Each section of lateral pipe shall be flushed out before sprinkler heads or emitters are attached.

Plastic pipe shall not be laid when there is water in the trench.

20-5.05.A Subsurface Dripperline

Subsurface dripperline shall conform to Section 50-43.17, "Subsurface Dripperline", of these Specifications and shall be installed in accordance with Standard Drawings L-13, L-14, and L-15.

Dripperlines shall be installed four inches (4") below finish grade unless otherwise specified on the Plans or in the Special Provisions. Dripperlines shall be installed at the spacing distance specified on the Plans or in the Special Provisions. Install dripperlines with orifices facing down and as shown on the Plans.

Dripperlines shall be installed using barbed fittings only. Subsurface dripperline systems shall be installed with flush valves and air vacuum relief valves.

20-5.05.B Valves and Valve Boxes

Irrigation control valves and valve boxes shall be of the type shown on the Plans or specified in the Special Provisions and shall conform to Sections 50-43.22, "Control Valves," and 50-43.24, "Valve Boxes", of these Specifications. Irrigation control valves shall be installed in accordance with Standard Drawings L-3 and L-4.

The Contractor shall provide and install valves as shown on the Plans and as required for the proper control of the piping systems in which they are incorporated. Main shut-off valves shall be gate valves.

Where a remote control valve is shown on the Plans as located at the edge of turf and shrub areas, it shall be placed in the shrub area.

Valves shall be placed in groupings for ease of maintenance.

Valve boxes that contain remote control valves shall be identified on the top surface of the valve box covers by the appropriate letters and numbers for controller and station numbers as shown on the Plans.

Valve boxes shall be identified by labels attached to the covers that contain the appropriate abbreviations. Remote control valves shall be labeled with the controller station. Quick coupling valves shall be labeled "QCV." Gate valves shall be labeled "GV." Labels for valve boxes shall consist of engraved letters and numbers on a two-layer white over black, exterior- sign-plate plastic. The dimensions of the labels shall be a minimum of two inches by three inches by one-eighth inch thick (2" x 3" x 1/8" thick). The letters and numbers shall be a minimum of one and one-eighth inches (1-1/8") in height. Labels shall be attached to the valve box covers with commercial quality brass or stainless steel machine screws, nuts, and washers.

Valve boxes shall be provided with valve box extensions when required.

20-5.05.C Quick Coupling Valve

Quick coupling valves shall conform to Section 50-43.21, "Quick Coupling Valves", of these Specifications and shall be installed in accordance with Standard Drawing L-5. Quick coupling valves shall be installed with Sch. 80 PVC fittings and swing joint assemblies.

Valve box for the quick coupling valve shall be ten-inch (10") diameter and installed two inches (2") above finished grade.

20-5.05.D Backflow Preventers

Backflow preventers shall conform to Section 50-43.25, "Backflow Preventers", of these Specifications and shall be installed in accordance with Standard Drawing 8-8A or 8-8B, unless otherwise specified. Backflow preventer assemblies shall consist of backflow preventer, wye strainer, gate valves, pipe fittings, portland cement concrete supports, and portland cement concrete pad for the assembly, and shall conform to the details shown on the Plans, these Specifications, and the Special Provisions. Components of the backflow preventer assembly shall be of the type shown on the Plans or specified in the Special Provisions and shall conform to Section 50-43.25, "Backflow Preventers", of these Specifications. Backflow preventer assemblies shall be from the approved list issued by the Sacramento County Environmental Health Division.

Installation of backflow preventer assemblies shall conform to City codes and ordinances regarding cross connection control installation, shall be UL listed and approved by the Research Foundation for Cross Connection Control, University of Southern California. Special attention shall be given to the minimum and maximum heights of assemblies.

The bottom of backflow preventers shall be installed twelve inches (12") above finished grade or concrete pad. Exposed top surfaces of concrete foundations and pads shall have a medium broom-finish applied parallel to the long dimension of foundations and pads. Backflow preventer assembly shall be tested by a certified backflow device tester prior to initial usage and operation of the system.

Backflow preventer installations shall include a backflow device protection blanket.

20-5.05.E Master Valve/Flow Meter Assembly

Assembly shall conform to Section 50-43.23, "Master Control Valve/Flow Sensor Assembly", of these Specifications and be installed in accordance with Standard Drawing L-6. Assembly shall be installed after the water meter and the backflow preventer at the irrigation point of connection. Assembly shall be as shown or specified in the Contract, and shall conform to Section 50-43.23, "Master Control Valve/Flow Sensor Assembly", of these Specifications.

Installation shall include providing five (5) #14 control wires, unless otherwise specified, from the master valve/flow meter assembly to the irrigation controller. Wiring shall include a hot and a common conductor for both the master valve and the flow meter and one (1) spare conductor.

20-5.05.F Air Vacuum Relief Valve

Air vacuum relief valve shall conform to Section 50-43.30, "Air Vacuum Relief Valve", of these Specifications and shall be installed in accordance with Standard Drawing L-8.

Air vacuum relief valve shall be installed in-line with a subsurface dripperline at the highest point of the system. Valve box for the air vacuum relief valve shall be ten inches (10") diameter with a two-inch (2") layer of pea gravel and installed two inches (2") above finished grade.

20-5.05.G Flush Valve

Flush valve shall conform to Section 50-43.31, "Flush Valve Assembly", of these Specifications and shall be installed in accordance with Standard Drawing L-7.

Flush valve shall be installed at the end of a subsurface dripperline system as shown on the Plans.

Valve box for the flush valve shall be ten inch (10") diameter with a two-inch (2") layer of pea gravel and installed two inches (2") above finished grade.

Installation shall include providing a plastic ball valve before the flush valve with an eighteen-inch (18") minimum length of flexible hosing or blank dripperline for the purpose of periodic system maintenance.

20-5.05.H Sprinklers and Emitters

Sprinklers and emitters shall conform to Section 50-43.19, "Sprinklers and Emitters", of these Specifications and shall be installed in accordance with Standard Drawings L-9, L-10, L-11, and L-12.

20-5.05.I Pressure Testing

Except for nonrigid pipelines and lateral irrigation lines, pressure testing for leakage shall be

performed on all supply lines installed by the Contractor. Pipelines shall be tested in place and all open ends of the pipeline and fittings shall be plugged or capped prior to testing.

The Contractor shall notify the City at least twenty-four (24) hours prior to performing any pressure test. Pressure tests shall be performed only between the hours of 8:00 a.m. and 5:00 p.m. except that no pressure tests shall be made on Saturdays, Sundays, or legal holidays, unless otherwise approved in writing by the City. Each pressure test shall be observed by the City.

Pipelines to be tested shall be filled with water, and a pressure gauge shall be connected to the pipeline. The pipe shall then be placed under a pressure of one hundred twenty-five pounds per square inch (125 psi) (except as otherwise specified below) by air or water pressure, after which the source of pressure shall be cut off, leaving the line under the required pressure.

The pressure gauge shall be calibrated from zero (0) to two hundred (200) pounds per square inch (psi) in five-(5-) pound increments and shall be accurate within a tolerance of two (2) pounds.

The Contractor shall provide the necessary pump and equipment required for this test.

The pipeline shall be tested under the required pressure for a period of one (1) hour. The pressure gauge shall remain in place until each test period has been completed. Leaks that develop in the tested portion of the system shall be located and repaired after each test period when a drop of more than two (2) pounds is indicated by the pressure gauge when testing pipe over one hundred feet (100') in length. There shall be no pressure drop permitted when testing pipe from one foot (1') to one hundred feet (100') in length. After such leaks have been repaired, the one- (1) hour pressure test shall be repeated and additional repairs made until there is no drop in pressure for pipe lengths up to one hundred feet (100'), or the drop in pressure is two pounds per square inch (2 psi) or less for pipe lengths over one hundred feet (100'). If testing by means of water pressure, air shall be expelled from the pipe prior to testing. Tests on pressure lines shall be completed prior to backfilling; however, sufficient backfill shall be placed in trenches between fittings to insure the stability of the line under pressure. In all cases, fittings and couplings must be open to visual inspection for the full period of the test. No testing shall be done until the last solvent welded joint has had twenty-four (24) hours to cure.

Where any section of the pipe system is provided with a concrete thrust block, the test shall not be made until at least five (5) Calendar Days have passed after the concrete thrust block was installed. If higher early-strength cement is used in the concrete thrust block, the test shall not be made until at least two (2) Calendar Days have elapsed.

Contractor shall disinfect potable water lines according to AWWA standards.

20-5.05.J Repairs and Coverage

All leaks that develop and all defective material in any portion of the irrigation system installed by the Contractor shall be repaired or replaced by the Contractor.

The entire system shall be checked and, if necessary, adjusted for uniform and complete coverage after installing the sprinklers. All emitters shall be checked for proper operation and, if necessary, cleaned and replaced.

The risers for sprinklers on slopes shall be set approximately perpendicular to the slope. Each series of sprinklers shall be installed and test operated. Nozzles of all sprinklers and bubblers shall be adjusted for proper rate of flow and coverage. Sprinklers and/or bubblers shall be relocated as required to produce uniform coverage.

Any revision of the proposed irrigation systems ordered by the City and necessary to achieve complete and adequate coverage and operation of the system, which is not within the scope of work, shall be paid for as extra work as provided in Section 9, "Changes and Claims", of these Specifications.

20-5.06 Measurement and Payment

Except as otherwise provided in these Specifications or the Special Provisions, full compensation for conforming to the requirements in this Section (Section 20) is included in the prices paid for the various items of work and no additional compensation will be paid.

20-6 RECORD DRAWINGS AND CONTROLLER CHARTS

The Contractor shall maintain record drawings and controller drawings in conformance with the requirements in Section 11, "Preconstruction Photographs and Record Drawings", of these Specifications and this Section (Section 20).

Prior to the final inspection, the Contractor shall submit to the City, for review and comment by the Landscape Architect, one (1) set of Record Drawings and a completed inventory sheet in the City's format verifying the quantities of each type and item of work.. The work will not be formally accepted until the Record Drawings are accepted by the Landscape Architect. Upon approval by the Landscape Architect, these records shall be delivered to the City, in reproducible form, and in good and acceptable condition prior to final acceptance of the Work. The Contractor shall provide two (2) reduced (original 11" x 17") charts for each controller. One copy shall be placed on the inside of the controller enclosure door. The second copy shall be provided to City maintenance personnel. Record Drawings shall be approved by the Landscape Architect prior to preparing the charts.

Each controller chart shall show the as-built condition of the area controlled by the automatic controller. All symbols shall be readable at the final reduced size. The controller chart shall include:

1. Connections to existing water lines.
2. Routing of pressure lines.
3. Routing of control valves.
4. Locations of remote control valves, gate valves, and quick coupling valves.
5. Other items as directed by the City.

The chart shall be a black line or blue line print and shall be colored or otherwise coded to indicate the area of coverage for each station.

When completed and approved, the chart shall be hermetically sealed between two (2) pieces of 10 mil plastic, minimum.

Each chart shall be completed and approved prior to final inspection of the irrigation system.

Sleepy Hollow Unit No. 2 Grading and Erosion Control Plan

LEE SE
122-0260-90

ALEXANDER
122-0260-91

HAMILTON
122-0260-17

122-0260-92

SCALE: 1"=50'

50' 0' 50' 100' 150'
GRAPHIC SCALE: 1"=50'

16
MIN. F.F.=68.00
PAD=67.4

17
MIN. F.F.=68.00
PAD=67.4

18
MIN. F.F.=67.00
PAD=66.4

19
MIN. F.F.=66.00
PAD=65.4

20
MIN. F.F.=66.50
PAD=65.9

1
MIN. F.F.=65.80
PAD=65.5

2
MIN. F.F.=65.40
PAD=65.0
(0.5% ± SLOPE)

3
PAD=64.9
MIN. F.F.=65.10

4
AREA TO BE COMPACTED TO 95%

15
MIN. F.F.=66.00

DETENTION POND
LOT A

LOT B

CONST. PIPE GATE PER SAC. CO. STD. DWG. L-28 W/KNOX LOCK, SEE DETAIL SHT. 3

CONST. FLARED END SECTION PER STD.

30" ACCESS ESMT

PLACE 75 LF 12" RCP CL. IV S=0.0055

CONST. PIPE INLET STRUCTURE & TRASH RACK PER STD. DWG 9-26E

PLACE 3-RAIL WELDED POLE CORRAL FENCE

MATCH TO ELEV 64.50

AREA TO BE COMPACTED TO 95%

STOP ACCESS ROAD AT 15' GATE

15' A.C. ACCESS ROAD

27.5' P.U.E

NEW 100 YEAR FLOOD PL.

MATCH TO ELEV. 64.50

LANDSCAPE EASEMENT

MATCH TO ELEV. 64.00

SEE PROFILE SHEET 9

SEE 54"SD DETAIL SHEET 13

FILL AREA

EROSION CONTROL CHART:

1. PLACE & MAINTAIN WATTLES AT SUBDIVISION BOUNDARY AND AS SHOWN PER DETAIL SHEET 13
2. PLACE & MAINTAIN GRAVEL BAGS IN DITCH.
3. INSTALL STABILIZED CONSTRUCTION SITE ACCESS PER 11-1 SEE SHEET 13 FOR DETAIL

NO.	DESCRIPTION	ENGR INIT	COUNTY APPROVAL APPROVED BY	DATE
2	ADD PADS			
3	GATES ADDED			
4	ADD PADS LOTS 1,2,3			
5	ADD STM LNS			

benchmark 1D-75 elev. 66.337

CONCRETE NAIL IN CHISELED SQUARE UP 0.02' FROM TOP OF CONCRETE ABUTMENT. NORTHEAST CORNER OF RAILROAD BRIDGE @ LAGUNA CREEK TRIBUTARY. 1200'± FROM THE END OF CORFU DRIVE. IMPROVEMENTS.

REGISTERED PROFESSIONAL ENGINEER KENT H. BAKER No. C 26487 EXPIRES 3/31/2006 CIVIL STATE OF CALIFORNIA

KENT H. BAKER RCE# 26487

PLOT DATE:
01/07/03
03/12/03
05/16/03
06/02/03
07/14/03
05/12/04
08/16/04
01/25/04

SCALE	drafted by: S.F.L.
horiz: 1"=50'	designed by: K.H.B.
vert: N/A	checked by: K.H.B.
7/2002 date	441 field book

BAKER-WILLIAMS ENGINEERING GROUP
Engineering / Surveying / Land Planning / Entitlement Processing / GPS Services
6020 Rutland Drive, Suite 19 ~ Carmichael, CA. 95608
(916) 331-4336 ~ fax (916) 331-4430 ~ office@bwengineers.com

GRADING & EROSION CONTROL PLAN
SLEEPY HOLLOW UNIT NO.2
CITY OF ELK GROVE CALIFORNIA

SHEET 16B OF 16 SHEETS
00-09-121 JOB NUMBER

RECORD DRAWING
ASSESSOR'S PARCEL NO. 122-0260-093

S:\BWEG Jobs\2000 Jobs\0091121 Sleep Hollow 2\Improvement Plans\0091121-GRD-PLAN3.dwg, Model, 5/7/2005 10:46:45 AM, David

Improvement Plans for Shops at Calvine and Bradshaw

IMPROVEMENT PLANS FOR SHOPS AT CALVINE

8400 BRADSHAW ROAD
CITY OF ELK GROVE, CA
APN: 121-0190-009

OWNER
THE ROCK CHURCH
P.O. BOX 292100
SACRAMENTO, CA 95829
CONTACT: BISHOP NATHANIEL WILSON
(916) 689-7625

DEVELOPER
ARMSTRONG DEVELOPMENT PROPERTIES, INC.
1375 EXPOSITION BLVD, SUITE 101
SACRAMENTO, CA 95815
CONTACT: WILLIAM MCDERMOTT
(916) 643-9610

ENGINEER
JACOBS
180 PROMENADE CIRCLE, SUITE 300
SACRAMENTO, CA 95834
CONTACT: GREG STEDFIELD
(916) 929-3323

GEOTECHNICAL ENGINEER
SALEM ENGINEERING GROUP, INC.
4055 W. SHAW AVENUE, SUITE 110
FRESNO, CA 93722
CONTACT: R. SAMMY SALEM
(559) 271-9700
REPORT NO: 1-208-0035

LEGEND

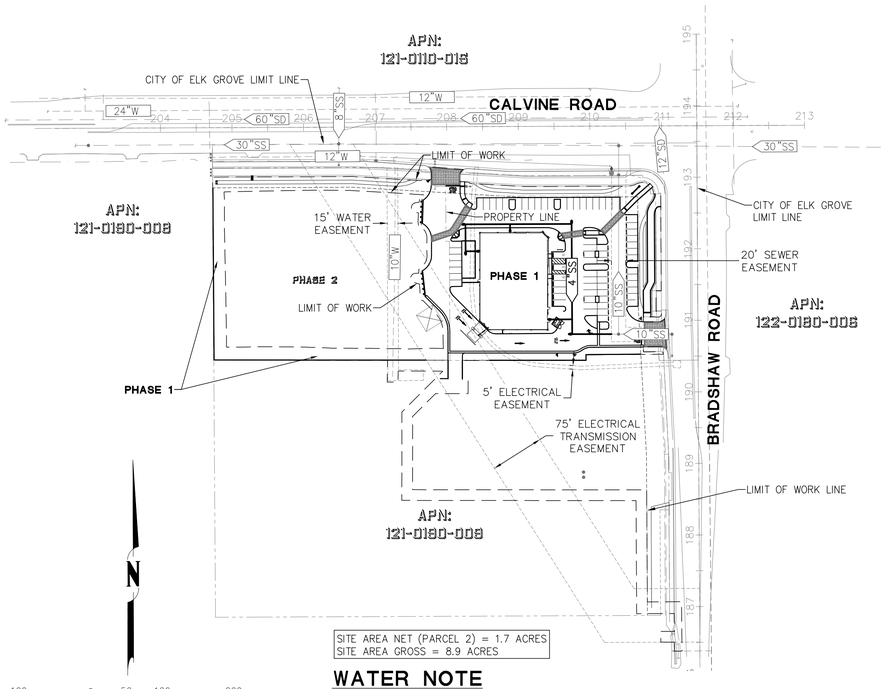
EXISTING	DESCRIPTION	PROPOSED
12"SD	STORM DRAIN PIPE	12"SD
8"SS	SANITARY SEWER PIPE	8"SS
8"W	WATER PIPE	8"W
6"FW	FIRE WATER PIPE	6"FW
E	ELECTRICAL LINE	E
OH	ELECTRICAL OVERHEAD LINE	OH
GAS	GAS LINE	GAS
IR	IRRIGATION LINE	IR
T	TELECOM LINE	T
TLFO	TELECOM LINE FIBER OPTIC	
R	GRADE BREAK RIDGE LINE	R
X	FENCE	X
DI	DRAINAGE INLET	DI
	STORM DRAIN MANHOLE	
	STORM DRAIN MONITORING WELL	
	VALLEY GUTTER	
	SANITARY SEWER MANHOLE	
	SANITARY SEWER CLEANOUT	
	SANITARY SERVICE	
	WATER PIPE FITTINGS	
	FIRE HYDRANT	
	FIRE DEPARTMENT CONNECTION	
	WATER GATE VALVE	
	DOUBLE CHECK DETECTOR ASSEMBLY	
	RP PRINCIPLE BACKFLOW ASSEMBLY	
	BUTTERFLY VAVLE	
	BLOW-OFF VALVE	
	WATER METER	
	STREET LIGHT / SITE LIGHT	
E	ELECTRICAL POWER BOX	
	POWER POLE	
	GAS METER	
	SIGN	
	OVERLAND RELEASE	
	GRADE SLOPE	2.0%
	GRADE SPOT SHOT	YYY.YY TYPE / XX.XX YY.YY

BENCH MARK
339B6 ELEV. 61.17' (U.S.G.S.)

1-1/2" BRASS DISC STAMPED "SAC. CO. B.M. 1C-10" LOCATED AT THE SOUTHEAST CORNER OF ABUTMENT OF CONCRETE BRIDGE ON BRADSHAW RD. APPROXIMATELY 0.50 MILE NORTH OF CALVINE RD. SEE L.L. M-24B, PG. BM-34, LEVELS RUN FROM U.S.C.& G.S. P-834, 1947

BASIS OF BEARINGS

BASIS OF BEARINGS ESTABLISHED FROM FOUND 2" BRASS DISK (SACRAMENTO COUNTY DEPARTMENT OF PUBLIC WORKS) AT N 1/4 SECTION 20 AND FOUND 2" BRASS DISK (SACRAMENTO COUNTY DEPARTMENT OF PUBLIC WORKS) AT THE NORTH EAST CORNER OF SECTION 20.



SITE AREA NET (PARCEL 2) = 1.7 ACRES
SITE AREA GROSS = 8.9 ACRES

WATER NOTE

PRIOR TO ABANDONING THE EXISTING 10" WATER MAIN THAT IS IN SERVICE TO THE EXISTING FIRE HYDRANT ON PARCEL 3, CONSTRUCT NEW WATER MAIN SYSTEM AND CONNECT TO EXISTING FIRE HYDRANT.

PHASING NOTE

THESE IMPROVEMENT PLANS PERTAIN TO IMPROVEMENTS WITHIN THE PHASE 1 LIMIT OF WORK LINE ONLY. REFER TO PUBLIC IMPROVEMENT PLANS FOR SHOPS AT CALVINE FOR IMPROVEMENTS AT CALVINE ROAD AND BRADSHAW ROAD FRONTAGE. PHASE 2 IMPROVEMENTS ARE NOT A PART OF THIS PLANSET UNLESS NOTED OTHERWISE.

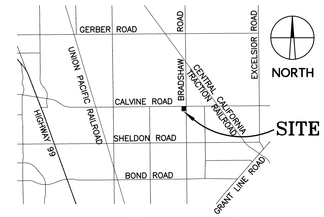
REFER TO PUBLIC IMPROVEMENT PLANS FOR SHOPS AT CALVINE 8400 BRADSHAW ROAD FOR OFF-SITE IMPROVEMENTS.

INDEX OF SHEETS

SHEET	DRAWING	DESCRIPTION
1	C0.0	TITLE SHEET
2	C0.1	GENERAL NOTES
3	C0.2	CONSTRUCTION DETAILS
4	C1.0	DEMOLITION PLAN
5	C2.0	DIMENSIONED SITE PLAN
6	C3.0	PAVEMENT PLAN
7	C3.1	PAVEMENT MARKING & SITE SIGNAGE PLAN
8	C3.2	PAVEMENT MARKING & SITE SIGNAGE DETAILS
9	C4.0	UTILITY PLAN
10	C4.1	WATER PROFILES
11	C4.2	WATER PROFILES
12	C4.3	UTILITY DETAILS
13	C4.4	FIRE ACCESS PLAN
14	C5.0	GRADING & DRAINAGE PLAN
15	C5.1	GRADING & DRAINAGE DETAILS
16	C5.2	GRADING & DRAINAGE DETAILS
17	C6.0	EROSION CONTROL PLAN
18	C6.1	EROSION CONTROL DETAILS
19	C6.2	EROSION CONTROL NOTES
20	C6.3	POST CONSTRUCTION STORMWATER QUALITY PLAN
21	–	PROTO II FENCE WALL
22	L-01	PLANTING PLAN
23	L-02	PLANTING LEGEND & NOTES
24	L-03	SOILS REPORT
25	L-04	PLANTING DETAILS
26	L-05	IRRIGATION PLAN
27	L-06	IRRIGATION LEGEND & NOTES
28	L-07	IRRIGATION DETAILS

UTILITY REPRESENTATIVES

UTILITY	COMPANY	REPRESENTATIVE	TELEPHONE
USA	USA		800-227-2600
GAS	PACIFIC GAS & ELECTRIC	CANDICE ANDRESEN	916-386-5469
PETROLEUM	KINDER MORGAN	KELLEY POWERS	916-363-1666
ELECTRICITY	SMUD	DORIS GUESSON	916-732-5808
TELEPHONE	CITIZENS COMMUNICATIONS	GREG BORDELON	916-691-5668
WATER	SACRAMENTO COUNTY WATER AGENCY	IMELDA TABBADA	916-874-4261
SEWER	SACRAMENTO AREA SEWER DISTRICT	MARSHALL CASTON	916-876-6013
DRAINAGE	CITY OF ELK GROVE	CLARENCE KORHONEN	916-478-3065
FIRE	COSUMNES COMMUNITY SERVICES DISTRICT	CAROL WRIGHT	916-405-7112
CABLE TV	COMCAST	KERRY WATERS	916-830-6754



VICINITY MAP
NOT TO SCALE

CITY OF ELK GROVE
PUBLIC WORKS

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE

PARCEL NO.:	121-0190-009
MMRP CONTROL NO.:	–
CALIFORNIA MAP COORDINATES:	THOMAS GUIDE PAGE 339-B7
COUNTY FACILITY CODE: 913511	COUNTY DRAINAGE FEE PAID: –
CITY'S PROJECT NO.:	EG-08-018

ACCEPTED BY:

CITY OF ELK GROVE PUBLIC WORKS DATE

APPROVED BY:

SACRAMENTO AREA SEWER DISTRICT DATE

APPROVED BY:

SACRAMENTO COUNTY WATER AGENCY DATE

APPROVED BY:

COSUMNES CSD – FIRE DEPARTMENT DATE

WDID # 5S34C354669

AS-BUILT

THESE RECORD DRAWINGS REFLECT THE ORIGINAL CITY APPROVED DESIGN AND CITY APPROVED REVISIONS THERETO, ALONG WITH ALL FIELD MODIFICATIONS REPORTED BY THE CONTRACTOR.

ENGINEER DATE

CALL BEFORE YOU DIG USA 800-227-2600

AS-BUILT

REV NO.	ENGR INIT.	BY	DATE

CITY ACCEPTANCE

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

DATE: AS BUILT 5/10/2010
SCALE: AS SHOWN
DRAWN BY: S. ANDERSON
DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFIELD

JACOBS
180 PROMENADE CIR. STE 300
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
TITLE SHEET

CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
C0.0
SHEET 1 OF 28

P:\Projects\333540\011\2Drawings\333540.011_Civil\1 Title Sheet.dwg 5-26-10 01:46:33 PM andersonsg

GENERAL NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF ELK GROVE STANDARD CONSTRUCTION SPECIFICATIONS AND IMPROVEMENT STANDARDS. WHERE INCONSISTENCIES EXIST, THE LATEST EDITION SHALL TAKE PRECEDENCE.
2. PUBLIC SAFETY AND TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 6-13 OF THE STANDARD CONSTRUCTION SPECIFICATIONS AND AS DIRECTED BY THE CITY INSPECTOR. SAFE VEHICULAR AND PEDESTRIAN ACCESS SHALL BE PROVIDED AT ALL TIMES DURING CONSTRUCTION.
3. THE CONSULTING ENGINEER SHALL NOTIFY THE CITY OF ELK GROVE CONSTRUCTION INSPECTION OFFICE UPON COMPLETION OF STAKING BY CALLING 916-687-3013.
4. THE CONTRACTOR SHALL NOTIFY THE CITY OF ELK GROVE CONSTRUCTION INSPECTION OFFICE TWO WORKING DAYS PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR SHALL NOT START ANY GRADING UNTIL THE CITY COMPLETES A PRE-CONSTRUCTION MEETING. PLEASE CALL 916-678-3013 TO SCHEDULE A PRE-CONSTRUCTION MEETING.
5. THE CITY OF ELK GROVE IS A MEMBER OF THE UNDERGROUND SERVICE ALERT (U.S.A.) ONE-CALL PROGRAM. THE CONTRACTOR OR ANY SUB-CONTRACTOR FOR THIS CONTRACT SHALL NOTIFY MEMBERS OF U.S.A. TWO WORKING DAYS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK BY CALLING THE TOLL-FREE NUMBER: 800-227-2600. THOMAS BROTHERS MAP PAGE 339 INDEX B7, 2005 EDITION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION. THE ENGINEER IS TO SHOW AND IDENTIFY ALL SURVEY MONUMENTS OF RECORD. THE CONTRACTOR SHALL FURNISH TO THE CITY OF ELK GROVE A RECORDED CORNER RECORD FOR EACH MONUMENT AS DESCRIBED IN SECTION 8771 (B) OF THE LAND SURVEYORS ACT AT THE PRE-CON MEETING. ALL SUCH MONUMENTS OR MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
7. ALL SERVICE SEWERS SHALL HAVE FOUR TO FIVE FEET OF COVER AT THE PROPERTY LINE OR RIGHT-OF-WAY, UNLESS OTHERWISE NOTED ON PLANS.
8. EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH SECTION 11 OF THE CITY OF ELK GROVE IMPROVEMENT STANDARDS.
9. THE DEVELOPER OR CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL SIGNING AND STRIPING FOR PUBLIC SAFETY, AS DETERMINED BY THE CITY OF ELK GROVE.
10. SIDEWALK RAMPS AND DRIVEWAYS SHALL CONFORM TO THE CITY OF ELK GROVE STANDARDS.
11. IF THIS PROJECT INCLUDES FACILITIES TO BE REIMBURSED BY A FINANCING DISTRICT AND/OR FEE PROGRAM, THE CITY'S "REIMBURSEMENT POLICIES AND PROCEDURES FOR PRIVATELY CONSTRUCTED PUBLIC FACILITIES", AVAILABLE FROM THE CITY ENGINEER, MUST BE FOLLOWED TO ENSURE REIMBURSEMENT ELIGIBILITY. ALL CHANGES IN WORK THAT AFFECTS REIMBURSABLE FACILITIES SHALL BE COORDINATED WITH THE CITY'S PROGRAM MANAGER BY CALLING 916-478-2256.

SUPPLEMENTAL NOTES:

1. PRIOR TO REQUESTING FINAL ACCEPTANCE OF IMPROVEMENTS, THE CONSULTING ENGINEER SHALL SET SURVEY MONUMENTS AS SPECIFIED IN SECTION 12-1, CITY OF ELK GROVE IMPROVEMENT STANDARDS.
2. WHENEVER THE WORK AREA IS ADJACENT TO A TRAFFIC LANE AND THERE IS A CUT, DITCH OR TRENCH MORE THAN TWO INCHES DEEP, THE CONTRACTOR SHALL MAINTAIN CONTINUOUS BARRICADES SPACED AT APPROXIMATELY 20-FOOT INTERVALS FOR THE FIRST 100 FEET FROM THE BEGINNING OF THE CUT, DITCH OR TRENCH, AND AT APPROXIMATELY 50-FOOT INTERVALS THEREAFTER. IF THE CUT, DITCH OR TRENCH IS MORE THAN TEN FEET FROM A TRAFFIC LANE, THE BARRICADE SPACING MAY BE GREATER BUT SHALL NOT EXCEED 200 FEET.
3. UNLESS SPECIFICALLY SET FORTH AS SPECIAL PROVISIONS, ALL MARKED LANES OF TRAFFIC SHALL BE UNOBSTRUCTED ON CALVINE ROAD AND/ OR BRADSHAW ROAD IN EACH DIRECTION DURING THE PEAK TRAFFIC HOURS OF 7:00 TO 8:00AM AND 3:30 TO 6:00PM. A TRAFFIC LANE SHALL BE CONSIDERED UNOBSTRUCTED IF IT IS SURFACED WITH ASPHALT AND IS AT LEAST TEN FEET WIDE.
4. NO PAVEMENT WORK WILL OCCUR WITHIN THE ROAD RIGHT OF WAY PRIOR TO COMPLETION OF ANY NECESSARY UTILITY POLE RELOCATION WITHIN THAT RIGHT OF WAY.
5. A TRAFFIC CONTROL PLAN SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO BOTH THE CITY OF ELK GROVE CONSTRUCTION INSPECTION AND THE COUNTY OF SACRAMENTO DEPARTMENT OF TRANSPORTATION FOR REVIEW AT LEAST 15 DAYS PRIOR TO COMMENCEMENT OF ANY WORK. AN ENCROACHMENT PERMIT OR PLAN APPROVAL MUST FIRST BE OBTAINED FROM BOTH THE CITY AND COUNTY PRIOR TO ANY WORK COMMENCING WITHIN THE CITY AND COUNTY RIGHT-OF-WAYS.
6. EROSION AND SEDIMENT CONTROL MEASURES FOR THIS PROJECT SHALL BE IN SUBSTANTIAL COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THE PROJECT IN ACCORDANCE WITH THE STATE'S GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES. ACCORDING TO STATE LAW, IT IS THE RESPONSIBILITY OF THE PROPERTY OWNER THAT THE SWPPP IS KEPT UP TO DATE TO REFLECT CHANGING SITE CONDITIONS AND IS AVAILABLE ON THE PROJECT SITE AT ALL TIMES FOR REVIEW BY LOCAL AND STATE INSPECTORS.
7. THE PLANNING DIVISION SHALL BE NOTIFIED IMMEDIATELY IF ANY PREHISTORIC, ARCHAEOLOGIC, OR PALEONTOLOGIC ARTIFACT IS UNCOVERED DURING CONSTRUCTION. ALL CONSTRUCTION MUST STOP AND AN ARCHAEOLOGIST THAT MEETS THE SECRETARY OF THE INTERIOR'S PROFESSIONAL QUALIFICATIONS STANDARDS IN PREHISTORIC OR HISTORICAL ARCHAEOLOGY SHALL BE RETAINED TO EVALUATE THE FINDS AND RECOMMEND APPROPRIATE ACTION.
8. ALL CONSTRUCTION MUST STOP IF ANY HUMAN REMAINS ARE UNCOVERED, AND THE COUNTY CORONER MUST BE NOTIFIED ACCORDING TO SECTION 7050.5 OF CALIFORNIA'S HEALTH AND SAFETY CODE. IF THE REMAINS ARE DETERMINED TO BE NATIVE AMERICAN, THE PROCEDURES OUTLINED IN CEQA SECTION 15064.5(D) AND (E) SHALL BE FOLLOWED.

DRAINAGE NOTES:

1. ALL CONSTRUCTION AND MATERIALS FOR DRAINAGE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF ELK GROVE IMPROVEMENT STANDARDS AND STANDARD CONSTRUCTION SPECIFICATIONS. WHERE DISCREPANCIES EXIST, APPROPRIATE NOTES SHALL BE ADDED TO THE PLANS, TAKING PRECEDENCE OVER THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. THE MINIMUM COVER REQUIREMENTS DURING CONSTRUCTION FOR TEMPORARY CONSTRUCTION VEHICLE LOADING SHALL BE 4-FEET FOR METAL AND PLASTIC PIPE, AND 3-FEET FOR REINFORCED CONCRETE PIPE.
3. THE CONTRACTOR SHALL PLACE THE PROPER STRENGTH PIPE IF TRENCH CONDITIONS ENCOUNTERED DIFFER FROM THE DESIGN TRENCH.
4. STORM DRAIN PIPES IN THE PUBLIC RIGHT-OF-WAY (ROW) AND DRAINAGE EASEMENTS SHALL CONFORM TO THE STANDARD CONSTRUCTION SPECIFICATIONS:
   A. DRAINAGE PIPE MATERIAL SHALL CONFORM TO SECTION 36 AND SECTION 50 (EXCLUDING 50-20, WHICH IS NOT ALLOWED).
   B. DRAINAGE MANHOLES SHALL CONFORM TO SECTION 39.
5. STORM DRAIN PIPES SHALL BE TESTED IN CONFORMANCE WITH THE STANDARD CONSTRUCTION SPECIFICATIONS:
   A. DRAINAGE PIPES, INCLUDING DRAIN INLET LATERALS, SHALL BE TESTED IN CONFORMANCE WITH SECTION 38-9.
   B. STORM DRAIN MANHOLES SHALL BE TESTED IN CONFORMANCE WITH SECTION 39-4.01.

DRAINAGE NOTES (CONTINUED):

6. RESILIENT CONNECTORS, IN CONFORMANCE WITH SECTION 39-2.01 AND STANDARD DRAWING (STD. DWG.) SD-7 OF THE STANDARD CONSTRUCTION SPECIFICATIONS, ARE REQUIRED BETWEEN PRE-CAST MANHOLE AND PIPE, AND BETWEEN PRE-CAST DROP INLET AND PIPE. WATER STOPS ARE REQUIRED FOR PIPE TO CAST-IN-PLACE MANHOLE/ DROP INLET CONNECTIONS.
7. EROSION CONTROL STRUCTURES (STD. DWGS. SD-26, SD-27, SD-28.1, SD-28.2, SD-28.3, AND SD-28.4) SHALL BE CLASS B CONCRETE, NOT GROUTED COBBLE.
8. ALL DRAINAGE INLETS IN THE PUBLIC ROW AND DRAINAGE EASEMENTS SHALL HAVE A PERMANENT STORM DRAIN MESSAGE "NO DUMPING – FLOWS TO CREEK" OR OTHER APPROVED MESSAGE CONSISTENT WITH SECTION 11-15 AND STD. DWGS. SQ-10.1 AND SQ-10.2 OF THE CITY OF ELK GROVE IMPROVEMENT STANDARDS.

COSUMNES CSD FIRE DEPARTMENT:

1. APPROVED PLANS SIGNED BY ALL AGENCIES SHALL BE LOCATED AT THE JOB SITE. PLANS SHALL BE APPROVED PRIOR TO ANY CONSTRUCTION.
2. ALL REQUIRED ROADWAYS, STREET SIGNS, ADDRESSES, WATER MAINS, FIRE HYDRANTS DESIGNATED FOR A PROJECT SHALL BE INSTALLED AND ABLE TO PROVIDE THE REQUIRED FIRE FLOW PRIOR TO ANY COMBUSTIBLE STORAGE OR CONSTRUCTION.
3. COMMERCIAL PROJECTS SHALL BE CAPABLE OF PROVIDING A MINIMUM OF 3000 GALLONS PER MINUTE (GPM) AT 20 PSI RESIDUAL PRESSURE WITH A STATIC PRESSURE OF 50 PSI.
4. MANUFACTURER'S SPECIFICATION SHEETS SHALL BE PROVIDED TO THE FIRE INSPECTOR FOR REVIEW AND APPROVAL PRIOR TO THE UNDERGROUND HYDROSTATIC TEST FOR UNDERGROUND PIPE, FITTINGS, VALVES AND OTHER FIRE PROTECTION APPURTENANCES.
5. A FIRE DEPARTMENT INSPECTION IS REQUIRED FOR ALL FIRE PROTECTION EQUIPMENT, INCLUDING BUT NOT LIMITED TO, UNDERGROUND PIPING, THRUST BLOCKS (IN PLACE) AND OTHER RESTRAINING SYSTEMS, HYDROSTATIC TESTING, FLUSHING OF FIRE SERVICE LINE, CONDUIT FOR PIV TAMPER SWITCH, AND TRACER WIRE.
6. FIRE SERVICE LINES FOR ALL FIRE SUPPRESSION SYSTEMS SHALL NOT PASS THROUGH A BUILDING / STRUCTURE FOOTING WITHOUT PRIOR APPROVAL FROM THE COSUMNES CSD FIRE DEPARTMENT (CCSDFD) AND THE ENGINEER OF RECORD.
7. FIRE ACCESS ROAD REQUIREMENTS ARE AS FOLLOWS: THE SLOPE OF ACCESS ROADWAYS SHALL NOT EXCEED 10% FOR ASPHALT AND 5% FOR CONCRETE. THE ROADWAYS SHALL BE CONSTRUCTED TO A 20 FOOT MINIMUM WIDTH HAVING A TURNING RADIUS OF 25 FEET INSIDE AND 50 FEET OUTSIDE WITH A MINIMUM OF 3 INCHES OF AC OVER 6 INCHES OF AB AND SHALL HAVE GOOD DRAINAGE. IN ADDITION, ROADWAYS SHALL BE ABLE TO SUPPORT 65,000 POUNDS GROSS VEHICLE WEIGHT (GVW) AND SHALL HAVE A COMPACTION OF 95%.
8. ALL NEW COMMERCIAL BUILDINGS IN EXCESS OF 10,000 SQUARE FEET OF FLOOR AREA SHALL PROVIDE TWO SEPARATE POINTS OF FIRE DEPARTMENT ACCESS THAT MEET THE STANDARDS OF THE CCSDFD. SEPARATE POINTS OF ACCESS SHALL BE LOCATED AT A MINIMUM OF 500 FEET APART AND BE IN PLACE PRIOR TO COMBUSTIBLE CONSTRUCTION. IN ADDITION, COMMERCIAL BUILDINGS IN EXCESS OF 10,000 SQUARE FEET SHALL PROVIDE TWO SEPARATE POINTS OF CONNECTION TO THE PUBLIC WATER SYSTEM.
9. THE INSTALLATION OF ON-SITE OR OFF-SITE FIRE PROTECTION EQUIPMENT INCLUDING FIRE HYDRANTS, WATER MAINS AND UNDERGROUND PIPING INSTALLATIONS SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS OF THE CCSDFD AND THE WATER PURVEYOR HAVING JURISDICTION. BOTH THE FIRE DEPARTMENT AND THE WATER PURVEYOR SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF ANY SHUT DOWN OR INTERRUPTION OF NORMAL SERVICE TO FIRE HYDRANTS OR FIRE SPRINKLERED BUILDINGS. DEVIATIONS FROM APPROVED STANDARDS AND THE APPROVED PLANS SHALL REQUIRE WRITTEN APPROVAL FROM CCSDFD PRIOR TO INSTALLATION.
10. ALL REQUIRED TRAFFIC SIGNALING INSTALLATIONS ERECTED OR MODIFIED BY THIS DEVELOPMENT SHALL BE PROVIDED WITH TRAFFIC PREEMPTION DEVICES OF A TYPE APPROVED BY CCSDFD. THESE DEVICES SHALL BE INSTALLED AND FUNCTIONING PRIOR TO OCCUPANCY AND AT NO COST TO CCSDFD. THESE DEVICES SHALL BE CLEARLY DESIGNATED ON THE CIVIL PLANS.
11. THE INSTALLATION OF ROADWAY GATES, ADDRESSES, LANDSCAPING, PIPE BOLLARDS, FUEL TANKS, MASONRY SOUND WALLS, TREE WELLS, AND/OR ALL OTHER TRAFFIC CALMING DEVICES IS SUBJECT TO THE STANDARDS OF THE CCSDFD. ALL PROPOSED TRAFFIC-MITIGATION PLANS SHALL BE SUBMITTED TO THE CCSDFD FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. ALL GATES OBSTRUCTING FIRE LANES OR ROADWAYS SHALL COMPLY WITH APPENDIX VII OF THE 2002 SACRAMENTO COUNTY FIRE CODE.
12. HYDRANTS SHALL BE CLOW 960 FACTORY-PAINTED WHITE. HYDRANTS SHALL BE INSTALLED WITH THE LOWEST VALVE STEM 20 INCHES ABOVE FINISHED GRADE. FLANGE BOLTS SHALL BE ACCESSIBLE FOR SERVICING. THE 4½ INCH PUMPER CONNECTION SHALL BE A MAXIMUM OF TWO (2) FEET BEHIND THE FINISHED WALK OR CLEARANCE FROM FIRE PROTECTION EQUIPMENT. THE 4 ½ INCH PUMPER CONNECTION SHALL FACE THE FIRE LANE OR ROADWAY AS DESIGNATED BY THE FIRE INSPECTOR.
13. FIRE DEPARTMENT CONNECTIONS AND POST INDICATOR VALVES SHALL BE PAINTED RED WITH THE BUILDING ADDRESS STENCILED IN WHITE AND EQUIPPED WITH A BREAKAWAY PADLOCK.
14. "NO PARKING-FIRE LANE" SIGNS AND/OR RED PAINTED CURBS SHALL BE INSTALLED AS PER CCSDFD GUIDELINES. ALL RAISED CURBS IN "NO PARKING" AREAS SHALL BE PAINTED RED WITH ACCEPTABLE RED CURB PAINT. LETTERING SHALL BE 3" HIGH, WHITE AND HAVE A 3/4" STROKE. MARKINGS SHALL BE LOCATED EVERY 50 FEET.
15. LANDSCAPING SHALL CONFORM TO THE CCSDFD WRITTEN GUIDELINES. ALL LANDSCAPING SHALL PROVIDE A MINIMUM OF 3 FEET OF CLEARANCE (WHEN FULLY GROWN) FROM FIRE PROTECTION EQUIPMENT.
16. WHEN REQUIRED, VEHICLE BARRIERS SHALL BE INSTALLED FOR THE PROTECTION OF FIRE DEPARTMENT EQUIPMENT. BARRIERS CONSIST OF A MINIMUM OF 4" PIPE, CONCRETE FILLED, THREE FEET TALL AND THREE FEET DEEP FROM FINISHED GRADE AND A MINIMUM OF THREE FEET AWAY FROM ALL FIRE PROTECTION EQUIPMENT SPACED A MAXIMUM OF 4 FEET APART FROM EACH OTHER.
17. ALL STREET NAME SIGNS SHALL BE PROVIDED AT THE TIME ROADWAYS ARE SURFACED.
18. ALL ADDRESSES SHALL BE POSTED AT THE PROJECT SITE AT THE TIME CONSTRUCTION BEGINS.
19. CONSTRUCTION EQUIPMENT, INCLUDING PORTABLE RESTROOMS, BUILDING MATERIALS, WORKER VEHICLES, DELIVERY VEHICLES AND THE LIKE SHALL NOT OBSTRUCT FIRE HYDRANTS OR THE FIRE LANE AT ANY TIME.
20. THE WETLANDS/RIPARIAN CORRIDORS OF CREEKS CREATE AN UNUSUAL FIRE HAZARD AND CHALLENGE TO EMERGENCY RESPONDERS. THE FOLLOWING REQUIREMENTS APPLY TO YOUR PROJECT AND SHALL BE DESIGNATED ON THE CIVIL PLANS:
    - PROVIDE NON-COMBUSTIBLE FENCES ALONG ALL DEVELOPED AREAS ADJACENT TO WETLANDS, CREEKS OR OPEN SPACES.
    - PROVIDE ACCESS TO ALL WETLAND CORRIDORS AT THE END OF CUL-DE-SACS VIA ROLLED CURBS AND GATES WITH PIPE BOLLARDS.
    - BIKE LANES ADJACENT TO CREEKS SHALL BE A MINIMUM OF 10 FEET WIDE WITH A TURNING RADIUS OF NOT LESS THAN 35 FEET INSIDE AND 45 FEET OUTSIDE DIAMETERS.
    - ANY BRIDGES OVER CREEKS OR WETLAND AREAS SHALL BE CAPABLE OF SUPPORTING 65,000 GVW.
    - PROVIDE A LEAST TEN (10) FEET OF GREENBELT OR OTHER DEFENSIBLE SPACE BETWEEN NON-COMBUSTIBLE FENCES AND THE CREEK/WETLANDS AREA.

KINDER MORGAN PETROLEUM NOTES:

1. KINDER MORGAN SHALL BE PROVIDED SUFFICIENT PRIOR NOTICE OF PLANNED ACTIVITIES INVOLVING EXCAVATION, BLASTING, OR ANY TYPE OF CONSTRUCTION ON KINDER MORGAN'S ROW TO DETERMINE AND RESOLVE ANY LOCATION, GRADE OR ENCROACHMENT PROBLEMS AND PROVIDE PROTECTION OF FACILITIES AND THE PUBLIC BEFORE THE ACTUAL WORK IS TO TAKE PLACE.
2. ONLY FACILITIES SHOWN ON DRAWINGS REVIEWED BY KINDER MORGAN WILL BE APPROVED FOR INSTALLATION ON KINDER MORGAN'S ROW. ALL DRAWING REVISIONS THAT EFFECT FACILITIES PROPOSED TO BE PLACED ON KINDER MORGAN'S ROW MUST BE APPROVED BY KINDER MORGAN IN WRITING.
3. ANY REPAIR TO SURFACE FACILITIES FOLLOWING FUTURE PIPELINE MAINTENANCE OR REPAIR WORK BY KINDER MORGAN WILL BE AT THE EXPENSE OF THE DEVELOPER OR LANDOWNER.
4. THE FOREIGN UTILITY SHOULD BE ADVISED THAT KINDER MORGAN MAINTAINS CATHODIC PROTECTION ON THEIR PIPELINES. THE FOREIGN UTILITY MUST COORDINATE THEIR CATHODIC PROTECTION SYSTEM WITH KINDER MORGAN'S. AT THE REQUEST OF KINDER MORGAN FOREIGN UTILITIES SHALL INSTALL (OR ALLOW TO BE INSTALLED) CATHODIC PROTECTION TESTS LEADS AT ALL CROSSINGS FOR THE PURPOSES OF MONITORING CATHODIC PROTECTION. THE KINDER MORGAN CATHODIC PROTECTION TECHNICIAN AND THE FOREIGN UTILITY CATHODIC PROTECTION TECHNICIAN SHALL PERFORM POST CONSTRUCTION CATHODIC PROTECTION INTERFERENCE TESTING. INTERFERENCE ISSUES SHALL BE RESOLVED BY MUTUAL AGREEMENT BETWEEN FOREIGN UTILITY AND KINDER MORGAN. ALL COSTS ASSOCIATED WITH THE CORRECTION OF CATHODIC PROTECTION PROBLEMS ON KINDER MORGAN PIPELINE AS A RESULT OF THE FOREIGN UTILITY CROSSING SHALL BE BORNE BY THE FOREIGN UTILITY FOR A PERIOD OF ONE YEAR FROM THE DATE THE FOREIGN UTILITY IS PUT IN SERVICE.
5. THE CONTINUED INTEGRITY OF KINDER MORGAN'S PIPELINES AND THE SAFETY OF ALL INDIVIDUALS IN THE AREA OF PROPOSED WORK NEAR KINDER MORGAN'S FACILITIES ARE OF THE UTMOST IMPORTANCE. THEREFORE, CONTRACTOR MUST MEET WITH KINDER MORGAN REPRESENTATIVES PRIOR TO CONSTRUCTION TO PROVIDE AND RECEIVE NOTIFICATION LISTINGS FOR APPROPRIATE AREA OPERATIONS AND EMERGENCY PERSONNEL. KINDER MORGAN'S ON-SITE REPRESENTATIVE WILL REQUIRE DISCONTINUATION OF ANY WORK THAT, IN HIS OPINION, ENDANGERS THE OPERATIONS OR SAFETY OF PERSONNEL, PIPELINES OR FACILITIES.
6. A KINDER MORGAN REPRESENTATIVE SHALL DO ALL LINE LOCATING. A KINDER MORGAN REPRESENTATIVE SHALL BE PRESENT FOR HYDRAULIC EXCAVATION. THE USE OF PROBING RODS FOR PIPELINE LOCATING SHALL BE PERFORMED BY KINDER MORGAN REPRESENTATIVES ONLY, TO PREVENT UNNECESSARY DAMAGE TO THE PIPELINE COATING.
7. NOTIFICATION SHALL BE GIVEN TO KINDER MORGAN AT LEAST 72 HOURS BEFORE START OF CONSTRUCTION. A SCHEDULE OF ACTIVITIES FOR THE DURATION OF THE PROJECT MUST BE MADE AVAILABLE AT THAT TIME TO FACILITATE THE SCHEDULING OF KINDER MORGAN, INC.'S WORK SITE REPRESENTATIVE. ANY CONTRACTOR SCHEDULE CHANGES SHALL BE PROVIDED TO KINDER MORGAN, INC. IMMEDIATELY.
8. HEAVY EQUIPMENT WILL NOT BE ALLOWED TO OPERATE DIRECTLY OVER KINDER MORGAN PIPELINES OR IN KINDER MORGAN ROW UNLESS WRITTEN APPROVAL IS OBTAINED FROM KINDER MORGAN. HEAVY EQUIPMENT SHALL ONLY BE ALLOWED TO CROSS KINDER MORGAN PIPELINES AT LOCATIONS DESIGNATED BY KINDER MORGAN, INC. CONTRACTOR SHALL COMPLY WITH ALL PRECAUTIONARY MEASURES REQUIRED BY KINDER MORGAN TO PROTECT ITS PIPELINES. WHEN INCLEMENT WEATHER EXISTS, PROVISIONS MUST BE MADE TO COMPENSATE FOR SOIL DISPLACEMENT DUE TO SUBSIDENCE OF TIRES. EQUIPMENT EXCAVATING WITHIN TEN (10) FEET OF KINDER MORGAN PIPELINES WILL HAVE A PLATE GUARD INSTALLED OVER THE TEETH TO PROTECT THE PIPELINE.
9. EXCAVATING OR GRADING WHICH MIGHT RESULT IN EROSION OR WHICH COULD RENDER THE KINDER MORGAN ROW INACCESSIBLE SHALL NOT BE PERMITTED UNLESS THE CONTRACTOR/DEVELOPER/OWNER AGREES TO RESTORE THE AREA TO ITS ORIGINAL CONDITION AND PROVIDE PROTECTION TO KINDER MORGAN'S FACILITY.
10. A KINDER MORGAN REPRESENTATIVE SHALL BE ON-SITE TO OBSERVE ANY CONSTRUCTION ACTIVITIES WITHIN TEN (10) FEET OF A KINDER MORGAN PIPELINE OR ABOVEGROUND APPURTENANCE. THE CONTRACTOR SHALL NOT WORK WITHIN THIS DISTANCE WITHOUT A KINDER MORGAN REPRESENTATIVE BEING ON SITE. ONLY HAND EXCAVATION SHALL BE PERMITTED WITHIN TWO (2) FEET OF KINDER MORGAN PIPELINES, VALUES AND FITTINGS UNLESS STATE REQUIREMENTS ARE MORE STRINGENT. HOWEVER, PROCEED WITH EXTREME CAUTION WHEN WITHIN THREE (3) FEET OF THE PIPE.
11. A KINDER MORGAN REPRESENTATIVE WILL MONITOR CONSTRUCTION ACTIVITY WITHIN 25 FEET OF KINDER MORGAN FACILITIES DURING AND AFTER THE ACTIVITIES TO VERIFY THE INTEGRITY OF THE PIPELINE AND TO ENSURE THE SCOPE AND CONDITIONS AGREED TO HAVE NOT CHANGED. MONITORING MEANS TO CONDUCT SITE INSPECTIONS ON A PRE-DETERMINED FREQUENCY BASED ON ITEMS SUCH AS: SCOPE OF WORK, DURATION OF EXPECTED EXCAVATOR WORK, TYPE OF EQUIPMENT, POTENTIAL IMPACT ON PIPELINE, COMPLEXITY OF WORK AND/OR NUMBER OF EXCAVATORS INVOLVED.
12. NO BLASTING SHALL BE ALLOWED WITHIN 1000 FEET OF KINDER MORGAN'S FACILITIES UNLESS BLASTING NOTIFICATION IS GIVEN TO KINDER MORGAN INCLUDING COMPLETE BLASTING PLAN DATA. A PRE-BLAST MEETING SHALL BE CONDUCTED BY THE ORGANIZATION RESPONSIBLE FOR BLASTING. KINDER MORGAN SHALL BE INDEMNIFIED AND HELD HARMLESS FROM ANY LOSS, COST OF LIABILITY FOR PERSONAL INJURIES RECEIVED, DEATH CAUSED OR PROPERTY DAMAGE SUFFERED OR SUSTAINED BY ANY PERSON RESULTING FROM ANY BLASTING OPERATIONS UNDERTAKEN WITHIN 500 FEET OF ITS FACILITIES. THE ORGANIZATION RESPONSIBLE FOR BLASTING SHALL BE LIABLE FOR ANY AND ALL DAMAGES CAUSED TO KINDER MORGAN'S FACILITIES AS A RESULT OF THEIR ACTIVITIES WHETHER OR NOT KINDER MORGAN REPRESENTATIVES ARE PRESENT. KINDER MORGAN SHALL HAVE A SIGNED AND EXECUTED BLASTING INDEMNIFICATION AGREEMENT BEFORE AUTHORIZED PERMISSION TO BLAST CAN BE GIVEN.
13. ANY CONTACT WITH ANY KINDER MORGAN FACILITY, PIPELINE, VALVE SET, ETC. SHALL BE REPORTED IMMEDIATELY TO KINDER MORGAN. IF REPAIRS TO THE PIPE ARE NECESSARY, THEY WILL BE MADE AND INSPECTED BEFORE THE SECTION IS RE-COATED AND THE LINE IS BACK-FILLED.
14. KINDER MORGAN PERSONNEL SHALL INSTALL ALL TEST LEADS ON KINDER MORGAN FACILITIES.
15. BURNING OF TRASH, BRUSH, ETC. IS NOT PERMITTED WITHIN THE KINDER MORGAN ROW.
16. ALL CONTRACTORS, AND THEIR SUBCONTRACTORS, WORKING ON COMPANY EASEMENTS SHALL MAINTAIN THE FOLLOWING TYPES OF INSURANCE POLICIES AND MINIMUM LIMITS OF COVERAGE. ALL INSURANCE CERTIFICATE CARRIED BY CONTRACTOR AND GRANTEE SHALL INCLUDE THE FOLLOWING STATEMENT: "KINDER MORGAN AND ITS AFFILIATED OR SUBSIDIARY COMPANIES ARE NAMED AS ADDITIONAL INSURED ON ALL ABOVE POLICIES (EXCEPT WORKER'S COMPENSATION) AND WAIVER OF SUBROGATION IN FAVOR OF KINDER MORGAN AND ITS AFFILIATED OR SUBSIDIARY COMPANIES, THEIR RESPECTIVE DIRECTORS, OFFICERS, AGENTS AND EMPLOYEES APPLIES AS REQUIRED BY WRITTEN CONTRACT." CONTRACTOR SHALL FURNISH CERTIFICATES OF INSURANCE EVIDENCING INSURANCE COVERAGE PRIOR TO COMMENCEMENT OF WORK AND SHALL PROVIDE THIRTY (30) DAYS NOTICE PRIOR TO THE TERMINATION OR CANCELLATION OF ANY POLICY.

SASD SANITARY SEWER NOTES:

1. ALL CONSTRUCTION AND MATERIALS USED WITHIN THE PIPE ZONE SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE SASD DESIGN STANDARDS AND THE SACRAMENTO COUNTY STANDARD CONSTRUCTION SPECIFICATIONS. THE LATEST EDITION SHALL TAKE PRECEDENCE. THE CONTRACTOR SHALL OBTAIN AND USE ALL APPLICABLE ADDENDUMS. INTERMEDIATE BACKFILL, FINAL BACKFILL, AND ALL ROAD SECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GOVERNING JURISDICTION STANDARD CONSTRUCTION SPECIFICATIONS.
2. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE INSPECTION OFFICE FIVE (5) WORKING DAYS IN ADVANCE OF BEGINNING WORK:
   A. FOR COLLECTOR FACILITIES
      I. FOR PROJECTS LOCATED WITHIN THE UNINCORPORATE COUNTY, CITY OF CITRUS HEIGHTS, CITY OF RANCHO CORDOVA AND THE CITY OF ELK GROVE CONTACT THE SACRAMENTO COUNTY CONSTRUCTION MANAGEMENT AND INSPECTION DIVISION AT 916-875-2700.
      II. FOR PROJECTS LOCATED WITHIN THE CITY OF SACRAMENTO LIMITS CONTACT THE PUBLIC UTILITIES DEPARTMENT AT 916-808-6810.
   B. FOR TRUNK FACILITIES
      I. CONTACT THE SACRAMENTO COUNTY CONSTRUCTION MANAGEMENT AND INSPECTION DIVISION AT 916-875-2700.
3. PLANS SHALL BE RESUBMITTED FOR APPROVAL IF CONSTRUCTION OF SEWER FACILITIES HAS NOT BEGUN WITHIN ONE YEAR AFTER THE FINAL APPROVAL DATE OF THESE IMPROVEMENT PLANS.
4. ALL WORK SHALL BE INSPECTED BY THE SASD INSPECTION STAFF PRIOR TO BACKFILLING THE PIPE ZONE.
5. DIMENSIONS SHOWN ON PLANS ARE TO THE CENTERLINE OF PIPE AND/OR MANHOLES, UNLESS OTHERWISE NOTED.
6. ALL MANHOLES SHALL BE 48" IN DIAMETER, UNLESS OTHERWISE SHOWN.
7. SANITARY SEWER MAINS SHALL BE CONSTRUCTED OF EXTRA STRENGTH VCP PIPE WITH TYPE II BEDDING AND BACKFILL, UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL USE SIX-FOOT (6') PIPE LENGTHS IN CURVED SECTIONS, UNLESS OTHERWISE NOTED.
9. COMMERCIAL AND RESIDENTIAL LOWER LATERALS SHALL BE CONSTRUCTED PER SASD DESIGN STANDARDS DRAWING 4C-13A.
10. CONSTRUCTION OF A CLEANOUT TO GRADE FOR ALL LOWER LATERALS IS REQUIRED PER SASD DESIGN STANDARD DRAWING 4C-14A. CONSTRUCTIONS OF THE TOP 1' OF THE CLEANOUT RISER MAY BE DELAYED UNTIL THE INSTALLATION OF THE BUILDING SEWER AT THE OPTION OF THE DEVELOPER, EXCEPT WHERE THE WATER MAIN IS TO BE INSTALLED BEHIND THE SIDEWALK (REFER TO NOTE 8: SASD DESIGN STANDARD 4C-13A). IF THE CONSTRUCTION OF THE TOP 1' OF THE RISER IS DELAYED, THE LOCATION OF THE LOWER LATERALS SHALL ACCURATELY BE STAKED WITH A 4" X 4" POST.
11. ANY WATER ENTERING THE SANITARY SEWER SYSTEM TO BE CONSTRUCTED UNDER THESE PLANS SHALL NOT BE DISCHARGED TO THE EXISTING SYSTEM. PLUGS MUST BE INSTALLED IN EXISTING MANHOLES AS NECESSARY TO PERMIT PUMPING THE NEW SYSTEM CLEAR OF WATER AND DEBRIS PRIOR TO ACCEPTANCE. CARE SHALL BE EXERCISED IN LOCATING PLUGS TO AVOID INTERRUPTING SERVICE CONNECTIONS. MORTAR AND BRICKS OR MECHANICAL DEVICE PLUGS MUST BE USED; INFLATABLE DEVICES ARE NOT SATISFACTORY.
12. SASD REQUIRES TELEVISION INSPECTION OF ALL CONSTRUCTED SEWER LINES IN ACCORDANCE WITH SECTION 38 OF THE SACRAMENTO COUNTY STANDARD CONSTRUCTION SPECIFICATIONS. THE SEWER INSPECTOR SHALL SIGN PLANS ON PROVIDED SIGNATURE BLOCK "OK TO SUBMIT FOR MANHOLE NUMBERING" AFTER INSTALLATION OF ALL SEWER FACILITIES AND PRIOR TO OBTAINING MANHOLE NUMBERS FOR TELEVISION INSPECTION.
13. FOR A CURRENT LIST OF SASD APPROVED TV CONTRACTORS CALL 916-876-PLAN (7526).
14. DEWATERING SHALL BE PERFORMED AS NECESSARY TO PROVIDE A STABLE TRENCH BOTTOM FOR PLACEMENT OF SEWER FACILITIES. PRIOR TO THE CONTRACTOR PLACING MATERIALS IN THE TRENCH, THE BOTTOM OF THE TRENCH SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER VERIFYING THAT THE TRENCH MEETS THE REQUIREMENTS SPECIFIED IN THE GEOTECHNICAL REPORT. ADDITIONAL REQUIREMENTS FOR UNSTABLE CONDITIONS SHALL BE AT THE WRITTEN DIRECTION OF THE PROJECT GEOTECHNICAL ENGINEER OF RECORD. GEOTEXTILE FABRIC WILL BE REQUIRED AS DESCRIBED IN NOTE 3: SASD DESIGN STANDARD DRAWING 4C-02.
15. ANY DEVIATIONS FROM THE APPROVED PLANS SHALL BE SUBMITTED TO SASD FOR APPROVAL. ALL DEVIATIONS SHALL BE APPROVED IN WRITING BY SASD AS A PLAN REVISION PRIOR TO CONSTRUCTION.

PG&E NOTES:

1. WHEN OPERATING ANY EQUIPMENT OR TOOLS IN PROXIMITY TO THE TOWER LINE, CONTRACTOR MUST NOT ERECT, HANDLE OR OPERATE ANY SUCH EQUIPMENT OR TOOLS, CLOSER TO ANY OF PG&E S OVERHEAD HIGH-VOLTAGE CONDUCTORS THAN THE MINIMUM CLEARANCES SET FORTH IN THE HIGH-VOLTAGE ELECTRICAL SAFETY ORDERS OF THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, BUT IN NO EVENT CLOSER THAN TEN FEET.
2. GENERAL ORDER NO. 95 OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION SETS FORTH CERTAIN CLEARANCE REQUIREMENTS FOR THE CONSTRUCTION AND OPERATION OF ELECTRIC LINES. THEREFORE, CONTRACTOR MUST CONTROL EXCAVATION AND DIGGING, INCLUDING SPOILS, IN SUCH A MANNER AS NOT TO DECREASE THE GROUND-TO-CONDUCTOR CLEARANCE BELOW THIRTY FEET.
3. CONTRACTOR MUST USE EXTREME CAUTION FOR ANY COMPONENTS BEING PLACED BY LIFTING DEVICES TO PREVENT POSSIBLE CONTACT WITH THE HIGH-VOLTAGE CONDUCTORS.

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE PAVEMENT
ADA	AMERICANS WITH DISABILITIES ACT
APN	ASSESSORS PARCEL NUMBER
BM, B.M.	BENCH MARK
BOV	BLOW-OFF VALVE
BRW	BOTTOM OF RETAINING WALL
BV	BUTTERFLY VALVE
BW	BACK OF WALK, BOTTOM OF WALL
C	CURB
C&G	CURB AND GUTTER
C/L, ℄	CENTERLINE
CA	CALIFORNIA
CEQA	CALIFORNIA ENVIRONMENTAL QUALITY ACT
CO	COUNTY
CONC	CONCRETE
CONST	CONSTRUCT
CR	CURB RETURN
CSD	COMMUNITY SERVICES DISTRICT
D/T	DRIVE THRU
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DG	DECOMPOSED GRANITE
DI	DRAIN INLET
D.I.	DUCTILE IRON
DTL	DETAIL
DW	DOMESTIC WATER
DWG	DRAWING
E	EAST, ELECTRICAL
EA	EACH
EG	EXISTING GROUND
EGWS	ELK GROVE WATER SERVICE
EL, ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EXIST, EX	EXISTING
FCA	FLANGE COUPLING ADAPTER
FDC	FIRE DEPARTMENT CONNECTION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL, FL	FLOW LINE
FO	FIBER OPTIC
F.O.S.	FACTOR OF SAFETY
FS	FINISHED SURFACE
G	GUTTER, GAS
GB	GRADE BREAK
GFD	GALLONS PER SQUARE FOOT PER DAY
GFL	GUTTER FLOW LINE
GPM	GALLONS PER MINUTE
GR	GRATE
GV	GATE VALVE
HC	HANDICAP
HCR	HANDICAP RAMP
HP	HIGH POINT
IOD	IRREVOCABLE OFFER OF DEDICATION
INV	INVERT
IR	IRRIGATION
L/S	LANDSCAPE
LF	LINEAR FOOT
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
MMRP	MITIGATION & MONITORING REPORTING PROGRAM
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO	NUMBER
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NRMCA	NATIONAL READY MIX CONCRETE ASSOCIATION
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
PCC	PORTLAND CEMENT CONCRETE
PC	PERVIOUS CONCRETE
PE	PEDESTRIAN EASEMENT
PET	PETROLEUM
PIV	POST INDICATOR VALVE
PL, PL	PROPERTY LINE
PROP	PROPOSED
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
RC	RELATIVE COMPACTION
RD	ROAD
RP	RADIUS POINT, REDUCED PRESSURE
RT	RIGHT
R/W, ROW	RIGHT OF WAY
S	SOUTH, SLOPE
SAC	SACRAMENTO
SASD	SACRAMENTO AREA SEWER DISTRICT
SC	SAW CUT
SCH	SCHEDULE
SCWA	SACRAMENTO COUNTY WATER AGENCY
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FOOT
SHT	SHEET
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
SW	SIDEWALK
SWPPP	STORM WATER POLUTION PREVENTION PLAN
TC, TFC	TOP FACE OF CURB
TI	TRAFFIC INDEX
TBC	TOP BACK OF CURB
TL	TELEPHONE, TRAFFIC LIGHT
TLFO	TELECOM LINE – FIBER OPTIC
TM	TRANSMISSION MAIN
TRW	TOP OF RETAINING WALL
TW	TOP OF WALL
TYP	TYPICAL
UGE	UNDERGROUND ELECTRICAL
US	UNITED STATES
USC&GS	US COAST & GEODETIC SURVEY
USGS	US GEOLOGICAL SURVEY
VCP	VITRIFIED CLAY PIPE
W	WEST, WATER
XING	CROSSING

AS-BUILT

REV NO.		ENGR INIT.	BY	DATE
	THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.		CITY ACCEPTANCE	

DATE: AS BUILT 5/10/2010
SCALE: AS SHOWN
DRAWN BY: S. ANDERSON
DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFIELD

JACOBS™
180 PROMENADE CIR. STE 300
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
GENERAL NOTES

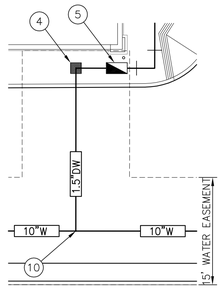
CITY OF ELK GROVE CALIFORNIA

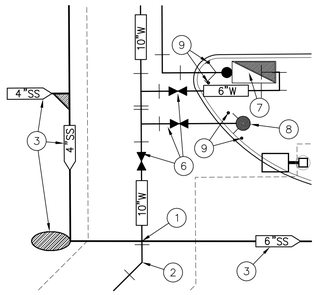
PROJECT NO: 333540

C0.1

SHEET 2 OF 28

P:\Projects\333540\011\zDrawings\333540.011_Civil\2 General Notes.dwg 5-26-10 01:46:53 PM andersonsg



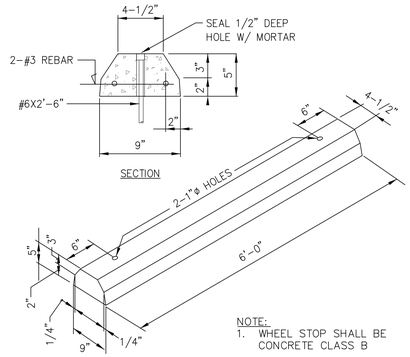


CONSTRUCTION NOTES FOR DETAILS A & B:

1. UTILITY CROSSING PER SACRAMENTO COUNTY STANDARD 8-10.
2. INSTALL 45° FITTING WITH THRUST BLOCK PER SACRAMENTO COUNTY STANDARDS 8-3A AND 8-3B.
3. FOR ALL SANITARY SEWER INFORMATION SEE SHEET 9.
4. 1.5" WATER METER SENSUS SR POSITIVE DISPLACEMENT PER SACRAMENTO COUNTY STANDARD DRAWING 8-6B. PROVIDE 90° FITTING AFTER METER TO RP PRINCIPLE BACKFLOW PREVENTION ASSEMBLY.
5. 1.5" RP PRINCIPLE BACKFLOW PREVENTION ASSEMBLY PER SACRAMENTO COUNTY STANDARD DRAWING 8-8A.
6. GATE VALVE AND BOX PER SACRAMENTO COUNTY STANDARD DRAWING 8-5. MATCH GATE VALVE SIZE TO PIPE SIZE.
7. 6" DCDA AND FDC PER SACRAMENTO COUNTY STANDARD DRAWING 8-7. PAINT RED PER COSUMNES CSD FIRE REQUIREMENTS.
8. INSTALL FIRE HYDRANT ASSEMBLY PER SACRAMENTO COUNTY IMPROVEMENT STANDARDS 8-2B, 8-3A, AND 8-3B. PROVIDE BOLLARDS PER DETAIL P, SHEET 3.
9. BOLLARDS PER DETAIL P, THIS SHEET.
10. 1.5" WATER SERVICE PER SACRAMENTO COUNTY STANDARD DRAWING 8-1.

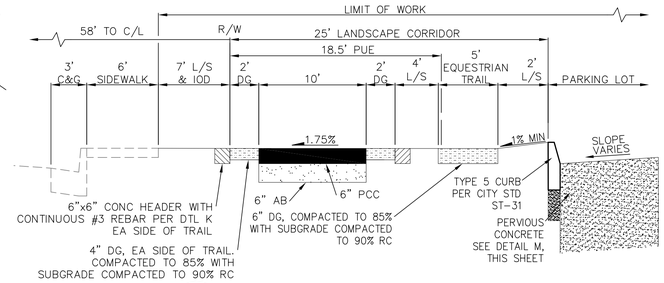
A DOMESTIC WATER CONNECTION DETAIL
1"=10'

B FIRE CONNECTION DETAIL
1"=10'

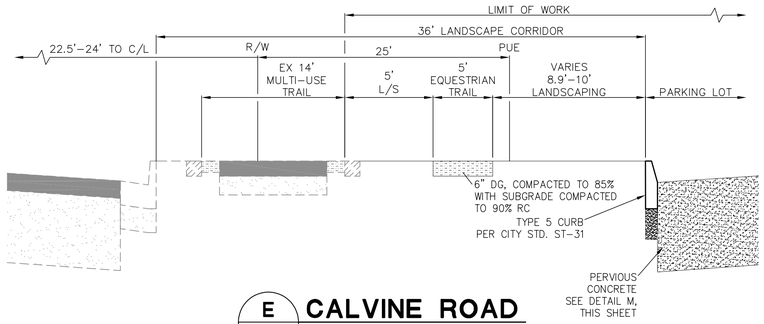


NOTE:
1. WHEEL STOP SHALL BE CONCRETE CLASS B

C CONCRETE WHEEL STOP
NOT TO SCALE



D BRADSHAW ROAD
NOT TO SCALE



E CALVINE ROAD
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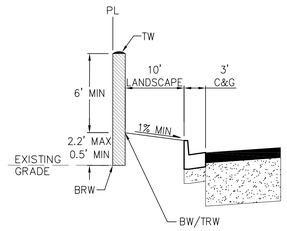
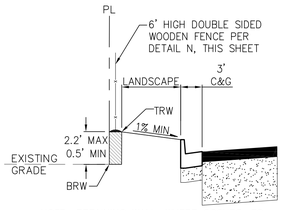


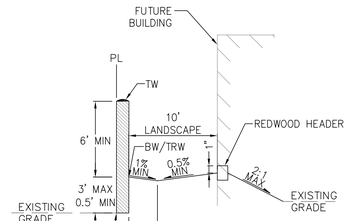
F SCREEN WALL
NOT TO SCALE

SCREEN WALL NOTES:
1. STEP WALL AND FOOTINGS AS REQUIRED TO OBTAIN 6'-0" MINIMUM WALL HEIGHT ABOVE HIGHEST ADJACENT GRADE.
2. ALL WALLS TO BE PROTO II SCREEN/RETAINING WALLS PER SHEET 21. BLOCK COLOR TO BE TAN D345 SPLIT FACE BY BASALITE OR APPROVED EQUAL. PROVIDE 1.5" 816 VENEER CAP IN SAME COLOR BY BASALITE OR APPROVED EQUAL. COAT WITH GRAFFITI RESISTANT COATING BY KRYSTALKOTE CALTRANS FORMULA BY TRADEWINDS INTERNATIONAL OR APPROVED EQUAL.
3. BW/BRW ELEVATIONS ARE FS @ BW/BRW AND NOT NECESSARILY TO TOP OF FOOTING. SEE WALL DETAILS, SHEET 21.



NOTE: RETAINING WALL, WHERE OCCURS, TO BE PROTO II PER SHEET 21.

G SCREEN FENCE
NOT TO SCALE



H SCREEN WALL
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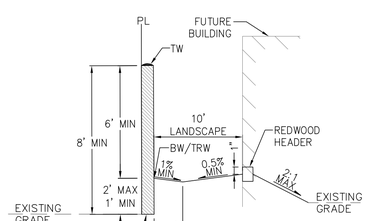

J SCREEN WALL
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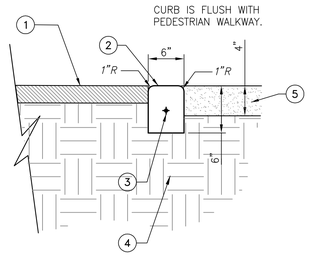
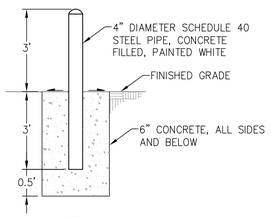
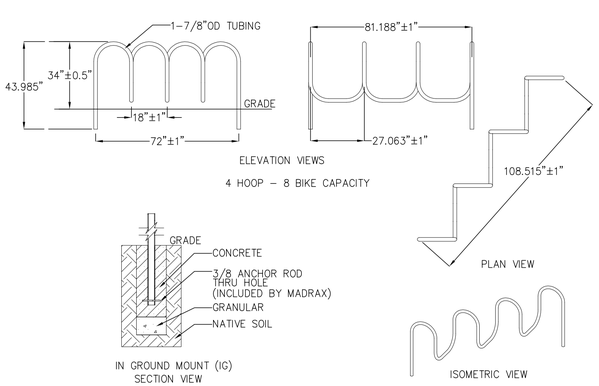


NOTES:
1. LANDSCAPING PER PLAN.
2. 6"X6" CONCRETE HEADER.
3. #3 REBAR, CONTINUOUS.
4. COMPACTED SUBGRADE TO 95% RELATIVE COMPACTION.
5. DECOMPOSED GRANITE.

K CONCRETE HEADER
NOT TO SCALE



P BOLLARD
NOT TO SCALE



NOTES:
1. INSTALL BIKE RACKS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. CONSULTANT TO SELECT COLOR(FINISH), SEE MANUFACTURER'S SPECIFICATIONS.
3. SEE SITE PLAN FOR LOCATION OR CONSULT OWNER.

PRODUCT: CIR-8-IG(SF)
DESCRIPTION: CIRCA 2000 BIKE RACK
8 BIKE, SURFACE OR IN GROUND MOUNT
DATE: 8-5-02
ENG: TLG

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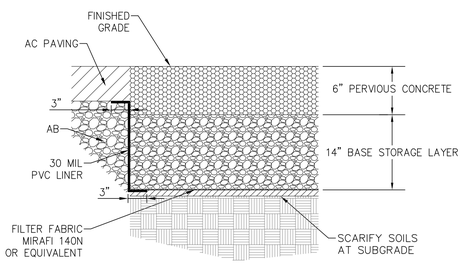
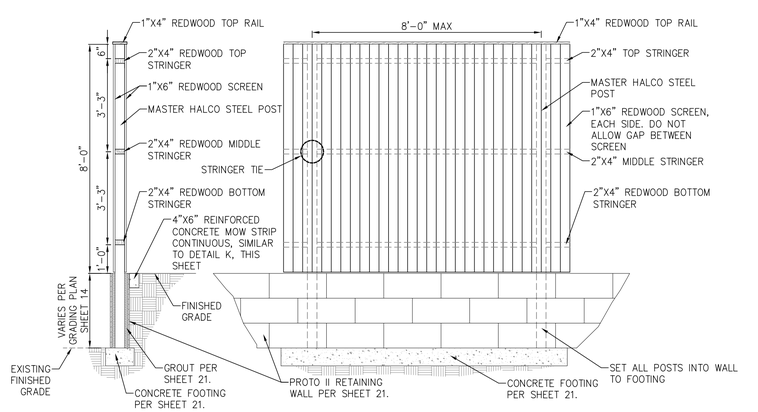
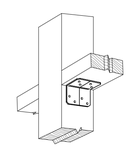
L BIKE RACK DETAIL
NOT TO SCALE



NOTES:
1. AVOID DRIVING ON THE SUBGRADE TO THE MAXIMUM EXTENT PRACTICAL IN THE AREA OF PERVIOUS PAVING TO MINIMIZE SUBGRADE COMPACTION.
2. PERVIOUS CONCRETE:
   A. CEMENT: PORTLAND CEMENT TYPE II CONFORMING TO ASTM C150 OR PORTLAND CEMENT TYPE IP OR ISM CONFORMING TO ASTM C595. THE CEMENTIOUS CONTENT SHALL BE NO LESS THAN 654 LBS PER CUBIC YARD.
   B. AGGREGATE: CLEAN, WASHED CRUSHED GRAVEL, STONE MEETING NO. 8 COARSE AGGREGATE (3/8 TO NO. 16) PER ASTM C33.
   C. THE MIX SHALL BE DESIGNED AND INSTALLED TO HAVE A TOTAL VOID CONTENT GREATER THAN 15 PERCENT AND LESS THAN 30 PERCENT, IN PLACE, AS CONSTRUCTED.
3. AGGREGATE IN BASE STORAGE LAYER SHALL BE 3/4 INCH TO 1 INCH WASHED, UNIFORMLY GRADED COARSE AGGREGATE, WITH LESS THAN 0.8% PASSING THE NO. 200 SIEVE.
4. OVERLAP PIECES OF FILTER FABRIC MINIMUM 12 INCHES AT SEAMS. PLACE FILTER FABRIC VERTICALLY AT LIMITS OF PERVIOUS CONCRETE PAVING TO PROTECT STORAGE LAYER FROM SOILS.

M PERVIOUS CONCRETE SECTION AT AC PAVING
NOT TO SCALE





STRINGER TIE

N REDWOOD SCREEN FENCE
NOT TO SCALE

AS-BUILT

REV NO.	ENGR INIT.	BY	CITY ACCEPTANCE DATE

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DATE: AS BUILT 5/10/2010
SCALE: AS SHOWN
DRAWN BY: S. ANDERSON
DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFELD

JACOBS™
180 PROMENADE CIR. STE 300
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
CONSTRUCTION DETAILS
CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
C0.2
SHEET 3 OF 28

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NOTES

1. CONTRACTOR TO STRIP UPPER 4 INCHES OF SITE SOIL IN BUILDING AND PAVING AREAS. THIS SOIL IS NOT SUITABLE FOR USE AS ENGINEERED FILL. HOWEVER, THIS SOIL MAY BE USED AS FILL IN LANDSCAPE AREAS SUBJECT TO LANDSCAPE SOIL REQUIREMENTS. REFER TO LANDSCAPE PLANS.
2. SITE PREPARATION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED FOR THE PROJECT, REPORT #1-208-0035 BY SALEM ENGINEERING GROUP, INC.
3. CONTRACTOR SHALL OBTAIN RIGHT-OF-ENTRY FROM PARCEL 3 PRIOR TO START OF CONSTRUCTION.

CONSTRUCTION NOTES

(1) PORTABLE BUILDINGS TO BE RELOCATED BY THE ROCK CHURCH. CONTRACTOR IS RESPONSIBLE FOR REMOVING EXISTING UTILITY LATERALS TO BUILDINGS.

(2) FENCE TO BE REMOVED BY CONTRACTOR AND RETURNED TO THE OWNER, THE ROCK CHURCH.

(3) GATE TO BE REMOVED BY CONTRACTOR AND RETURNED TO THE OWNER, THE ROCK CHURCH.

(4) WOODEN RAMP TO BE REMOVED BY CONTRACTOR AND RETURNED TO THE OWNER, THE ROCK CHURCH.

(5) TREES TO BE REMOVED BY CONTRACTOR.

(6) GAS RISER AND PIPE TO BE REMOVED BY CONTRACTOR. AFTER POTHOLING, IF PIPE LOCATION IS DIFFERENT THAN AS SHOWN, CONTRACTOR SHALL CONTACT ENGINEER BEFORE REMOVING PIPE.

(7) EXISTING SIGN TO BE REMOVED BY CONTRACTOR.

(8) EXISTING CURB AND PARKING STRIPING TO BE REMOVED BY CONTRACTOR.

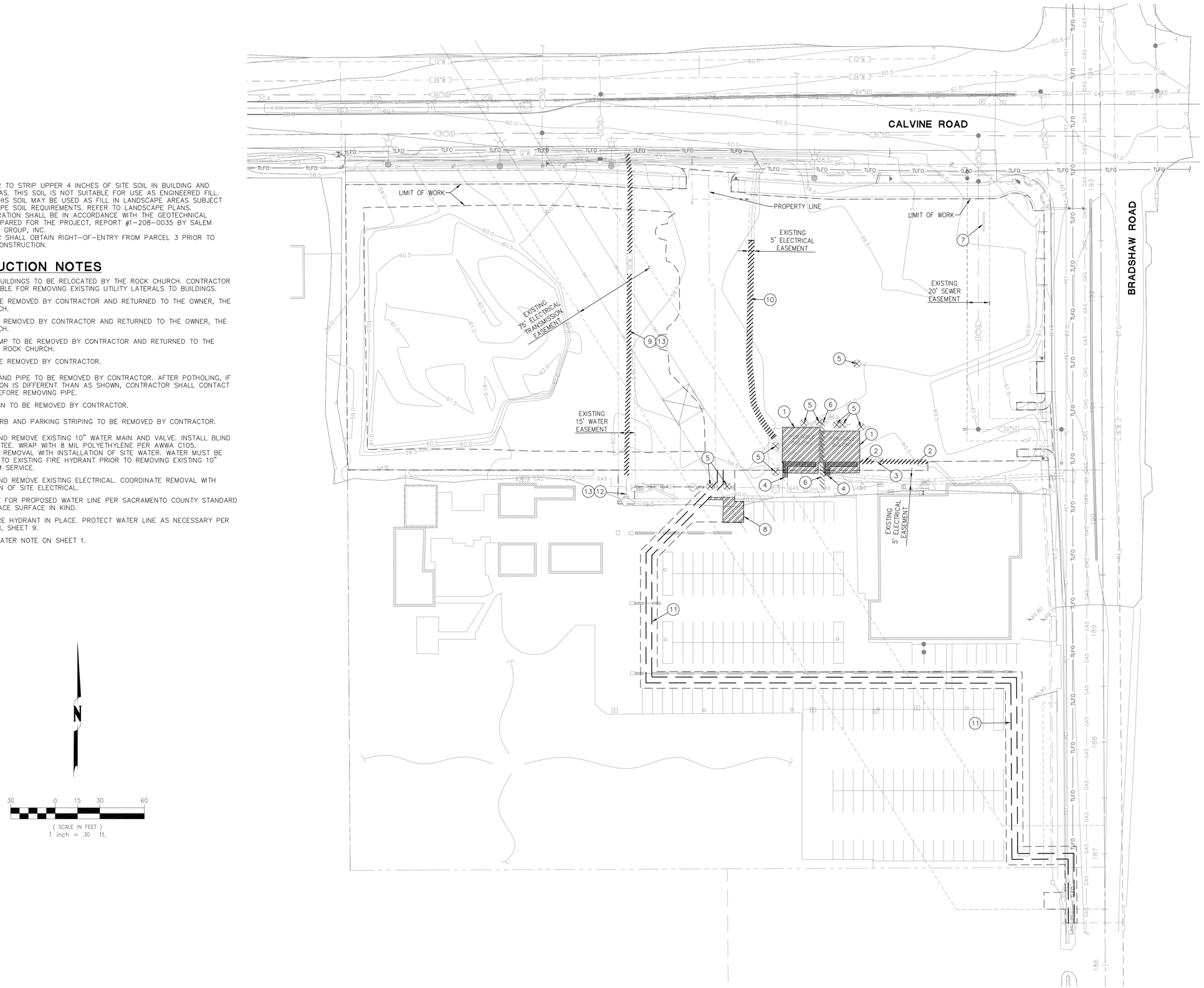
(9) ABANDON AND REMOVE EXISTING 10" WATER MAIN AND VALVE. INSTALL BLIND FLANGE ON TEE. WRAP WITH 8 MIL POLYETHYLENE PER AWWA C105. COORDINATE REMOVAL WITH INSTALLATION OF SITE WATER. WATER MUST BE CONNECTED TO EXISTING FIRE HYDRANT PRIOR TO REMOVING EXISTING 10" WATER FROM SERVICE.

(10) ABANDON AND REMOVE EXISTING ELECTRICAL. COORDINATE REMOVAL WITH INSTALLATION OF SITE ELECTRICAL.

(11) TRENCH CUT FOR PROPOSED WATER LINE PER SACRAMENTO COUNTY STANDARD 8-17. REPLACE SURFACE IN KIND.

(12) PROTECT FIRE HYDRANT IN PLACE. PROTECT WATER LINE AS NECESSARY PER WATER PLAN, SHEET 9.

(13) REFER TO WATER NOTE ON SHEET 1.



AS-BUILT

ENGR INIT.	BY	DATE
	CITY ACCEPTANCE	

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IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
DEMOLITION PLAN

CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
C1.0
SHEET 4 OF 28

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LINE TABLE		
LINE	LENGTH	BEARING
L1	200.00'	N 89°45'42" E
L2	24.22'	N 89°39'22" E
L3	18.26'	S 89°39'22" W
L4	51.93'	S 00°00'00" W
L5	18.57'	N 90°00'00" E
L6	13.33'	N 57°20'30" W
L7	12.00'	N 32°39'30" E
L8	5.72'	N 57°20'30" W
L9	12.00'	N 32°39'30" E
L10	13.33'	S 57°20'30" E
L11	3.86'	N 32°39'30" E
L12	76.10'	N 89°39'52" E
L13	69.52'	S 45°00'00" E
L14	13.43'	S 89°39'22" W
L15	63.00'	S 00°20'38" E
L16	12.68'	N 89°39'22" E
L17	111.98'	S 89°45'42" W
L18	5.50'	N 00°20'35" W
L19	15.50'	N 89°39'25" E
L20	76.00'	N 00°20'40" W
L21	15.50'	S 89°39'25" W
L22	0.75'	N 00°20'35" W
L23	9.00'	S 89°45'42" W
L24	11.00'	N 00°14'18" W
L25	2.00'	N 89°45'42" E
L26	11.00'	S 00°14'18" E
L27	9.00'	S 89°45'42" W
L28	11.00'	N 00°14'18" W
L29	2.00'	N 89°45'42" E
L30	11.00'	S 00°14'18" E
L31	15.56'	N 89°34'52" E
L32	8.00'	S 00°21'50" E
L33	6.53'	S 89°33'47" W
L34	12.02'	N 89°36'22" E
L35	9.01'	S 00°20'38" E
L40	2.00'	S 00°23'02" E
L41	28.00'	S 89°36'43" W
L42	2.00'	N 00°23'02" W
L43	28.00'	N 89°36'43" E
L48	14.25'	S 89°34'23" W
L49	18.63'	N 00°20'38" W
L50	6.47'	N 89°33'47" E
L51	10.23'	S 00°20'38" E
L52	9.57'	S 89°33'06" W
L53	3.50'	N 00°20'38" W
L54	20.52'	N 89°33'47" E
L55	12.43'	S 89°39'22" W
L56	54.00'	S 00°20'38" E
L57	12.50'	N 89°39'22" E
L58	2.00'	S 00°20'38" E
L59	12.50'	S 89°39'22" W
L60	65.00'	S 00°20'38" E
L61	16.51'	N 89°39'22" E
L62	6.39'	S 45°17'28" E
L63	16.52'	S 00°15'59" E
L64	12.87'	N 00°14'18" W
L65	14.71'	S 00°14'18" E
L66	8.02'	S 00°14'18" E
L67	22.80'	N 00°15'50" W
L68	27.67'	N 45°20'45" W
L69	41.00'	N 00°02'42" E
L71	7.00'	S 00°02'42" W
L72	151.66'	N 89°57'18" W
L73	98.14'	S 89°33'47" W

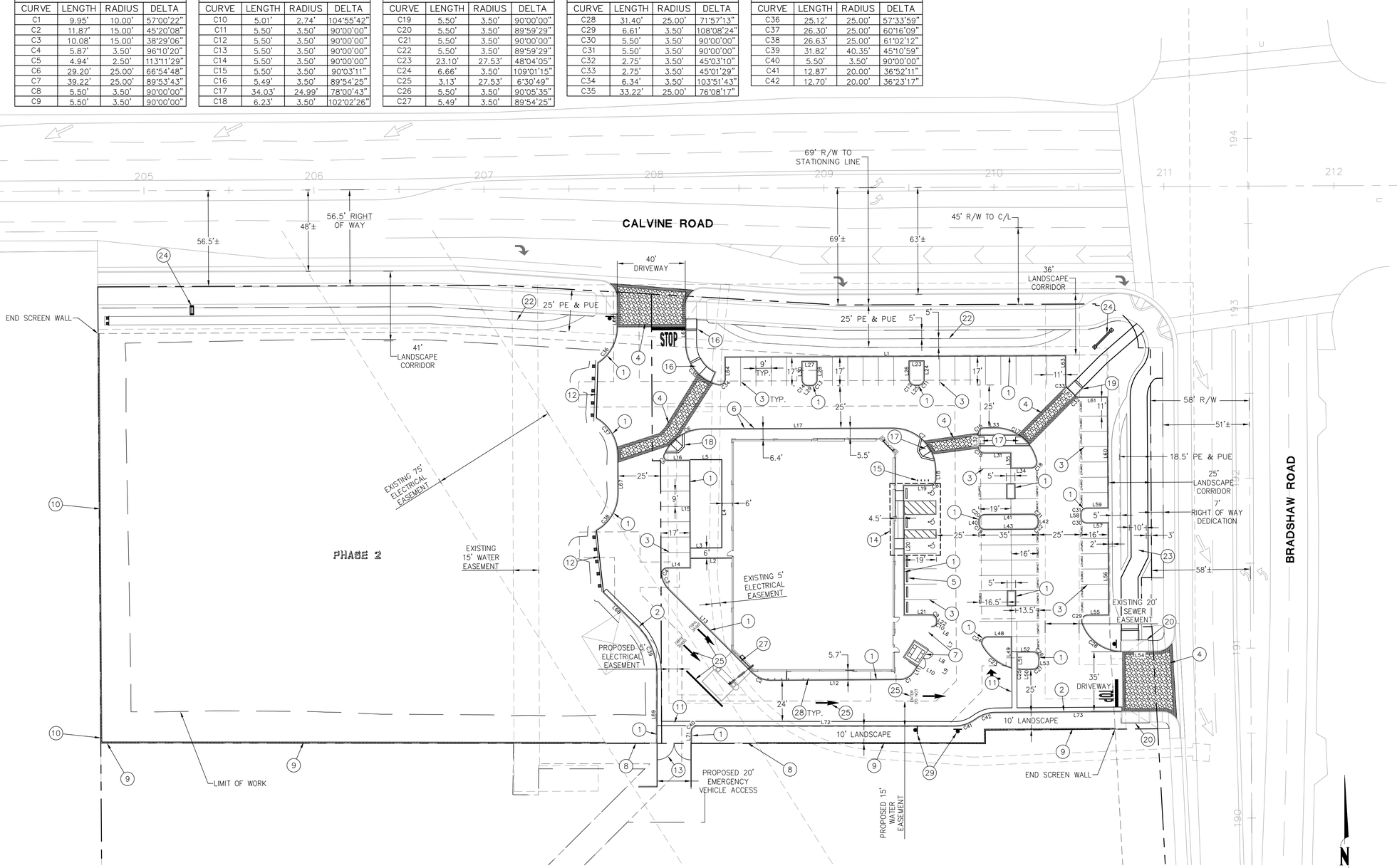
CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C1	9.95'	10.00'	57°00'22"
C2	11.87'	15.00'	45°20'08"
C3	10.08'	15.00'	38°29'06"
C4	5.87'	3.50'	96°10'20"
C5	4.94'	2.50'	113°11'29"
C6	29.20'	25.00'	66°54'48"
C7	39.22'	25.00'	89°53'43"
C8	5.50'	3.50'	90°00'00"
C9	5.50'	3.50'	90°00'00"

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C10	5.01'	2.74'	104°55'42"
C11	5.50'	3.50'	90°00'00"
C12	5.50'	3.50'	90°00'00"
C13	5.50'	3.50'	90°00'00"
C14	5.50'	3.50'	90°00'00"
C15	5.50'	3.50'	90°03'11"
C16	5.49'	3.50'	89°54'25"
C17	34.03'	24.99'	78°00'43"
C18	6.23'	3.50'	102°02'26"

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C19	5.50'	3.50'	90°00'00"
C20	5.50'	3.50'	89°59'29"
C21	5.50'	3.50'	90°00'00"
C22	5.50'	3.50'	89°59'29"
C23	23.10'	27.53'	48°04'05"
C24	6.66'	3.50'	109°01'15"
C25	3.13'	27.53'	6°30'49"
C26	5.50'	3.50'	90°05'35"
C27	5.49'	3.50'	89°54'25"

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C28	31.40'	25.00'	71°57'13"
C29	6.61'	3.50'	108°08'24"
C30	5.50'	3.50'	90°00'00"
C31	5.50'	3.50'	90°00'00"
C32	2.75'	3.50'	45°03'10"
C33	2.75'	3.50'	45°01'29"
C34	6.34'	3.50'	103°51'43"
C35	33.22'	25.00'	76°08'17"

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C36	25.12'	25.00'	57°33'59"
C37	26.30'	25.00'	60°16'09"
C38	26.63'	25.00'	61°02'12"
C39	31.82'	40.35'	45°10'59"
C40	5.50'	3.50'	90°00'00"
C41	12.87'	20.00'	36°52'11"
C42	12.70'	20.00'	36°23'17"



CONSTRUCTION NOTES

1. CONSTRUCT TYPE 5 CURB PER CITY OF ELK GROVE STANDARD DRAWING ST-31.
2. CONSTRUCT TYPE 2 CURB AND GUTTER PER CITY OF ELK GROVE STANDARD DRAWING ST-31.
3. PARKING STRIPE PER SHEET 7.
4. STAMPED ASPHALT/CONCRETE PER PAVEMENT PLAN, SHEET 6.
5. INSTALL CONCRETE WHEEL STOP PER DETAIL C, SHEET 3.
6. UNDER SIDEWALK DRAIN PER ACHITECTURAL PLANS, DETAIL 10, SHEET A-6.2.
7. SEE ARCHITECTURAL PLANS FOR TRASH AND RECYCLE ENCLOSURES.
8. CONSTRUCT 20' WIDE DOUBLE SIDED REDWOOD FENCE PER DETAIL H, SHEET 3, ALONG ELECTRICAL EASEMENT.
9. CONSTRUCT 6' PROTO II WALL WITH GRAFFITI RESISTANT COATING PER SHEET 21.
10. CONSTRUCT 8' PROTO II WALL WITH GRAFFITI RESISTANT COATING PER SHEET 21.
11. CONCRETE VALLEY GUTTER PER DETAIL C, SHEET 15.
12. END AC PAVING PER DETAIL A, SHEET 15.
13. CONSTRUCT 20' REDWOOD SWING GATE FOR EMERGENCY VEHICLE ACCESS. GATE TO BE 20' CLEAR INSIDE POST TO INSIDE POST. PROVIDE KNOX PADLOCK PER COSUMNES CSD REQUIREMENTS. REFER TO DETAIL N, SHEET 3, FOR REDWOOD AND POST LAYOUT WITH KNOX PADLOCK.
14. ACCESSIBLE PARKING AREA. PAVEMENT MARKING AND SIGNAGE PER DETAIL E, SHEET 8. HANDICAP RAMP PER DETAIL J, SHEET 15.
15. BIKE RACKS PER DETAIL L, SHEET 3.
16. HANDICAP RAMP PER DETAIL L, SHEET 15.
17. HANDICAP RAMP PER DETAIL G, SHEET 15.
18. HANDICAP RAMP PER DETAIL F, SHEET 15.
19. HANDICAP RAMP PER DETAIL M, SHEET 15.
20. HANDICAP RAMP PER DETAIL H, SHEET 15.
21. NOT USED.
22. EQUESTRIAN TRAIL PER DETAIL E, SHEET 3.
23. MULTI-USE TRAIL PER DETAIL D, SHEET 3.
24. SIGN PER SIGNING PLANS.
25. PAVEMENT MARKINGS, SEE SHEET 7.
26. REINFORCED CURB PER ARCHITECTURAL PLANS, DETAIL 1, SHEET A-6.2.
27. DRIVE THROUGH CURB PER ARCHITECTURAL PLANS, DETAIL 1, SHEET A-5.3.
28. BOLLARDS PER ARCHITECTURAL PLANS.
29. SIGN PER SITE SIGNAGE PLANS, SHEET 7.

GENERAL NOTES

1. SEE SHEET 6 FOR PAVEMENT PLAN.
2. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
3. PARKING STALL DIMENSIONS ARE AS FOLLOWS UNLESS OTHERWISE NOTED:
   FULL SIZED: 9' X 19'
   COMPACT: 9' X 16'

AS-BUILT

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DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFELD

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PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE DIMENSIONED SITE PLAN
CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
C2.0
SHEET 5 OF 28

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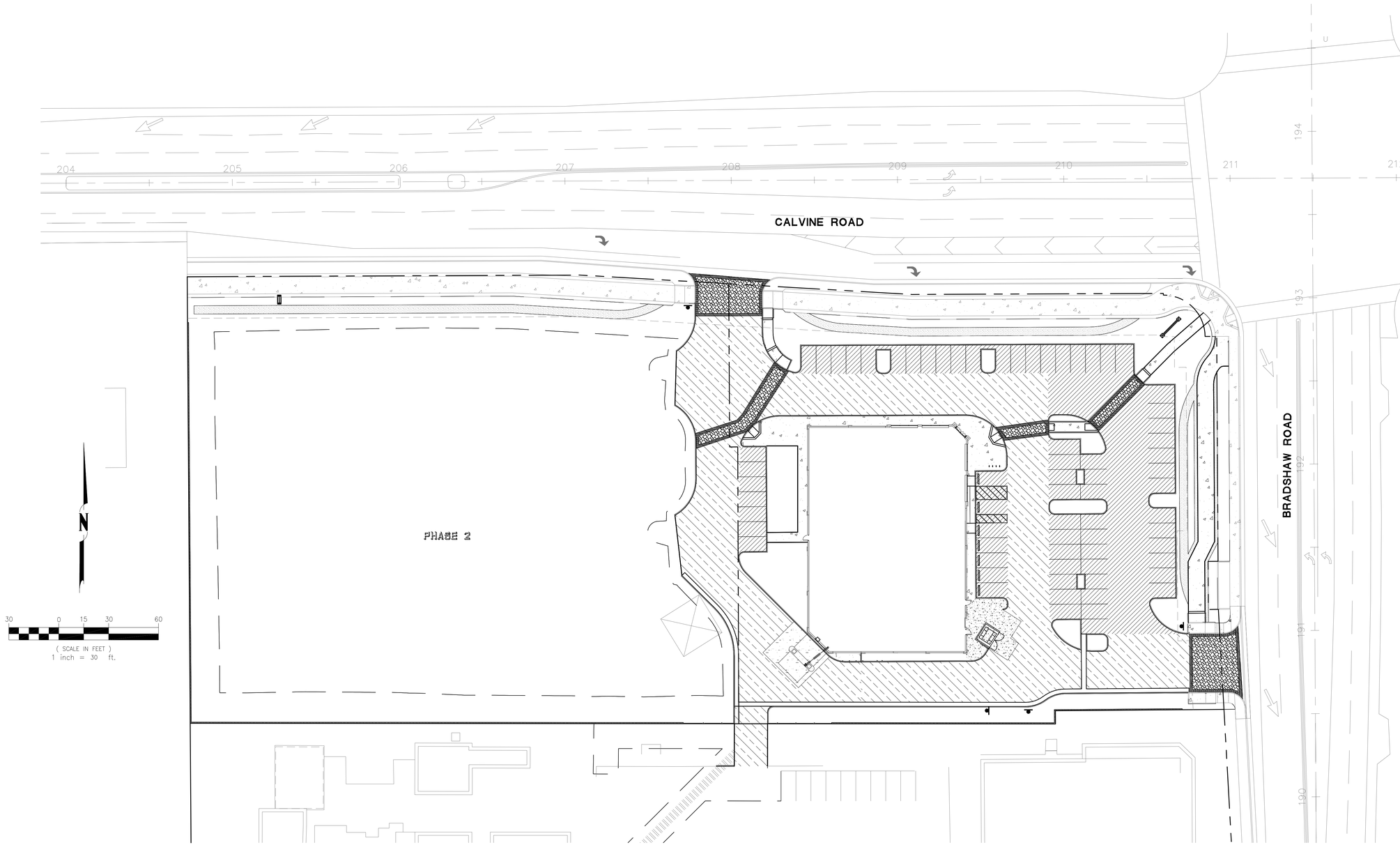

LEGEND

- 6" PERVIOUS CONCRETE/ 14" AGGREGATE BASE STORAGE LAYER WITH 1" MAX AGGREGATE
- 4.0"AC / 8.0"AB / 12" COMPACTED SUBGRADE TO 95% RELATIVE COMPACTION
- 4.0"PCC / 6.0"AB / 12" COMPACTED SUBGRADE TO 95% RELATIVE COMPACTION
- 5.0"PCC / 4.0"AB / 12" COMPACTED SUBGRADE TO 95% RELATIVE COMPACTION
- 6.5"PCC / 6.0"AB / 12" COMPACTED SUBGRADE TO 95% RELATIVE COMPACTION
- REPLACE SURFACE IN KIND
- EXISTING PCC
- PROPOSED DG EQUESTRIAN TRAIL
- (1), (2) DECORATIVE STAMPED ASPHALT/CONCRETE. MATCH STRUCTURAL SECTION PER DESIGNATION ABOVE.

	PATTERN	COLOR
(1) BORDER (UNIFORM 1'-8")	SOLDIER COURSE	SAN DIEGO BUFF
(2) CENTER	ASHLAR SLATE	TERRA COTTA

GENERAL NOTE:

PROVIDE CONSTRUCTION AND EXPANSION JOINTS AT BUILDING WALKWAY PER ARCHITECTURAL PLANS.

AS-BUILT

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180 PROMENADE CIR. STE 200
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IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
PAVEMENT PLAN
CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
C3.0
SHEET 6 OF 28

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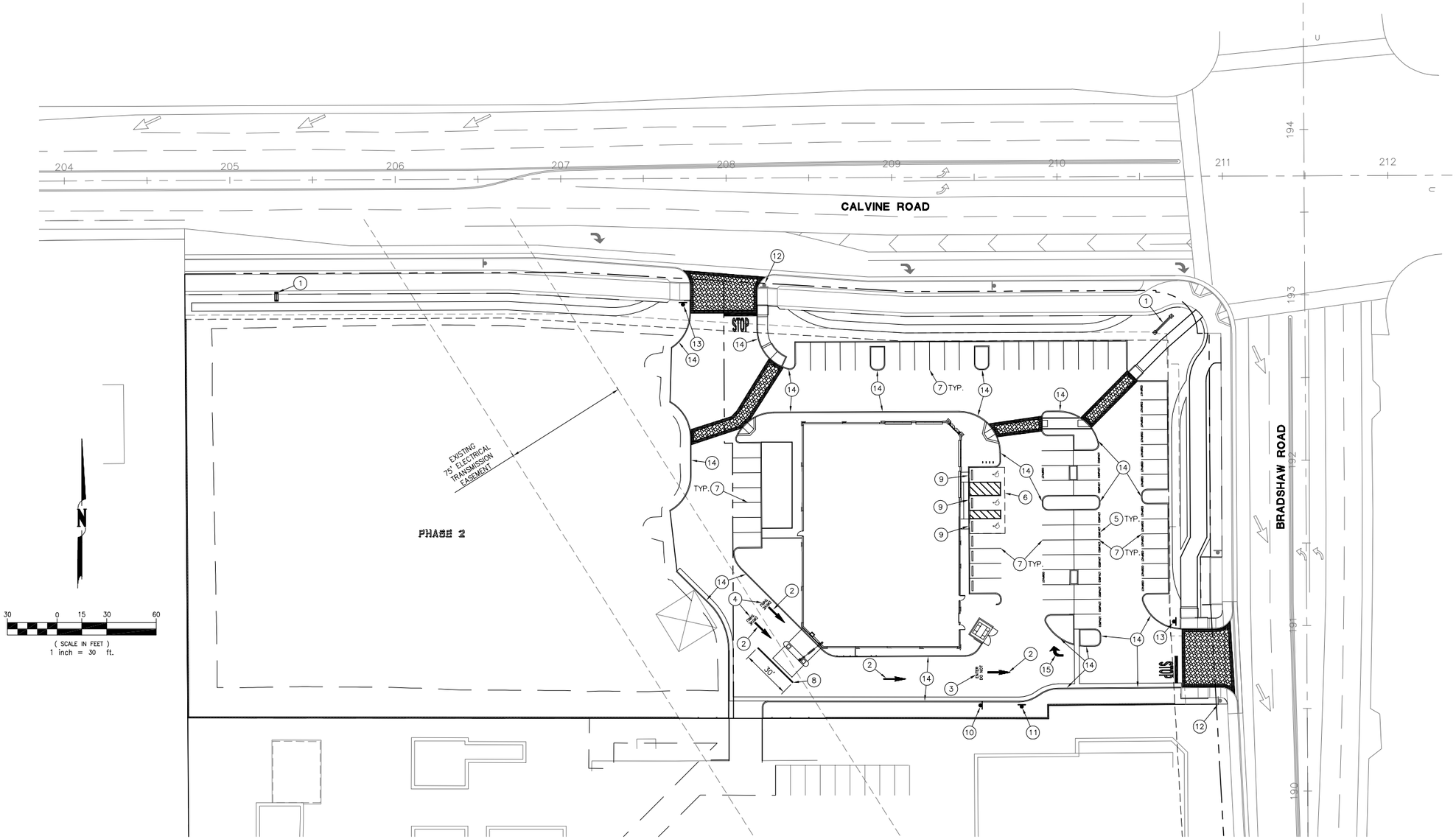

CONSTRUCTION NOTES

1. STORE/SITE SIGN BY OTHERS.
2. PAINT 6' LONG WHITE ARROW, PROPORTIONS PER CAMUTCD TYPE I ARROW.
3. STENCIL "DO NOT ENTER" IN 12" HIGH LETTERING.
4. STENCIL "DRIVE THRU" IN 12" HIGH LETTERING.
5. STENCIL "COMPACT" IN 8" HIGH LETTERING.
6. PAINT ACCESSIBLE PARKING STALLS AND LANDINGS PER SHEET 8.
7. PAINT 4" WIDE WHITE PARKING STALL LINE.
8. PAINT 12" WIDE WHITE LINE.
9. HANDICAP PARKING SIGN PER DETAIL A, SHEET 8.
10. INSTALL STANDARD R5-1A "WRONG WAY" SIGN PER CAMUTCD.
11. INSTALL STANDARD R6-1(LT) "ONE WAY" SIGN PER CAMUTCD.
12. EXISTING R1-1 "STOP SIGN" TO REMAIN.
13. ACCESSIBLE PARKING UNAUTHORIZED VEHICLE SIGN PER DETAIL A, SHEET 8.
14. PAINT RED CURBS WITH WHITE "NO PARKING" PER COSUMNES CSD FIRE DEPARTMENT REQUIREMENTS. REFER ALSO TO SHEET 13.
15. PAINT 8' RIGHT TURN ARROW (TYPE IV).

NOTES

1. USE PERMANENT, ALL WEATHER TRAFFIC PAINT FOR PAVEMENT MARKINGS ON THE PROJECT SITE.
2. ANY PAVEMENT MARKINGS WITHIN CITY OF ELK GROVE RIGHT OF WAY SHALL COMPLY WITH CITY OF ELK GROVE STRIPING NOTES, SEE SHEET 8.

AS-BUILT

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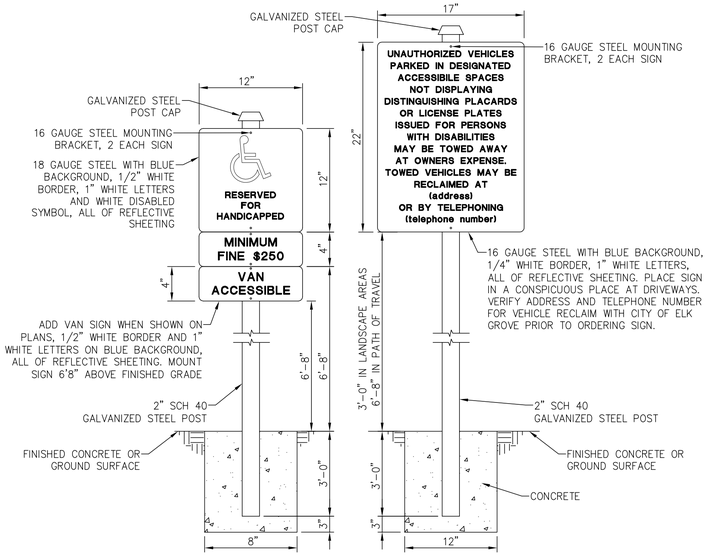
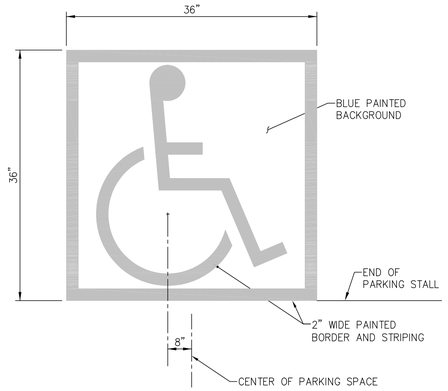
IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
PAVEMENT MARKING & SITE SIGNAGE PLAN
CITY OF ELK GROVE CALIFORNIA

P:\Projects\333540\Dft\zDrawings\333540.011_Civil\7 Pavement Marking & Site Signage Plan.dwg 5-26-10 01:48:18 PM andersonsg

PROJECT NO: 333540
C3.1
SHEET 7 OF 28

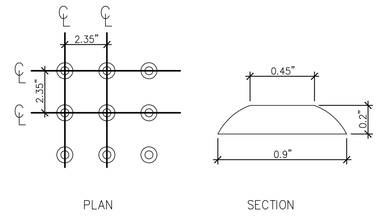


A ACCESSIBILITY SIGNAGE
NOT TO SCALE



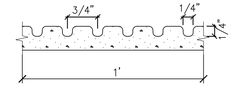
NOTE: PROPORTION PER AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FIGURE 4.3(A).

B HANDICAP SYMBOL
NOT TO SCALE



NOTE: DETECTABLE WARNING PER ADA SECTION 4.29; SHALL CONSIST OF RAISED TRUNCATED DOMES "SAFETY YELLOW." REFER ALSO TO CITY OF ELK GROVE STANDARD DRAWING AR-3.1.

C DETECTABLE WARNING SURFACE
NOT TO SCALE

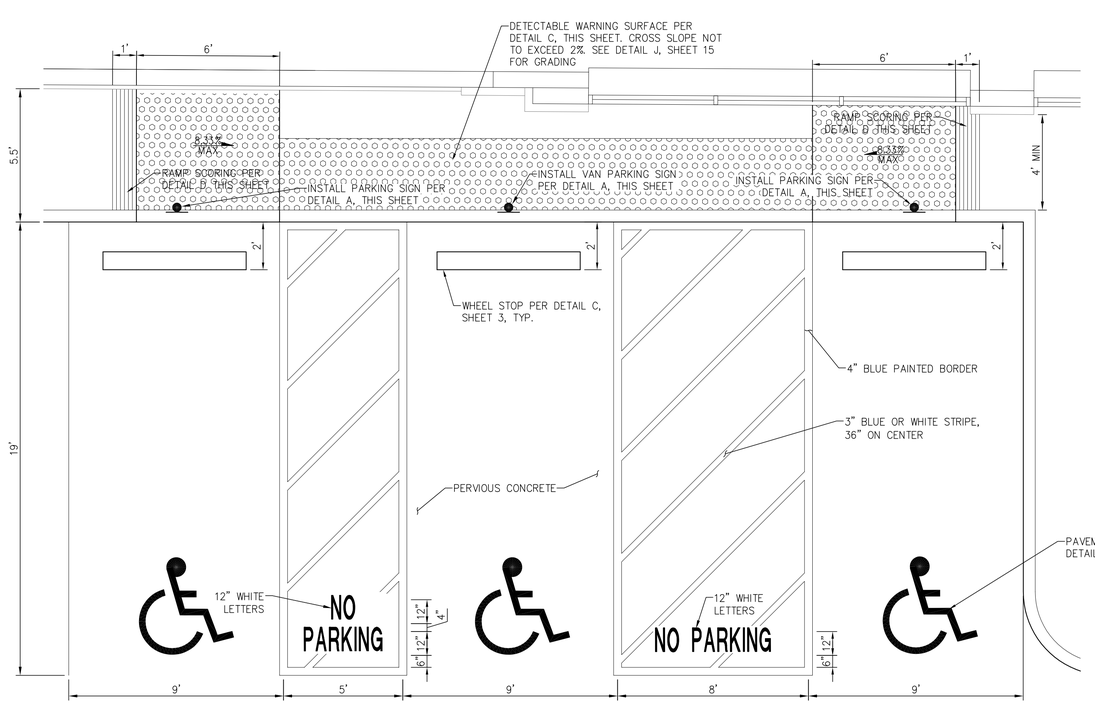


NOTE: REFER ALSO TO CITY OF ELK GROVE STANDARD DRAWING AR-3.0.

D TOP OF RAMP SCORING
NOT TO SCALE

SIGNING & STRIPING NOTES:

1. SIGNING AND STRIPING NOTES REFER TO THE LATEST VERSION OF THE CITY STANDARD SPECIFICATIONS, WHICH REFERENCE CALTRANS STANDARD PLANS, STATE STANDARD SPECIFICATIONS (SSS), AND TRAFFIC MANUAL. ANY REFERENCES REGARDING THE TRAFFIC CONTROL DEVICE TOPICS IN THE TRAFFIC MANUAL ARE SUPERSEDED AND REPLACED BY THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) 2003 EDITION AS AMENDED BY THE MUTCD 2003 CALIFORNIA SUPPLEMENT. ALL SIGNING AND STRIPING WORK SHALL COMPLY WITH THESE STANDARDS.
2. THE DEVELOPER OR CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL SIGNING AND STRIPING, AS DETERMINED BY THE CITY OF ELK GROVE FOR PUBLIC SAFETY.
3. ALL EXISTING SIGNING THAT CONFLICTS WITH PROPOSED SIGNING SHALL BE REMOVED.
4. ALL SIGNS SHALL BE STANDARD SIZE UNLESS OTHERWISE NOTED.
5. ALL PARKING RESTRICTION SIGNS SHALL HAVE ENGINEERING GRADE REFLECTIVE SHEETING. ALL OTHER SIGNS SHALL HAVE DIAMOND GRADE REFLECTIVE SHEETING.
6. NEW SIGNS SHALL BE INSTALLED ON STREET LIGHT POLES OR 2" DIAMETER TUBULAR GALVANIZED STEEL POSTS WITH VANDAL-RESISTANT HARDWARE. THE POSTS SHALL BE SET IN CONCRETE. ONE OR MORE SIGN PANELS MOUNTED ON A SINGLE SIGN POST OR STREET LIGHT POLE SHALL BE COUNTED AS ONE ROADSIDE SIGN INSTALLATION UNLESS OTHERWISE NOTED.
7. SIGNS SHALL BE MOUNTED SO THAT THE BOTTOM OF THE SIGN IS AT LEAST SEVEN FEET FROM THE FINISHED GRADE IN AREAS WHERE PEDESTRIANS MAY BE PRESENT, EVEN IF THERE IS NO SIDEWALK. TO SATISFY THIS REQUIREMENT, EXISTING POSTS MAY HAVE TO BE REPLACED IF ADDITIONAL SIGNS ARE ADDED.
8. WHERE POSSIBLE, AT LEAST TWO FEET OF CLEARANCE SHOULD BE PROVIDED FROM CURB FACE TO EDGE OF SIGN.
9. ALL PERMANENT STRIPING AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED. YELLOW THERMOPLASTIC SHALL BE LEAD-FREE ORGANIC MATERIAL. CURB MARKINGS SHALL BE PAINT.
10. ALL STRIPING AND MARKINGS SHALL BE REFLECTORIZED UNLESS OTHERWISE DIRECTED.
11. ALL EXISTING STRIPING AND MARKINGS THAT CONFLICT WITH PROPOSED STRIPING AND MARKINGS SHALL BE REMOVED BY WET SANDBLASTING OR GRINDING. PAVEMENT LEGENDS AND ARROWS THAT ARE REMOVED SHALL BE REMOVED IN A BLOCK PATTERN. ALL STRIPING AND MARKING REMOVAL AREAS SHALL BE TREATED WITH AN APPROVED PAVEMENT SEALER.
12. ALL MEDIAN ISLAND NOSE CURB FACES FROM BC (BEGIN CURVE) TO EC (END CURVE) SHALL BE PAINTED WITH YELLOW OR WHITE REFLECTIVE PAINT. ONE-WAY YELLOW OR WHITE REFLECTIVE PAVEMENT MARKERS SHALL ALSO BE INSTALLED ON TOP OF MEDIAN ISLAND NOSE AND POSITIONED TO FACE ON-COMING TRAFFIC.
13. BLUE REFLECTIVE PAVEMENT MARKERS SHALL BE PLACED ACROSS FROM ALL FIRE HYDRANTS.



E ACCESSIBLE PARKING AREA
NOT TO SCALE

AS-BUILT

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

REV NO.	ENGR INIT.	BY	CITY ACCEPTANCE DATE

DATE: AS BUILT 5/10/2010
SCALE: AS SHOWN
DRAWN BY: S. ANDERSON
DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFELD

JACOBS
180 PROMENADE CIR, STE 200
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
PAVEMENT MARKING & SITE SIGNAGE DETAILS
CITY OF ELK GROVE CALIFORNIA

P:\Projects\333540\011\zDrawings\333540.011_Civil\8 Pavement Marking & Site Signage Details.dwg 5-26-10 01:48:32 PM andersonsg

PROJECT NO: 333540
C3.2
SHEET 8 OF 28

COSUMNES CSD NOTE:

1. INSTALLATION OF THE FIRE SERVICE LINE SHALL MEET THE MINIMUM REQUIREMENTS OF THE 2007 CALIFORNIA FIRE CODE, 2002 EDITION OF NFPA 13, 2002 EDITION OF NFPA 24, AND THE COSUMNES CSD FIRE DEPARTMENT SPECIFICATIONS. THE CONTRACTOR SHALL SUBMIT A COPY OF THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING TO THE OWNER AND THE AGENCY HAVING JURISDICTION.

SACRAMENTO COUNTY WATER AGENCY NOTES:

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE SACRAMENTO COUNTY STANDARD CONSTRUCTION SPECIFICATIONS (JANUARY 2008) AND IMPROVEMENT STANDARDS (OCTOBER 1, 2006) UNLESS OTHERWISE SHOWN OR DESCRIBED ON THE PLANS.
2. THE CONTRACTOR SHALL NOTIFY THE SUPERVISING CONSTRUCTION INSPECTOR, SACRAMENTO COUNTY CONSTRUCTION MANAGEMENT AND INSPECTION, AT 916-875-2700, FIVE (5) WORKING DAYS IN ADVANCE OF BEGINNING WORK.
3. PLANS SHALL BE RESUBMITTED FOR APPROVAL IF CONSTRUCTION OF WATER FACILITIES HAS NOT BEGUN WITHIN ONE (1) YEAR AFTER THE APPROVAL DATE OF THESE IMPROVEMENT PLANS.
4. ALL WORK SHALL BE INSPECTED BY SACRAMENTO COUNTY CONSTRUCTION MANAGEMENT AND INSPECTION PRIOR TO BACKFILLING.
5. THE CONTRACTOR SHALL NOTIFY THE SACRAMENTO COUNTY WATER RESOURCES MAINTENANCE, UNDERGROUND CONSTRUCTION & MAINTENANCE SECTION AT 916-875-7014 IN CASE OF AN EMERGENCY.
6. A CONSTRUCTION WATER PERMIT IS REQUIRED FOR ANY WATER WITHDRAWN FROM NEWLY CONSTRUCTED OR EXISTING WATER DISTRIBUTION SYSTEM. WATER USE SHALL COMPLY WITH RULES AND REGULATIONS OF THE CONSTRUCTION WATER PERMIT. A TESTED AND APPROVED TEMPORARY BACKFLOW PREVENTION ASSEMBLY SHALL BE REQUIRED FOR CERTAIN INSTALLATIONS AS DETERMINED BY THE SACRAMENTO COUNTY WATER AGENCY. FAILURE BY THE CONTRACTOR TO OBTAIN AND DISPLAY A PERMIT WILL RESULT IN A $168 FINE FOR EACH OCCURRENCE. CONTACT JAMES SACAYANAN AT 916-875-5837 TO OBTAIN A CONSTRUCTION WATER PERMIT FIVE (5) WORKING DAYS IN ADVANCE OF BEGINNING WORK. THE CONTRACTOR SHALL HAVE ALL APPROVED PAPERWORK IN POSSESSION PRIOR TO CONNECTION TO EXISTING WATER SYSTEM FOR CONSTRUCTION WATER.
7. THE CONTRACTOR SHALL NOTIFY THE SUPERVISING CONSTRUCTION INSPECTOR AT SACRAMENTO COUNTY CONSTRUCTION MANAGEMENT AND INSPECTION, OR THE INSPECTOR FOR THE PROJECT'S WATER FACILITIES AT 916-875-2700, FIVE (5) DAYS IN ADVANCE OF CONNECTING TO THE EXISTING WATER SYSTEM SO THE INSPECTOR CAN ARRANGE FOR CLOSURE OF VALVES AND CUSTOMER NOTIFICATION OF SHUT DOWN PRIOR TO CONNECTION BEING MADE. THE METHOD OF CONNECTION TO THE EXISTING WATER MAIN(S) SHALL BE BY DIRECT CONNECTION, HOT TAP, OR CUT-IN AS SPECIFIED ON THESE PLANS. THE COUNTY WILL ARRANGE FOR CLOSURE OF VALVES AND CUSTOMER NOTIFICATIONS OF SHUTDOWN TO ALLOW CONNECTIONS TO THE WATER SYSTEM TO BE MADE. THE CONTRACTOR IS PROHIBITED FROM OPERATING VALVES THAT ARE NOT PART OF THIS PROJECT. THE CONTRACTOR SHALL DISINFECT AND FLUSH THE NEW WATER SYSTEM PRIOR TO CONNECTING TO EXISTING WATER SYSTEM PER SACRAMENTO COUNTY STANDARD CONSTRUCTION SPECIFICATIONS.
8. SERVICE CONNECTIONS TO AN EXISTING WATER MAIN, OR TO AN EXTENSION OF AN EXISTING WATER MAIN, SHALL BE MADE BY A QUALIFIED CONTRACTOR, AFTER PAYMENT OF ALL APPLICABLE FEES AND ISSUANCE OF A CONNECTION PERMIT. THE CONTRACTOR SHALL SCHEDULE AND PROCEED WITH THE SERVICE CONNECTION WITHOUT DELAY AND WITH MINIMUM INTERFERENCE TO EXISTING WATER AND FIRE SERVICES. AN INSPECTION BY COUNTY CONSTRUCTION MANAGEMENT AND INSPECTION OF ALL CONNECTIONS MADE BY THE CONTRACTOR IS REQUIRED PRIOR TO BACKFILLING. THE COUNTY RESERVES THE OPTION TO MAKE ALL WATER AND FIRE SERVICE TAPS AFTER PAYMENT OF FEES AND ISSUANCE OF A CONNECTION PERMIT.
9. FOR SINGLE FAMILY RESIDENTIAL WATER METERS: THE CONTRACTOR SHALL INSTALL THE SERVICE LINES AND POST MARKERS PER SACRAMENTO COUNTY STANDARD DETAILS 8-1 AND 8-6D, AND THE HOME BUILDER SHALL INSTALL THE WATER METERS, WATER METER BOXES AND APPURTENANCES PER SACRAMENTO COUNTY STANDARD DETAIL 8-6A. FOR COMMERCIAL, MULTI-FAMILY, AND IRRIGATION WATER METERS: THE CONTRACTOR SHALL INSTALL ALL WATER FACILITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
10. THE WATER SYSTEM CONTRACTOR SHALL COORDINATE WITH THE STREET LIGHTING CONTRACTOR TO AVOID CONFLICTS BETWEEN WATER SERVICES AND STREET LIGHT FOUNDATIONS AND ELECTRICAL PULL BOXES. WATER SERVICES SHALL BE A MINIMUM OF FIVE (5) FEET FROM STREET LIGHT FOUNDATION.
11. THE REDUCED PRESSURE PRINCIPLE (RP) BACKFLOW PREVENTER SHALL BE LOCATED WITHIN FIVE (5) FEET OF THE WATER METER.
12. PIPE-TO-PIPE PUSH-ON JOINTS WILL NOT BE ALLOWED WITHIN SIX FEET (6') OF A VALVE, FITTING, OR HYDRANT. DEFLECTION OF PIPE WILL NOT BE ALLOWED WITHIN TEN FEET (10') OF ANY FITTING OR VALVE.
13. STANDARD PIPE LENGTHS (MINIMUM EIGHTEEN (18) TO TWENTY (20) FEET) SHALL BE USED FOR ALL HORIZONTAL AND VERTICAL DEFLECTIONS.
14. FIRE HYDRANT TYPE, LOCATION, AND COLOR SHALL BE APPROVED BY THE FIRE DEPARTMENT AND THE SACRAMENTO COUNTY WATER AGENCY. FIRE HYDRANT TYPE SHALL BE CLOW 960 OR APPROVED EQUAL. FIRE HYDRANTS SHALL BE COLORED WHITE AS PER FIRE DEPARTMENT REQUIREMENTS AND THE COATING SHALL BE FACTORY APPLIED. FIELD APPLIED COATINGS ARE NOT ACCEPTABLE.
15. NO PART OF THE FIRE HYDRANT SHALL BE CLOSER THAN 3 INCHES TO THE BACK OF THE SIDEWALK, WHERE SIDEWALK IS AGAINST CURB, OR BACK OF CURB IN THE CASE OF MEANDERING SIDEWALKS OR PLANTER STRIPS.
16. FOR FIRE HYDRANTS ON COMMERCIAL AND MULTI-FAMILY PROJECTS: FIRE HYDRANTS SHALL BE REQUIRED TO BE PROTECTED WITH FOUR-INCH (4") DIAMETER SCHEDULE 40 STEEL PIPE CONCRETE FILLED BOLLARDS AS SHOWN ON THE PLANS. BOLLARDS SHALL BE CONSTRUCTED AND PAINTED AS SHOWN ON THE PLANS.
17. VALVES THREE INCHES (3") AND LARGER PLACED AT TEES, CROSSES, ELBOWS, AND REDUCERS SHALL BE FLANGED AND BOLTED TO THE FITTINGS.
18. ALL ELBOWS, TEES, CROSSES, REDUCERS, BLOW-OFFS, DEAD ENDS, AND VALVES SHALL BE RESTRAINED TO PREVENT MOVEMENT WHEN PRESSURIZED. RESTRAINTS SHALL BE INSTALLED WHETHER SHOWN ON PLANS AND DETAILS OR NOT. VALVES SHALL BE TREATED AS BI-DIRECTIONAL DEAD-ENDS WHEN DETERMINING REQUIRED RESTRAINED LENGTHS. THE TYPE OF RESTRAINT SHALL BE THRUST BLOCKS OR JOINT RESTRAINT DEVICES, AS HEREINAFTER SPECIFIED. THRUST BLOCKS SHALL BE USED FOR THE PIPE SIZES AND LOCATIONS AS SHOWN ON THE STANDARD DRAWINGS. JOINT RESTRAINING DEVICES SHALL BE USED AT ALL OTHER LOCATIONS, WHERE UTILITY CONFLICTS DO NOT LEAVE ROOM FOR THRUST BLOCKS, OR WHERE SPECIFIED. JOINT RESTRAINING DEVICES SHALL BE INSTALLED IN ALL PUSH ON AND MECHANICAL JOINTS WITHIN THE SPECIFIED RESTRAINED LENGTH. THE RESTRAINED LENGTH SHALL COMPLY WITH NOTES ON THE PLANS, OR STANDARD DRAWINGS, WHICHEVER IS LONGER. IN THE EVENT THAT NO RESTRAINED LENGTH IS SPECIFIED, THE CONTRACTOR SHALL OBTAIN THE REQUIRED RESTRAINED LENGTH FROM THE ENGINEER.
19. JOINT RESTRAINING DEVICES FOR MECHANICAL JOINTS SHALL BE EBAA MEGALUG 1100, OR STAR PIPE PRODUCTS STARGRIP 3000 FOR DUCTILE IRON PIPE; AND EBAA MEGALUG 2000PV, OR STAR PIPE PRODUCTS ALLGRIP 3600, FOR PVC PIPE; OR APPROVED EQUAL BY SACRAMENTO COUNTY WATER AGENCY. ONLY DUCTILE IRON PIPE SHALL BE USED WHEN RESTRAINING PUSH-ON JOINTS. PUSH-ON RESTRAINTS SHALL BE US PIPE FIELD LOK GASKETS, OR US PIPE TR FLEX PIPE, OR APPROVED EQUAL BY SACRAMENTO COUNTY WATER AGENCY. OUTSIDE THE BELL RESTRAINING DEVICES AND RESTRAINED PVC PUSH-ON JOINTS WILL NOT BE ALLOWED. THE PIPE LENGTH FROM THE RESTRAINED FITTING OR VALVE SHALL BE MINIMUM 18-FEET, UNLESS OTHERWISE SPECIFIED.
20. BUTTERFLY VALVES SHALL BE MANUFACTURED BY DEZURIK, PRATT, MUELLER, OR APPROVED EQUAL BY SACRAMENTO COUNTY WATER AGENCY.
21. KEY/ACCESS CODES MUST BE PROVIDED TO THE SACRAMENTO COUNTY WATER QUALITY MAINTENANCE, UNDERGROUND REPAIR SECTION PRIOR TO ACCEPTANCE OF THIS PROJECT.
22. THREE (3) SETS OF "AS-BUILT" OR RECORD DRAWINGS PLANS SHALL BE SUBMITTED TO THE SUPERVISING CONSTRUCTION INSPECTOR AT SACRAMENTO COUNTY CONSTRUCTION MANAGEMENT AND INSPECTION PRIOR TO ACCEPTANCE OF THE WATER SYSTEM BY THE COUNTY. THE PLANS SHALL INCLUDE THE FOLLOWING:
    A. ALL SHEETS SHALL BE STAMPED AS-BUILT OR RECORD DRAWING.
    B. TOP OF PIPE ELEVATIONS AT THE END OF DISTRIBUTION AND TRANSMISSION MAINS.
    C. THE TYPE OF WATER DISTRIBUTION MAIN AND TRANSMISSION MAIN PIPE SHALL BE CLEARLY MARKED ON EACH SHEET.
    D. THE TYPE OF END FITTING AND PIPE AT THE END OF THE DISTRIBUTION MAIN AND TRANSMISSION MAINS SHALL BE DESCRIBED.
    E. CHANGES IN LOCATION OF VALVES, FITTINGS, AIR RELEASE/VACUUM VALVES, BLOW-OFF ASSEMBLIES, HYDRANTS, AND WATER SERVICES FOR WHICH AN IMPROVEMENT PLAN REVISION WAS NOT OBTAINED.
    F. AS-BUILT OR RECORD DRAWINGS SHALL BE APPROVED BY WATER SUPPLY BEFORE ACCEPTANCE OF THE PROJECT.
23. PRIOR TO CONNECTION TO EXISTING WATER SYSTEM, NEWLY CONSTRUCTED WATER MAINS UPON PROPER DISINFECTION AND FLUSHING SHALL BE SAMPLED FOR BACTERIOLOGICAL WATER QUALITY IN ACCORDANCE WITH AWWA STANDARD C651-05. WHERE CONFLICTS EXIST BETWEEN COUNTY OF SACRAMENTO STANDARD CONSTRUCTION SPECIFICATION, SECTION 41-16 (DISINFECTION OF WATER MAINS) AND AWWA STANDARD C651-05, AWWA C651-05 REQUIREMENTS SHALL GOVERN. BACTERIOLOGICAL EXAMINATION STANDARDS REQUIRE TWO (2) CONSECUTIVE SETS OF ACCEPTABLE SAMPLES, TAKEN AT LEAST 24 HOURS APART, SHALL BE COLLECTED FROM THE NEWLY CONSTRUCTED WATER MAINS AT EACH OF THE FOLLOWING SAMPLE TEST POINTS: 1) AT EVERY 1,200 FEET ALONG THE WATER MAIN, 2) AT END OF THE WATER MAIN, 3) AND AT EACH BRANCH END. TEST SAMPLES SHALL BE COLLECTED PER STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER GUIDELINES AND LAB TESTED FOR: 1) THE ABSENCE OF COLIFORM ORGANISMS, AND 2) FOR A STANDARD HETEROTROPHIC PLATE COUNT (HPC) LESS THAN 500 CFU/ML. CHLORINE RESIDUAL LEVELS SHALL ALSO BE MEASURED AND REPORTED. WATER MAINS FOUND TO HAVE UNSATISFACTORY BACTERIOLOGICAL TEST RESULTS, SHALL BE RE-DISINFECTED AND TESTED PER AWWA STANDARD C651-05.
24. ALL BRASS COMPONENTS IN CONTACT WITH THE SUPPLY OF WATER SHALL COMPLY WITH THE STATE OF CALIFORNIA AB-1953 0.25% LOW-LEAD STANDARD AND ANSI/AWWA STANDARD C800. BRASS PRODUCTS SHALL BE MADE FROM EITHER CDA/UNS BRASS ALLOYS C8952 OR C89833, PER THE LATEST EDITION OF ANSI/AWWA C800 PARAGRAPH 4.1.2, WITH A MAXIMUM LEAD CONTENT OF 0.25% BY WEIGHT. BRASS SERVICE SADDLES SHALL BE MADE FROM CDA/UNS C8600 ALLOY.

GENERAL NOTE:

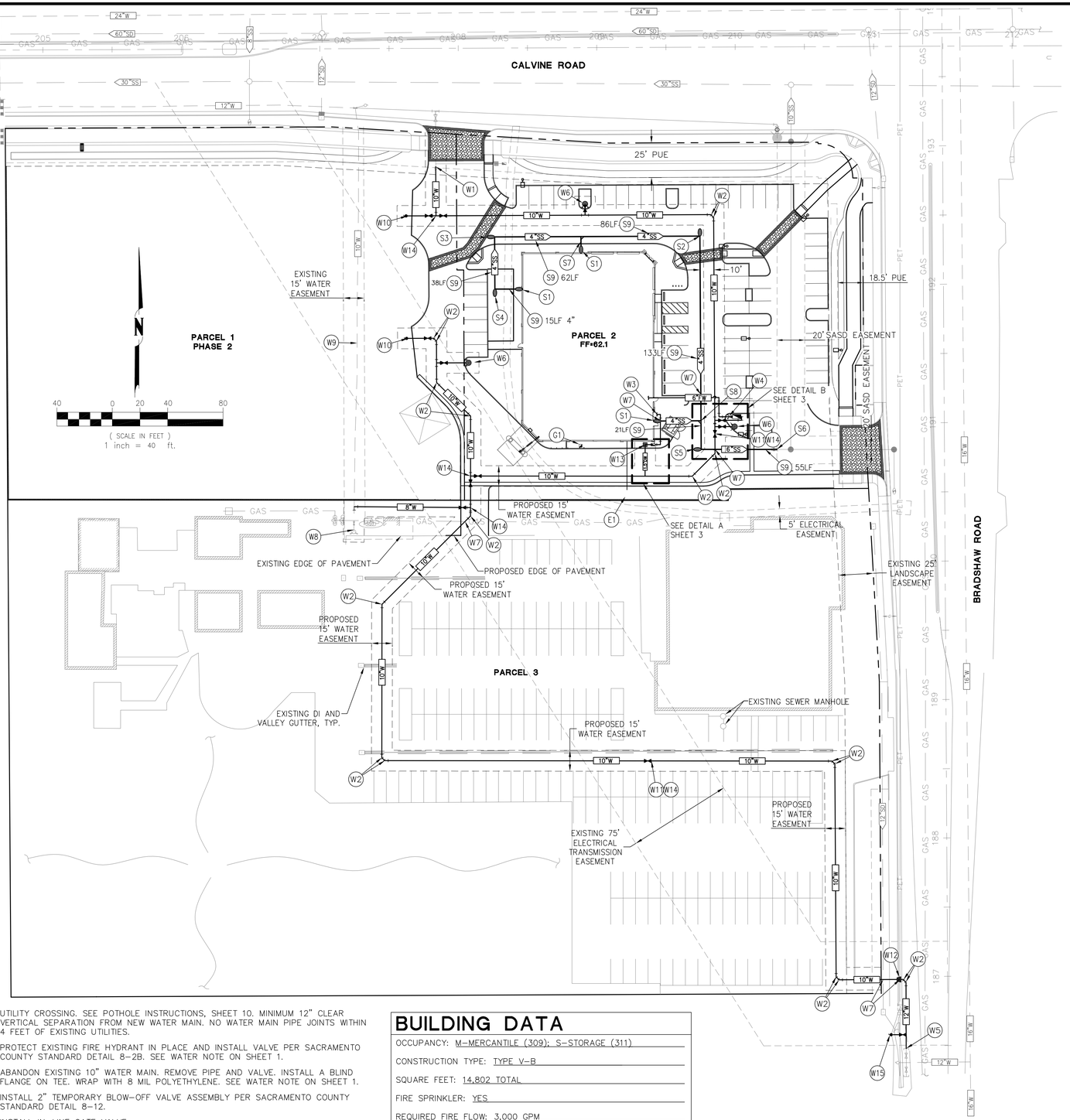
CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THIS PLAN OR NOT, PRIOR TO CONSTRUCTION. IF ANY UTILITIES CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN HEREON, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.

CONSTRUCTION NOTES:

- (G1) GAS METER. SEE PLUMBING PLANS.
- (E1) ELECTRICAL TRANSFORMER. SEE ELECTRICAL PLANS.
- (S1) PVC CLEANOUT TO GRADE PER DETAIL F, SHEET 12. INV=58.10'.
- (S2) PVC CLEANOUT TO GRADE PER DETAIL F, SHEET 12. INV=54.10'.
- (S3) PVC CLEANOUT TO GRADE PER DETAIL F, SHEET 12. INV=57.06'.
- (S4) PVC CLEANOUT TO GRADE PER DETAIL F, SHEET 12. INV=57.80'.
- (S5) PVC CLEANOUT TO GRADE PER DETAIL F, SHEET 12. INV=51.02'.
- (S6) CONNECT 6" SANITARY SEWER TO EXISTING 6" VCP STUB. INV=49.94'.
- (S7) 7LF 4" SS @ S=0.32. WYE CONNECTION TO MAIN. INV@MAIN=55.81'.
- (S8) 32LF 4" PVC SDR-35 @ S=0.20. WYE CONNECTION TO MAIN. INV@MAIN=51.44'.
- (S9) CONSTRUCT PVC SDR-35 SEWER PIPE WITH SIZES AND LENGTHS SHOWN. S=0.02 FT/FT UNLESS OTHERWISE NOTED.

WATER CONSTRUCTION NOTES:

- (W1) REMOVE EXISTING TEMPORARY BLOW-OFF VALVE AND CONNECT TO EXISTING WATER MAIN. DISINFECT AND FLUSH NEW WATER PRIOR TO CONNECTION PER SACRAMENTO COUNTY STANDARD CONSTRUCTION SPECIFICATION 41-16, SCWA WATER NOTES 23 AND 24, AND AWWA STANDARD C651.05.
- (W2) INSTALL 45° FITTING.
- (W3) STUB WATER 5' FROM BUILDING. REFER TO PLUMBING PLANS FOR CONTINUATION. MAINTAIN MINIMUM 1' CLEARANCE FROM SEWER CLEANOUT.
- (W4) INSTALL 6" FIRE PROTECTION ASSEMBLY PER SACRAMENTO COUNTY STANDARD DETAIL 8-7.
- (W5) REMOVE EXISTING BLIND FLANGE AND CONNECT TO EXISTING WATER MAIN. DISINFECT AND FLUSH NEW WATER PRIOR TO CONNECTION PER SACRAMENTO COUNTY STANDARD CONSTRUCTION SPECIFICATION 41-16, SCWA WATER NOTES 23 & 24, AND AWWA STANDARD C651.05.
- (W6) INSTALL FIRE HYDRANT ASSEMBLY PER SACRAMENTO COUNTY IMPROVEMENT STANDARD DETAILS 8-2B, 8-3A, AND 8-3B. PROVIDE BOLLARDS PER DETAIL P, SHEET 3.
- (W7) UTILITY CROSSING. SEE POTHOLE INSTRUCTIONS, SHEET 10. MINIMUM 12" CLEAR VERTICAL SEPARATION FROM NEW WATER MAIN. NO WATER MAIN PIPE JOINTS WITHIN 4 FEET OF EXISTING UTILITIES.
- (W8) PROTECT EXISTING FIRE HYDRANT IN PLACE AND INSTALL VALVE PER SACRAMENTO COUNTY STANDARD DETAIL 8-2B. SEE WATER NOTE ON SHEET 1.
- (W9) ABANDON EXISTING 10" WATER MAIN. REMOVE PIPE AND VALVE. INSTALL A BLIND FLANGE ON TEE. WRAP WITH 8 MIL POLYETHYLENE. SEE WATER NOTE ON SHEET 1.
- (W10) INSTALL 2" TEMPORARY BLOW-OFF VALVE ASSEMBLY PER SACRAMENTO COUNTY STANDARD DETAIL 8-12.
- (W1) INSTALL IN-LINE GATE VALVE.
- (W12) INSTALL 12"X10" CONCENTRIC REDUCER.
- (W13) INSTALL 1.5" DOMESTIC WATER SERVICE AND 1.5" WATER METER SENSUS SR POSITIVE DISPLACEMENT WITH RP DEVICE PER SACRAMENTO COUNTY STANDARD DETAILS 8-6B AND 8-8A.
- (W14) RESTRAIN VALVE(S) ON CROSS/TEE OR IN-LINE VALVE PER SACRAMENTO COUNTY STANDARD DETAIL 8-3B. (DIP REQUIRED FOR ALL RESTRAIN LENGTHS GREATER THAN 20 FEET).
- (W15) INSTALL 4" IN-LINE BLOW-OFF VALVE ASSEMBLY 40' FROM CENTERLINE OF BRADSHAW ROAD PER SACRAMENTO COUNTY STANDARD DETAIL 8-13C. SEE DETAIL 'A', SHEET 10.



BUILDING DATA

OCCUPANCY:	M-MERCANTILE (309); S-STORAGE (311)
CONSTRUCTION TYPE:	TYPE V-B
SQUARE FEET:	14,802 TOTAL
FIRE SPRINKLER:	YES
REQUIRED FIRE FLOW:	3,000 GPM
CODE REQUIREMENTS:	2007 CA FIRE, 2007 CA BUILDING, NFPA 24

DESIGN FIRE FLOW FOR THIS PROJECT IS 3,000 GPM.

WATER NOTES:

1. PRIOR TO ABANDONING THE EXISTING 10" WATER MAIN THAT IS IN SERVICE TO THE EXISTING FIRE HYDRANT ON PARCEL 3, CONSTRUCT NEW WATER MAIN SYSTEM AND CONNECT TO EXISTING FIRE HYDRANT.
2. ALL WATERLINE FITTINGS SHALL BE RESTRAINED BY APPROVED RESTRAINING DEVICES AND/OR THRUST BLOCKS. REFER TO THE LATEST EDITION OF THE COUNTY OF SACRAMENTO STANDARD CONSTRUCTION SPECIFICATIONS INCLUDING DETAILS 8-3A AND 8-3B AND SACRAMENTO COUNTY WATER AGENCY NOTES 18 & 19. RESTRAIN VERTICAL BENDS PER DETAIL 8-10 AND/OR AS SHOWN ON THESE PLANS.
3. UTILITIES MAY NOT BE LOCATED WITHIN WATER EASEMENT(S) EXCEPT IF THE UTILITY CROSSES THE WATER EASEMENT WITHIN 20 DEGREES OF PERPENDICULAR TO THE WATER MAIN.

AS-BUILT

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REV NO.	BY	DATE
ENGR INIT.	CITY ACCEPTANCE	

DATE: AS BUILT 5/10/2010
SCALE: AS SHOWN
DRAWN BY: S. ANDERSON
DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFELD

JACOBS
180 PROMENADE CIR. STE 300
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IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
UTILITY PLAN
CALIFORNIA

CITY OF ELK GROVE

PROJECT NO: 33J3540
C4.0
SHEET 9 OF 28

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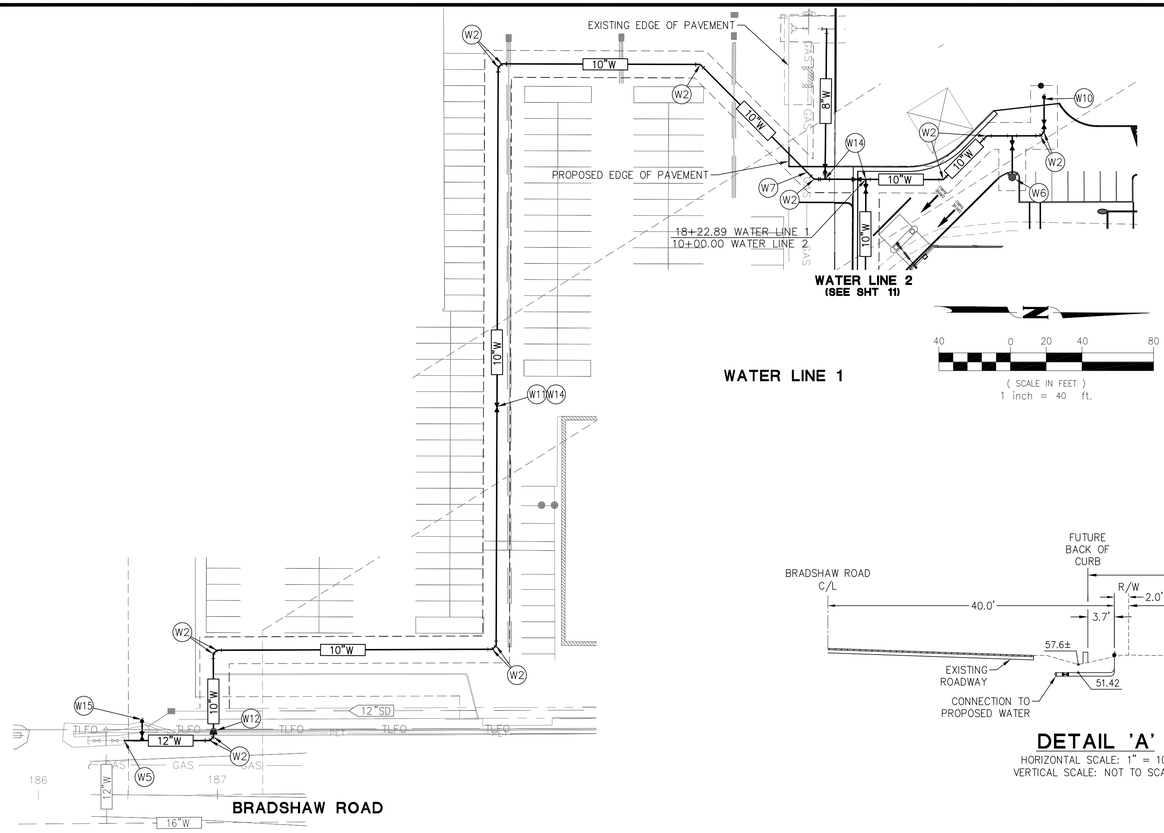
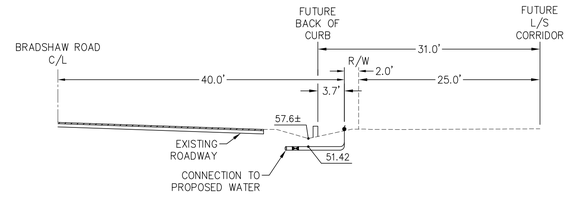




DETAIL 'A'

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: NOT TO SCALE

WATER NOTES:

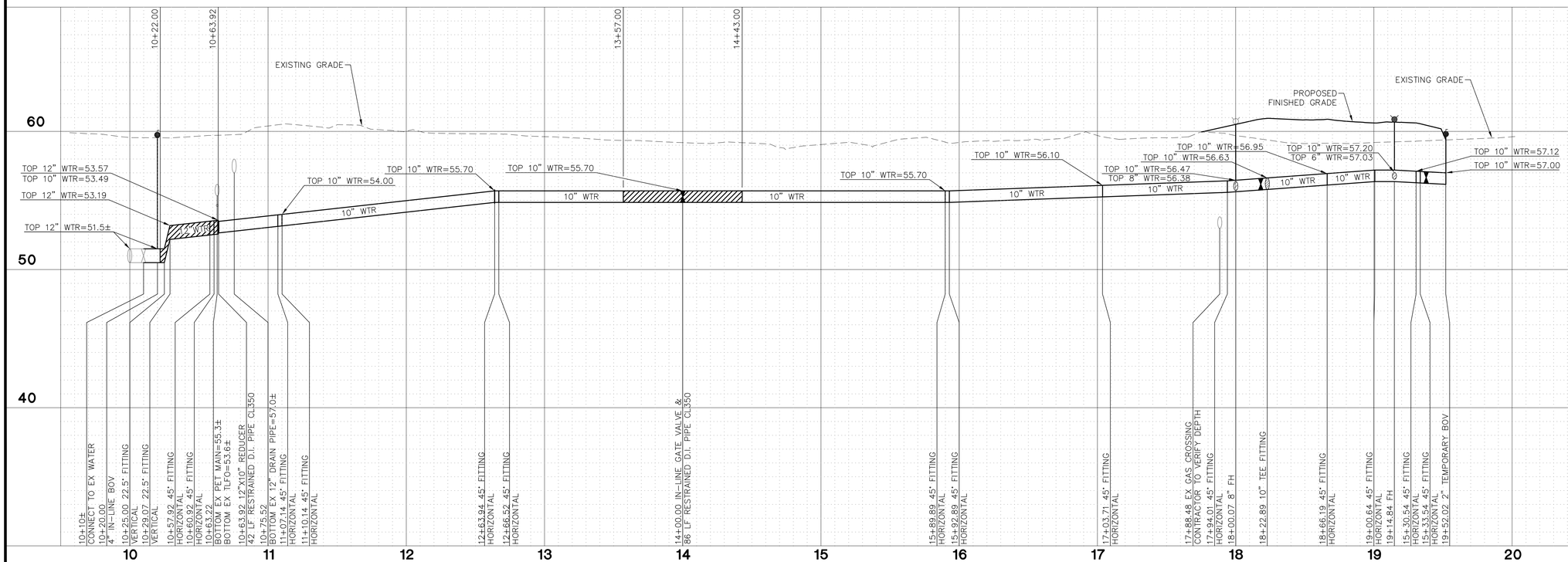
1. WATER SYSTEM HAS TO BE BUILT IN CONJUNCTION WITH THE OFF-SITE IMPROVEMENT PLAN.
2. ALL WATERLINE FITTINGS SHALL BE RESTRAINED BY APPROVED RESTRAINING DEVICES AND/OR THRUST BLOCKS. REFER TO THE LATEST EDITION OF THE COUNTY OF SACRAMENTO STANDARD CONSTRUCTION SPECIFICATIONS INCLUDING DETAILS 8-31 AND 8-3B AND SACRAMENTO COUNTY WATER AGENCY NOTES 18 AND 19. RESTRAIN VERTICAL BENDS PER DETAIL 8-10 AND/OR AS SHOWN ON THESE PLANS.
3. UTILITIES MAY NOT BE LOCATED WITHIN WATER EASEMENT(S) EXCEPT IF THE UTILITY CROSSES THE WATER EASEMENT WITHIN 20 DEGREES OF PERPENDICULAR TO THE WATER MAIN.

POTHOLE INSTRUCTIONS:

TWO WEEKS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL POTHOLE EXISTING UTILITIES AT EVERY LOCATION WHERE NEW WATER MAINS WILL CROSS EXISTING UTILITIES, AND AT EVERY LOCATION WHERE NEW WATER MAINS WILL BE CONNECTED TO EXISTING WATER MAINS. POTHOLES SHALL BE PERFORMED FOR ALL EXISTING UTILITIES OBSERVED IN THE FIELD. POTHOLES SHALL BE MADE DIRECTLY OVER THE POINT OF CROSSING, EVEN IF THE POINT OF CROSSING IS IN AN EXISTING ROAD. IF THE POINT OF CROSSING IS IN AN EXISTING ROAD, SUBMIT AND OBTAIN APPROVAL OF A TRAFFIC CONTROL PLAN PRIOR TO POTHOLING. THE CONTRACTOR SHALL POTHOLE AT THE USA-MARKED LOCATIONS, EXTEND THE POTHOLES TO 5 FEET ON EITHER SIDE OF THE USA-MARKINGS IF NECESSARY TO LOCATE THE UTILITY, EXPOSE THE UTILITIES SUFFICIENTLY TO IDENTIFY THE UTILITY SIZE, SURVEY TOP-OF-UTILITY ELEVATIONS AND COORDINATE, AND SURVEY THE BOTTOM ELEVATION OF DUCT BANKS AND CONCRETE ENCASEMENTS. IF A UTILITY IS NOT FOUND, CONTRACTOR SHALL IMMEDIATELY CALL THE UTILITY TO HAVE THE USA LOCATOR RE-MARK THE UTILITY WHILE THE CONTRACTOR'S POTHOLE CREW IS STILL MOBILIZED, AND REPEAT THE POTHOLE. CONTRACTOR SHALL TRANSMIT THE UTILITY SIZE, COORDINATES, AND ELEVATIONS TO THE INSPECTOR, SACRAMENTO COUNTY WATER AGENCY, AND THE DESIGN ENGINEER ON THE SAME DAY POTHOLES ARE PERFORMED FOR REVIEW.

WATER CONSTRUCTION NOTES:

- (W2) INSTALL 45° FITTING.
- (W5) REMOVE EXISTING BLIND FLANGE AND CONNECT TO EXISTING WATER MAIN. DISINFECT AND FLUSH NEW WATER PRIOR TO CONNECTION PER SACRAMENTO COUNTY STANDARD CONSTRUCTION SPECIFICATION 41-16, SCWA WATER NOTES 23 & 24, AND AWWA STANDARD C651.05.
- (W6) INSTALL FIRE HYDRANT ASSEMBLY PER SACRAMENTO COUNTY IMPROVEMENT STANDARD DETAILS 8-2B AND 8-3B. PROVIDE BOLLARDS PER DETAIL P, SHEET 3.
- (W7) UTILITY CROSSING. SEE POTHOLE INSTRUCTIONS. MINIMUM 12" CLEAR VERTICAL SEPARATION FROM NEW WATER MAIN. NO WATER MAIN PIPE JOINTS WITHIN 4 FEET OF EXISTING UTILITIES.
- (W10) INSTALL 2" TEMPORARY BLOW-OFF VALVE ASSEMBLY PER SACRAMENTO COUNTY STANDARD DETAIL 8-12.
- (W11) INSTALL IN-LINE GATE VALVE.
- (W12) INSTALL 12"X10" CONCENTRIC REDUCER.
- (W14) RESTRAIN VALVE(S) ON CROSS/TEE OR IN-LINE VALVE PER SACRAMENTO COUNTY STANDARD DETAIL 8-3B. (DIP REQUIRED FOR ALL RESTRAIN LENGTHS GREATER THAN 20 FEET).
- (W15) INSTALL 4" IN-LINE BLOW-OFF VALVE ASSEMBLY 40' FROM BRADSHAW ROAD CENTERLINE PER SACRAMENTO COUNTY STANDARD DETAIL 8-13C. SEE ALSO DETAIL 'A', THIS SHEET.



AS-BUILT

ENGR INIT.	BY	DATE
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REV NO.	

DATE: AS BUILT 5/10/2010
SCALE: H:1"=40' V:1"=4'
DRAWN BY: S. ANDERSON
DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFELD

JACOBS™
180 PROMENADE CIR. STE 300
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IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
WATER PROFILES

CITY OF ELK GROVE CALIFORNIA

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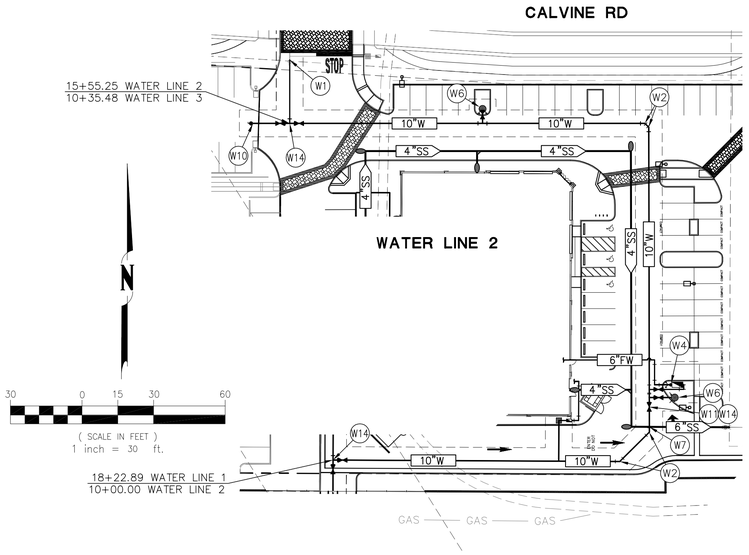
PROJECT NO: 333540
C4.1
SHEET 10 OF 28



GENERAL NOTES

1. WATER SYSTEM HAS TO BE BUILT IN CONJUNCTION WITH THE OFF-SITE IMPROVEMENT PLAN.
2. ALL WATERLINE FITTINGS SHALL BE RESTRAINED BY APPROVED RESTRAINING DEVICES AND/OR THRUST BLOCKS. REFER TO THE LATEST EDITION OF THE COUNTY OF SACRAMENTO STANDARD CONSTRUCTION SPECIFICATIONS INCLUDING DETAILS 8-31 AND 8-3B AND SACRAMENTO COUNTY WATER AGENCY NOTES 18 AND 19. RESTRAIN VERTICAL BENDS PER DETAIL 8-10 AND/OR AS SHOWN ON THESE PLANS.
3. UTILITIES MAY NOT BE LOCATED WITHIN WATER EASEMENT(S) EXCEPT IF THE UTILITY CROSSES THE WATER EASEMENT WITHIN 20 DEGREES OF PERPENDICULAR TO THE WATER MAIN.

WATER CONSTRUCTION NOTES:

(W1) REMOVE EXISTING TEMPORARY BLOW-OFF VALVE AND CONNECT TO EXISTING WATER MAIN. DISINFECT AND FLUSH NEW WATER PRIOR TO CONNECTION PER SACRAMENTO COUNTY STANDARD CONSTRUCTION SPECIFICATION 41-16, SCWA WATER NOTES 23 AND 24, AND AWWA STANDARD C651-05.

(W2) INSTALL 45° FITTING.

(W4) INSTALL 6" FIRE PROTECTION ASSEMBLY PER SACRAMENTO COUNTY STANDARD DETAIL 8-7.

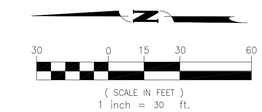
(W6) INSTALL FIRE HYDRANT ASSEMBLY PER SACRAMENTO COUNTY IMPROVEMENT STANDARD DETAILS 8-2B AND 8-3B. PROVIDE BOLLARDS PER DETAIL P, SHEET 3.

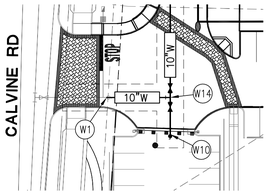
(W7) UTILITY CROSSING. SEE POTHOLE INSTRUCTIONS, SHEET 10. MINIMUM 12" CLEAR VERTICAL SEPARATION FROM NEW WATER MAIN. NO WATER MAIN PIPE JOINTS WITHIN 4 FEET OF EXISTING UTILITIES.

(W10) INSTALL 2" TEMPORARY BLOW-OFF VALVE ASSEMBLY PER SACRAMENTO COUNTY STANDARD DETAIL 8-12.

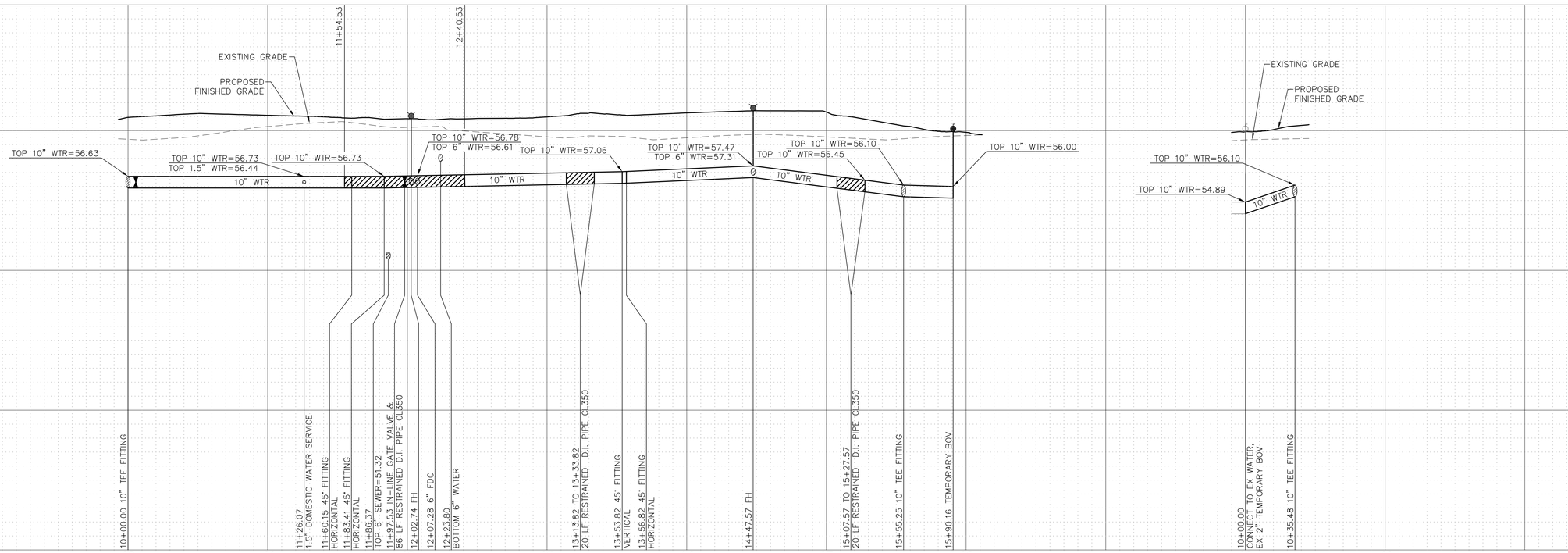
(W11) INSTALL IN-LINE GATE VALVE.

(W14) RESTRAIN VALVE(S) ON CROSS/TEE OR IN-LINE VALVE PER SACRAMENTO COUNTY STANDARD DETAIL 8-3B. (DIP REQUIRED FOR ALL RESTRAIN LENGTHS GREATER THAN 20 FEET).





WATER LINE 3



AS-BUILT

ENGR INIT.	BY	DATE
	CITY ACCEPTANCE	

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

REV NO.

DATE: AS BUILT 5/10/2010
SCALE: H: 1"=40' V:1"=4'
DRAWN BY: S. ANDERSON
DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFELD

JACOBS™
180 PROMENADE CIR. STE 200
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
WATER PROFILES

CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
C4.2
SHEET 11 OF 28

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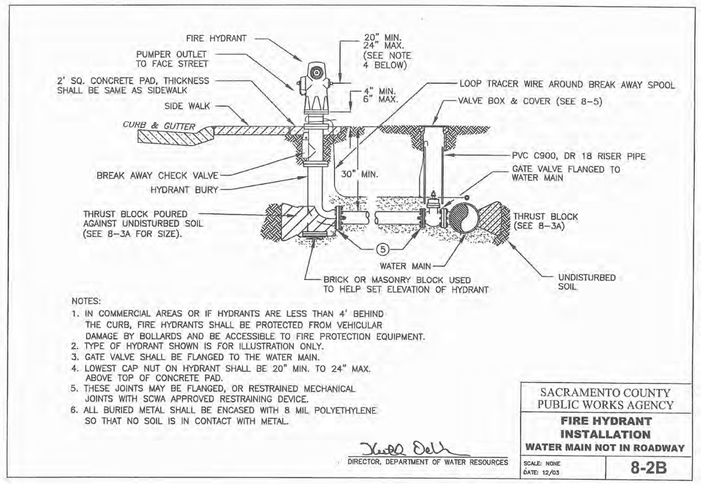


NOTES:
1. IN COMMERCIAL AREAS OR IF HYDRANTS ARE LESS THAN 4' BEHIND THE CURB, FIRE HYDRANTS SHALL BE PROTECTED FROM VEHICULAR DAMAGE BY BOLLARDS AND BE ACCESSIBLE TO FIRE PROTECTION EQUIPMENT.
2. TYPE OF HYDRANT SHOWN IS FOR ILLUSTRATION ONLY.
3. GATE VALVE SHALL BE FLANGED TO THE WATER MAIN.
4. LOWEST CAP NUT ON HYDRANT SHALL BE 20" MIN. TO 24" MAX. ABOVE TOP OF CONCRETE PAD.
5. THESE JOINTS MAY BE FLANGED, OR RESTRAINED MECHANICAL JOINTS WITH SCWA APPROVED RESTRAINING DEVICE.
6. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.

SACRAMENTO COUNTY PUBLIC WORKS AGENCY

FIRE HYDRANT INSTALLATION

WATER MAIN NOT IN ROADWAY

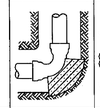
DIRECTOR, DEPARTMENT OF WATER RESOURCES

SCALE: NONE
DATE: 12/03

8-2B

A FIRE HYDRANT INSTALLATION
NOT TO SCALE

REQUIRED BEARING AREA IN TOTAL SQUARE FEET

TYPE OF FITTING		90° BEND	45° BEND	11-1/4° BEND 22-1/2° BEND	TEE	DEAD END	TEE WITH PLUG	CROSS WITH PLUGS
TYPICAL INSTALLATION						SEE NOTE 5		
SIZE OF PIPE	4"	2	1	1	2	2	THRUST BLOCKS NOT ALLOWED. USE RESTRAINED JOINTS WITH RESTRAINED LENGTH PER 8-3B FOR "DEAD END".	
	6"	4	2	1	3	3		
	8"	7	4	2	5	5		
	10"	12	6	3	8	8		
	12"	16	10	5	12	12		

NOTES:
1. THRUST BLOCKS SHALL BE CONSTRUCTED OF CLASS "B" CONCRETE.
2. BEARING AREAS GIVEN ARE FOR TEST PRESSURES OF 150 PSI IN SOIL WITH MINIMUM 2,000 PSF BEARING CAPACITY. IF TEST PRESSURE IS HIGHER OR SOIL BEARING CAPACITY IS LOWER, THRUST BLOCK SIZE SHALL BE APPROVED BY SCWA.
3. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL. IF THIS CANNOT BE DONE, USE RESTRAINED JOINTS TO RESIST THRUST OVER RESTRAINED LENGTHS APPROVED BY SCWA (FOR A DEAD END, USE RESTRAINED LENGTH PER 8-3B).
4. PIPE JOINTS SHALL BE KEPT CLEAR OF CONCRETE.
5. FOR DEAD ENDS, INSTALL 2" TEMPORARY BLOW OFF PER 8-12.

DIRECTOR, DEPARTMENT OF WATER RESOURCES

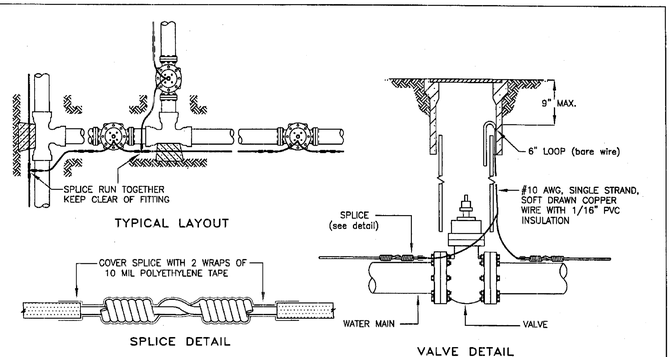
COUNTY OF SACRAMENTO MUNICIPAL SERVICES AGENCY

THRUST BLOCK BEARING AREA

SCALE: NONE
DATE: 12/03

8-3A

B THRUST BLOCK BEARING AREA
NOT TO SCALE



NOTES:
1. WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES, EXCEPT AS NOTED.
2. LOCATING WIRE SHALL BE LAID ON TOP OF THE WATER MAIN, AND SHALL BE TAPED TO IT OR THE POLYETHYLENE ENCASEMENT (IF THE PIPE IS DUCTILE IRON) AT 10' INTERVALS AND TAPED AT ALL FITTINGS. TAPE SHALL BE 10 MIL POLYETHYLENE.
3. CONTRACTOR SHALL CONDUCT A CONTINUITY TEST ON ALL LOCATING WIRE SPLICES.
4. ALL SPLICES SHALL BE SOLDERED.

DIRECTOR, DEPARTMENT OF WATER RESOURCES

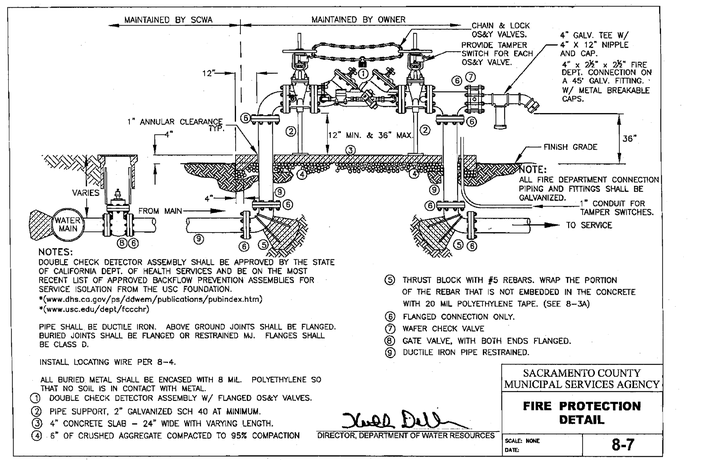
COUNTY OF SACRAMENTO MUNICIPAL SERVICES AGENCY

LOCATING WIRE FOR WATER MAINS AND SERVICES

SCALE: NONE
DATE: 12/03

8-4A

C LOCATING WIRE FOR WATER MAINS AND SERVICES
NOT TO SCALE



NOTES:
DOUBLE CHECK DETECTOR ASSEMBLY SHALL BE APPROVED BY THE STATE OF CALIFORNIA DEPT. OF HEALTH SERVICES AND BE ON THE MOST RECENT LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES FOR SERVICE ISOLATION FROM THE USC FOUNDATION.
*(www.dhs.ca.gov/ps/ddwem/publications/pubindex.htm)
*(www.usc.edu/dept/fccchr)

PIPE SHALL BE DUCTILE IRON. ABOVE GROUND JOINTS SHALL BE FLANGED. BURIED JOINTS SHALL BE FLANGED OR RESTRAINED MJ. FLANGES SHALL BE CLASS D.

INSTALL LOCATING WIRE PER 8-4.

ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL. POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.

1. DOUBLE CHECK DETECTOR ASSEMBLY W/ FLANGED OS&Y VALVES.
2. PIPE SUPPORT, 2" GALVANIZED SCH 40 AT MINIMUM.
3. 4" CONCRETE SLAB – 24" WIDE WITH VARYING LENGTH.
4. 6" OF CRUSHED AGGREGATE COMPACTED TO 95% COMPACTION
5. THRUST BLOCK WITH #5 REBARS. WRAP THE PORTION OF THE REBAR THAT IS NOT EMBEDDED IN THE CONCRETE WITH 20 MIL POLYETHYLENE TAPE. (SEE 8-3A)
6. FLANGED CONNECTION ONLY.
7. WAFER CHECK VALVE
8. GATE VALVE, WITH BOTH ENDS FLANGED.
9. DUCTILE IRON PIPE RESTRAINED.

SACRAMENTO COUNTY MUNICIPAL SERVICES AGENCY

FIRE PROTECTION DETAIL

DIRECTOR, DEPARTMENT OF WATER RESOURCES

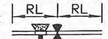
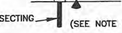
SCALE: NONE
DATE:

8-7

THIS DETAIL SUPERCEDES ALL PREVIOUS VERSIONS OF THIS DETAIL.

D FIRE PROTECTION DETAIL
NOT TO SCALE

RESTRAINED LENGTH IN FEET

PIPE CONFIGURATION	CROSSING PIPE SIZE	30" COVER AND GREATER 6" DIP	6" PVC	8" DIP	8" PVC	10" DIP	10" PVC	12" DIP	12" PVC	60" COVER AND GREATER 6" DIP	6" PVC	8" DIP	8" PVC	10" DIP	10" PVC	12" DIP	12" PVC
X = PVC PIPE NOT ALLOWED IN RESTRAINED LENGTH, USE ONLY DUCTILE IRON.																	
IN LINE VALVE		38	X	45	X	58	X	70	X	17	17	26	X	32	X	41	X
VALVE AT TEE	6"	6	6	17	13	37	X	48	X	6	6	12	10	20	19	30	X
	8"	6	6	12	8	27	19	43	X	6	6	6	6	17	15	27	X
	10"	6	6	6	6	19	15	39	X	6	6	6	6	12	11	24	X
INTERSECTING PIPE (SEE NOTE 4)	12"	6	6	6	6	14	10	32	X	6	6	6	6	10	8	20	19
TEE W/O THRUST BLOCK (SEE NOTE 5) 		37	X	42	X	56	X	68	X	16	15	23	X	30	X	38	X
VALVE AT CROSS (SEE NOTE 6) 	CROSSING PIPE 6"	6	6	18	15	41	X	50	X	6	6	14	12	22	20	32	X
	8"	6	6	16	12	32	20	44	X	6	6	6	6	18	16	29	X
	10"	6	6	6	6	20	17	40	X	6	6	6	6	14	12	26	X
	12"	6	6	6	6	18	14	34	X	6	6	6	6	12	10	22	20
DEAD END W/O THRUST BLOCK (SEE NOTE 5)		64	X	84	X	100	X	118	X	34	X	44	X	53	X	63	X

RL = RESTRAINED LENGTH

NOTES:
1) ALL JOINTS WITHIN THE RESTRAINED LENGTH SHALL BE RESTRAINED.
2) RESTRAINING DEVICES FOR MJ'S: FOR DUCTILE IRON USE EBAA MEGALUG 1100, STAR PIPE PRODUCTS STARGRIP 3000, OR SIGMA ONE LOK SLD; FOR PVC PIPE USE EBAA 2000PV, OR STAR PIPE PRODUCTS ALLGRIP 3600.
3) RESTRAINING DEVICES FOR PUSH-ON JOINTS: FOR DUCTILE IRON USE U.S. PIPE FIELD LOK GASKETS, U.S. PIPE TR FLEX PIPE, OR APPROVED EQUAL; RESTRAINED PVC PUSH-ON JOINTS NOT ALLOWED, USE DUCTILE IRON PIPE ONLY FOR RESTRAINED PUSH-ON JOINTS.
4) IF THRUST BLOCK IS NOT INSTALLED BEHIND TEE, RESTRAINED LENGTH SHALL BE APPROVED BY SCWA.
5) THIS CONFIGURATION ALLOWED ONLY IF A THRUST BLOCK CANNOT BE INSTALLED BEHIND THE TEE/DEAD END IN ACCORDANCE WITH 8-3A. IF THRUST BLOCK IS INSTALLED, RESTRAINED LENGTH NOT REQUIRED.
6) JOINTS ON CROSSING PIPES SHALL BE RESTRAINED FOR MINIMUM 18 FEET IN EACH DIRECTION.
7) RESTRAINED LENGTHS ARE BASED ON 150 PSI PRESSURE. IF HIGHER PRESSURES OR HIGHER SURGES ARE ANTICIPATED, THIS TABLE DOES NOT APPLY AND RESTRAINED LENGTHS SHALL BE APPROVED BY SCWA.

DIRECTOR, DEPARTMENT OF WATER RESOURCES

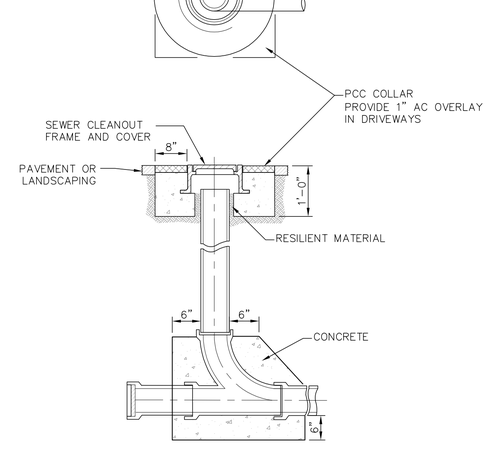
COUNTY OF SACRAMENTO MUNICIPAL SERVICES AGENCY

PIPE RESTRAINED LENGTH

SCALE: NONE
DATE: 12/03

8-3B

E PIPE RESTRAINED LENGTH
NOT TO SCALE



F SEWER CLEAN OUT TO GRADE
NOT TO SCALE

AS-BUILT

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

REV NO.	ENGR INIT.	BY	DATE
		CITY ACCEPTANCE	

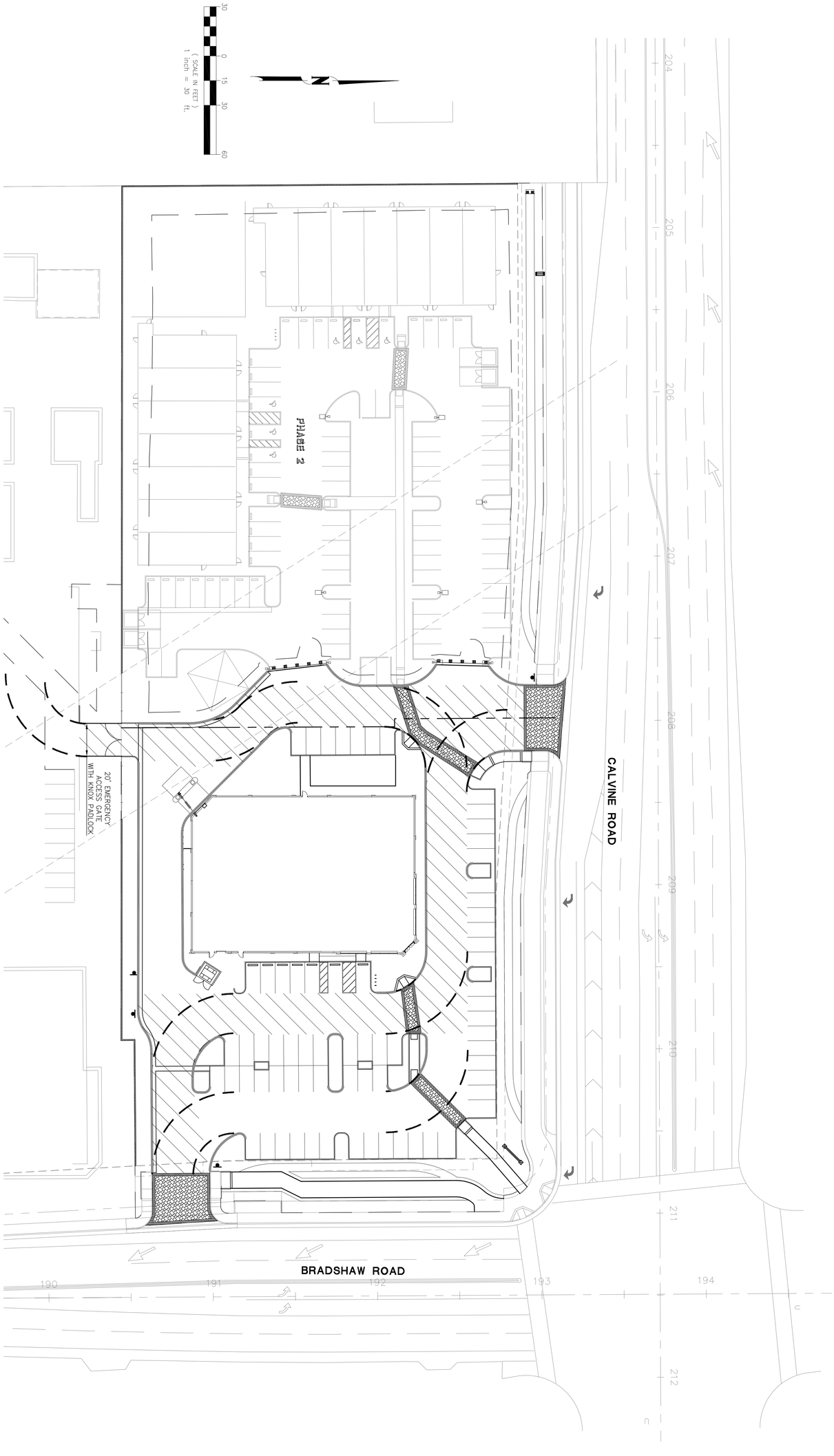
DATE: AS BUILT 5/10/2010
SCALE: AS SHOWN
DRAWN BY: S. ANDERSON
DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFELD

JACOBS
180 PROMENADE CIR. STE 300
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
UTILITY DETAILS
CITY OF ELK GROVE CALIFORNIA

P:\Projects\333540\011\p2drawings\333540_011_Civil\12 Utility Details.dwg 5-26-10 01:49:39 PM andersonsg

PROJECT NO: 333540
C4.3
SHEET 12 OF 28



LEGEND

- EMERGENCY ACCESS ROUTE
- FIRE TRUCK TURNING RADII
  - 25' INSIDE RADIUS
  - 50' OUTSIDE RADIUS
- RED PAINTED CURB WITH "NO PARKING" LETTERING PER COSUMNES CSD REQUIREMENTS

NOTES:

1. FIRE LANES SHALL BE MINIMUM OF 20' CLEAR WIDTH AND 13.5' CLEAR HEIGHT.
2. FIRE LANES SHALL BE DELINEATED BY PAINTING RED CURBS PER COSUMNES CSD REQUIREMENTS.

PROJECT NO: 333540	IMPROVEMENT PLANS FOR	JACOBS™	DATE: AS BUILT 5/10/2010	THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.
C4.4	SHOPS AT CALVINE FIRE ACCESS PLAN	180 PROMENADE CIR. STE 300 SACRAMENTO, CA 95834 PHONE (916) 929-3323 FAX (916) 929-1772	SCALE: AS SHOWN	
SHEET 13 OF 28	CITY OF ELK GROVE CALIFORNIA		DRAWN BY: S. ANDERSON	
			DESIGNED BY: M. SILVEIRA	
			CHECKED BY: G. STEDFIELD	

REV NO. | ENGR INIT. | BY | DATE | CITY ACCEPTANCE

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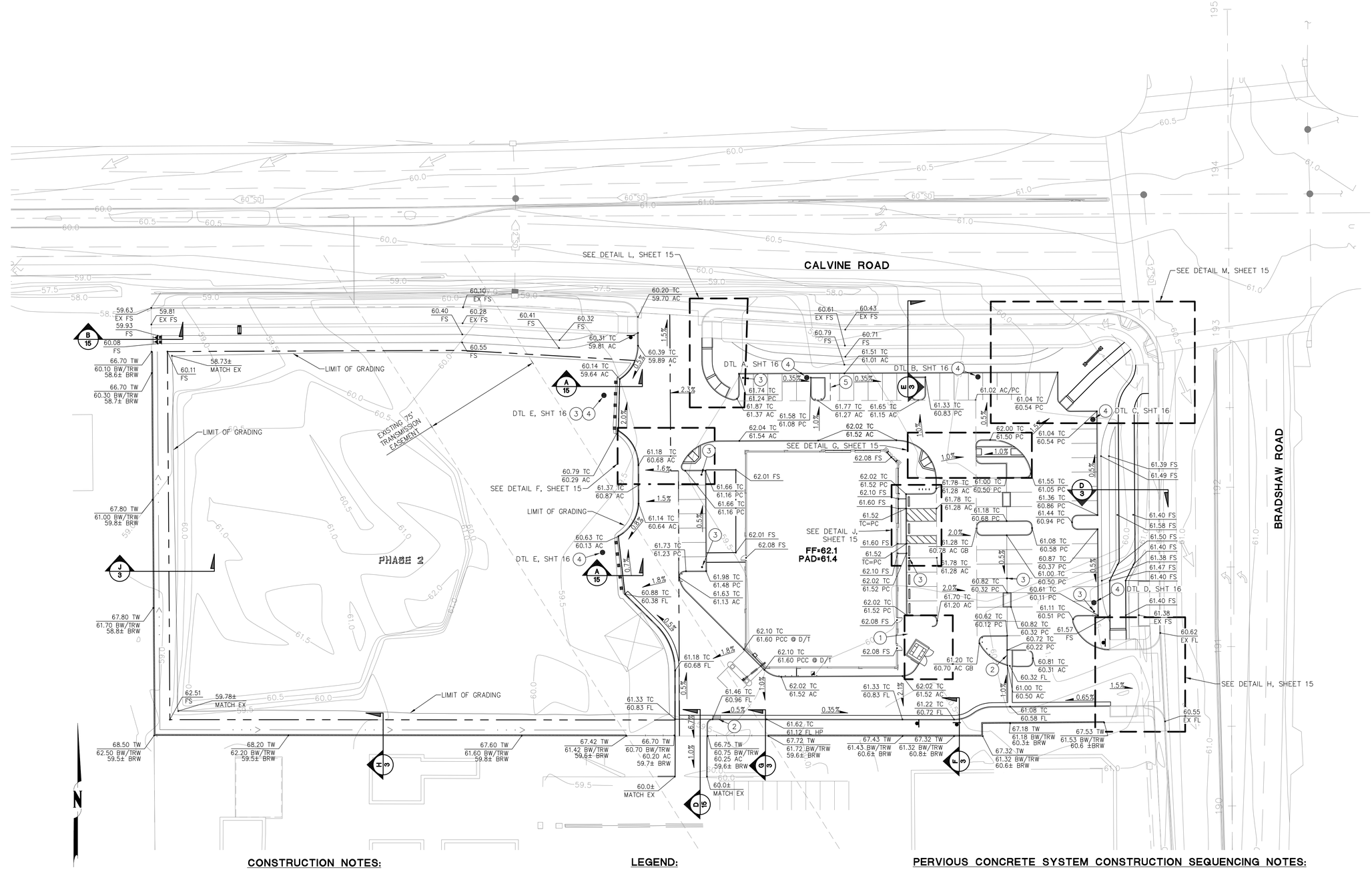
AS-BUILT



CONSTRUCTION NOTES:

1. SEE DETAIL K, SHEET 15 FOR DETAIL GRADING OF TRASH AND RECYCLING ENCLOSURE.
2. GUTTER FLOWLINE TRANSITION PER DETAIL E, SHEET 15.
3. MONITORING WELL PER DETAIL N, SHEET 15. RIM TO MATCH ADJACENT FINISHED SURFACE.
4. DARCY COLUMN. SEE DETAILS, SHEET 16.
5. SUBGRADE RIDGE. SEE DETAILS A AND B, SHEET 16.

LEGEND:

GRADE BREAK AT PERVIOUS CONCRETE

CURB TRANSITION AREA

NOTES:

1. BW/BRW ELEVATIONS INDICATE FINISHED SURFACE AT THE BOTTOM OF WALL AND NOT THE TOP OF FOOTING ELEVATION.
2. THE USE OF DARCY COLUMNS FOR THIS PROJECT REQUIRES SPECIAL CONSIDERATION OF SUBGRADE GRADING. SEE DETAILS ON SHEET 16.

PERVIOUS CONCRETE SYSTEM CONSTRUCTION SEQUENCING NOTES:

1. SUBMIT DARCY COLUMN AGGREGATE MATERIAL TEST SHEETS TO CITY OF ELK GROVE FOR REVIEW AND APPROVAL. CONTACT CLARENCE KORHONEN AT 916-478-3605.
2. EXCAVATE EXISTING SURFACE AS REQUIRED TO ACCOMMODATE PERVIOUS CONCRETE SYSTEM (6" PERVIOUS CONCRETE OVER 14" AGGREGATE STORAGE BASE – SEE DETAIL M, SHEET 3 FOR SPECIFICATIONS).
3. DRILL DARCY COLUMNS AND PLACE FILTER FABRIC AND AGGREGATE (SEE SHEET 16 FOR SPECIFICATIONS AND DETAILS). THE DARCY COLUMNS WILL BE CONSTRUCTED WITH A FILTER FABRIC AROUND THE PERIMETER OF THE BORING. EXTREME CAUTION WILL BE REQUIRED TO ENSURE THAT THE BACKFILLING OPERATIONS DO NOT CRUSH THE FABRIC OR CAUSE IT TO FOLD OVER AND DO NOT CAUSE RIPS, TEARS, OR VOIDS IN THE FILTER FABRIC.
4. PLACE FILTER FABRIC AT SUBGRADE AND INSTALL AGGREGATE STORAGE BASE LAYER.
5. PLACE PERVIOUS CONCRETE TO REQUIRED FINISHED SURFACE.

30 0 15 30 60

(SCALE IN FEET)
1 inch = 30 ft.

AS-BUILT

ENGR INIT.	BY	DATE
	CITY ACCEPTANCE	10/13/09

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

REV NO.

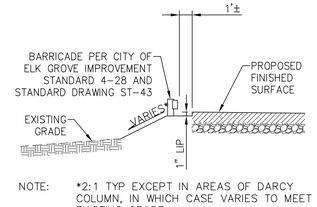
DATE: AS BUILT 5/10/2010
SCALE: AS SHOWN
DRAWN BY: S. ANDERSON
DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFELD

JACOBS™
180 PROMENADE CIR. STE 300
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
GRADING & DRAINAGE PLAN
CITY OF ELK GROVE CALIFORNIA

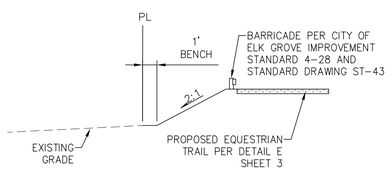
P:\Projects\333540\011\p2Drawings\333540_011_Civil\14 Grading & Drainage Plan.dwg 5-26-10 01:50:17 PM andersonsg

PROJECT NO: 333540
C5.0
SHEET 14 OF 28

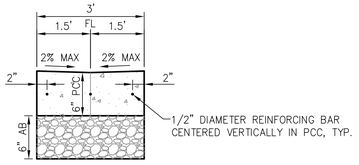


NOTE: *2:1 TYP EXCEPT IN AREAS OF DARCY COLUMN, IN WHICH CASE VARIES TO MEET EXISTING GRADE.

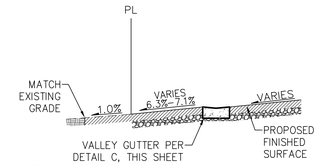
A END AC PAVING
NOT TO SCALE



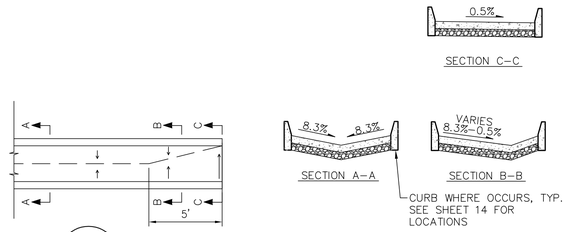
B END OF EQUESTRIAN TRAIL
NOT TO SCALE



C VALLEY GUTTER
NOT TO SCALE



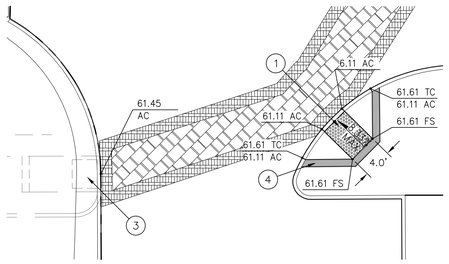
D EMERGENCY ACCESS
NOT TO SCALE



E GUTTER FLOWLINE TRANSITION
NOT TO SCALE

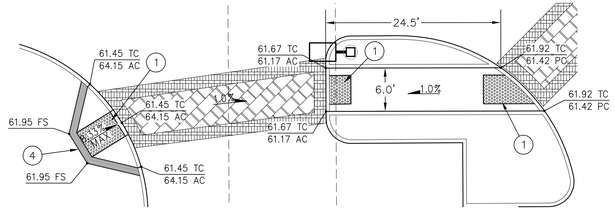
CONSTRUCTION NOTES FOR DETAILS F-J, L, M

1. DETECTABLE WARNING CENTERED AND SQUARED ON RAMP OR PAN PER DETAIL C, SHEET 8.
2. EXISTING DETECTABLE WARNING SURFACE.
3. FUTURE HANDICAP RAMP TO BE CONSTRUCTED BY OTHERS AS PART OF PHASE 2.
4. 12" GROOVED BORDER PER DETAIL D, SHEET 8.



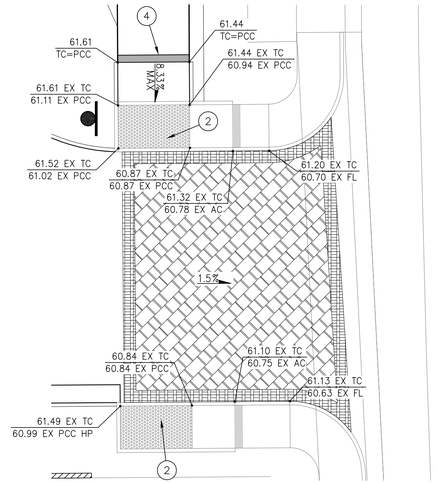
NOTE: REFER ALSO TO CITY OF ELK GROVE STANDARD DRAWING AR-4.2.

F HANDICAP RAMP
1"=10'



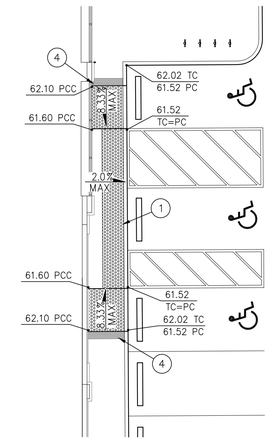
NOTE: REFER ALSO TO CITY OF ELK GROVE STANDARD DRAWING AR-4.2 AND AR-4.6.

G WESTERN ACCESSIBLE PATH
1"=10'

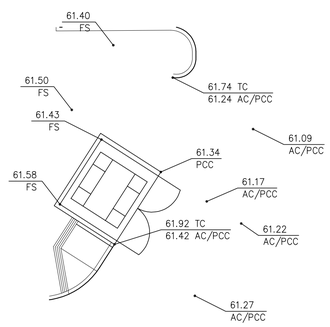


NOTE: REFER ALSO TO CITY OF ELK GROVE STANDARD DRAWING AR-4.7.

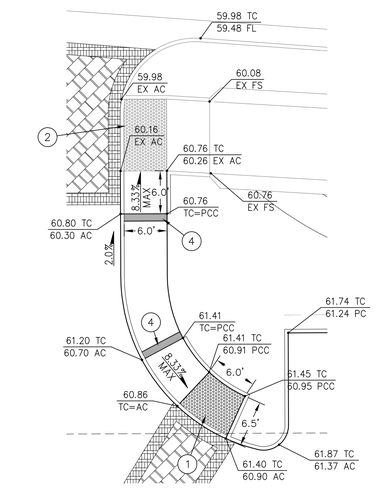
H SOUTHWEST HANDICAP RAMPS
1"=10'



J HANDICAP RAMP
1"=10'

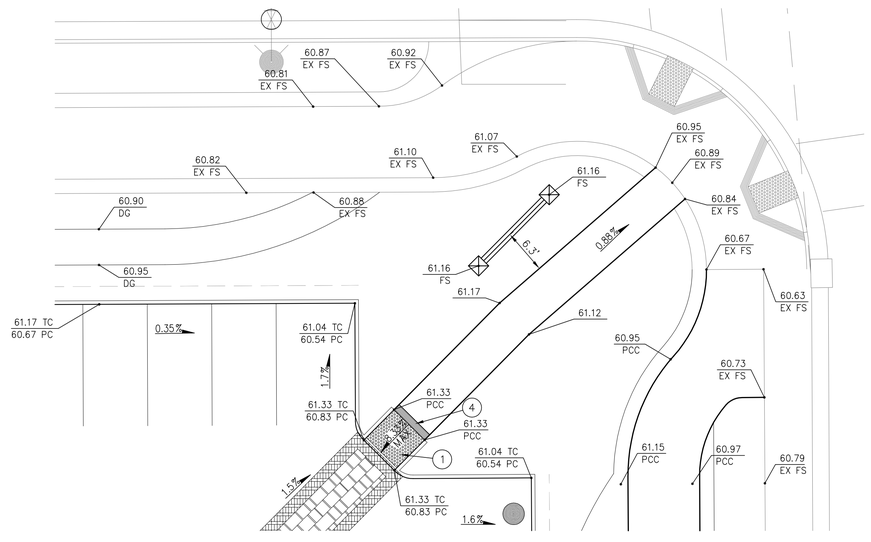


K TRASH/RECYCLING ENCLOSURES
1"=10'



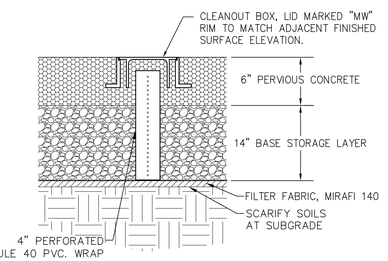
NOTE: REFER ALSO TO CITY OF ELK GROVE STANDARD DRAWING AR-4.2 AND AR-4.7.

L NORTHWEST ACCESSIBLE ROUTE
1"=10'



NOTE: REFER ALSO TO CITY OF ELK GROVE STANDARD DRAWING AR-4.6.

M NORTHEAST ACCESSIBLE ROUTE
1"=10'



NOTE: SEE DETAIL M, SHEET 3 FOR PERVIOUS PAVEMENT REQUIREMENTS.

N MONITORING WELL
NOT TO SCALE

AS-BUILT

REV NO.	ENGR INIT.	BY	DATE
		CITY ACCEPTANCE	

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

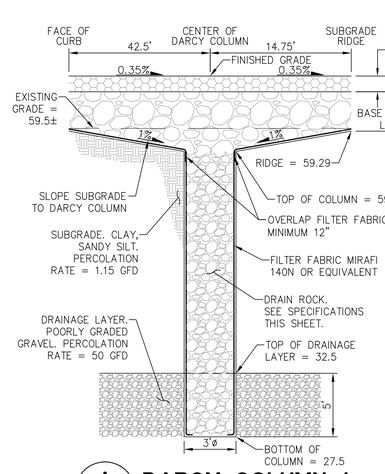
DATE: AS BUILT 5/10/2010
SCALE: AS SHOWN
DRAWN BY: S. ANDERSON
DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFELD

JACOBS™
180 PROMENADE CIR. STE 300
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

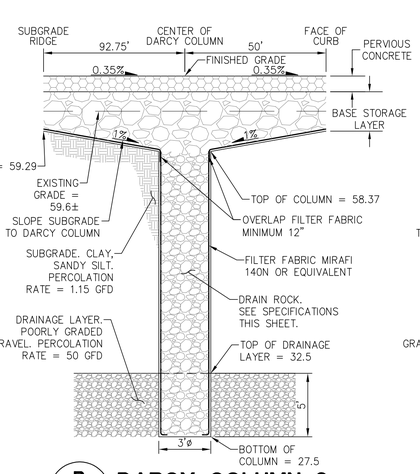
IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
GRADING & DRAINAGE DETAILS
CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
C5.1
SHEET 15 OF 28

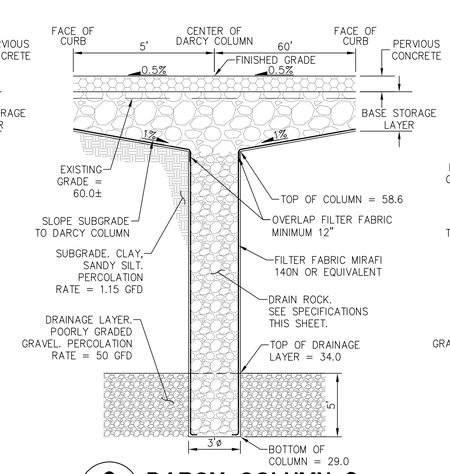
P:\Projects\333540\011\zDrawings\333540.011_Civil\15 Grading & Drainage Details.dwg 5-26-10 01:50:39 PM andersonsg



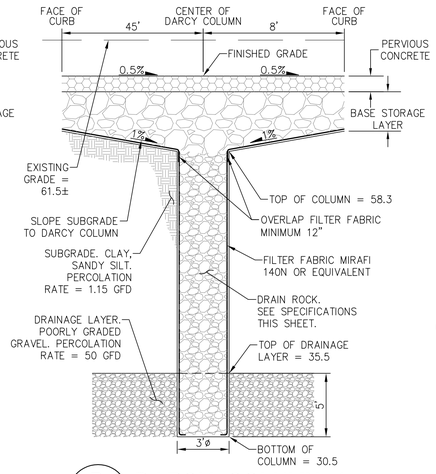
A **DARCY COLUMN 1**
NOT TO SCALE



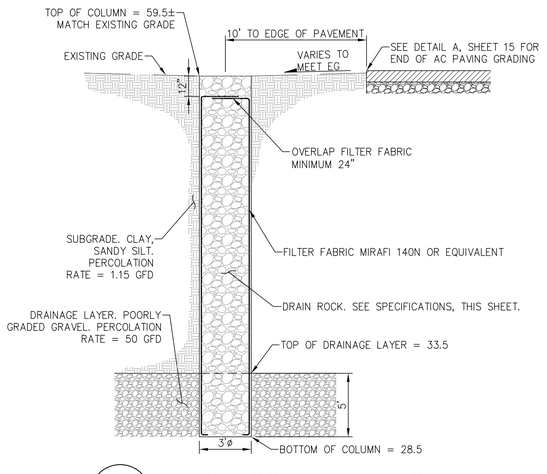
B **DARCY COLUMN 2**
NOT TO SCALE



C **DARCY COLUMN 3**
NOT TO SCALE



D **DARCY COLUMN 4**
NOT TO SCALE



E **DARCY COLUMN 5 & 6**
NOT TO SCALE

SPECIFICATIONS:

QUALIFICATIONS

A. THE PERVIOUS PORTLAND CEMENT CONCRETE (PPCC) INSTALLATION CONTRACTOR SHALL MEET, AT THE TIME OF BID OPENING, ONE OF THE FOLLOWING CRITERIA:
   1. THE CREW SHALL EMPLOY NO LESS THAN ONE (1) NRMCA CERTIFIED PERVIOUS CONCRETE CRAFTSMAN WHO MUST BE ONSITE, OVERSEEING EACH PLACEMENT CREW DURING ALL PERVIOUS CONCRETE PLACEMENT.
   2. THE CREW SHALL EMPLOY NO LESS THAN THREE (3) NRMCA CERTIFIED PERVIOUS CONCRETE INSTALLERS WHO MUST BE ONSITE, WORKING AS MEMBERS OF THE PLACEMENT CREW DURING ALL PERVIOUS CONCRETE PLACEMENT.

B. USE ADEQUATE NUMBERS OF SKILLED WORKERS WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK.

C. SUBMIT WITH THE ORIGINAL BID DOCUMENTS EVIDENCE OF A MINIMUM OF 100,000 SF SUCCESSFUL PERVIOUS CONCRETE PAVEMENT PROJECTS, THE CONTACT INFORMATION AND ADDRESSES FOR FIVE OF THOSE JOBS.

D. POUR PPCC TEST PANELS IN AN ISOLATED LOCATION DESIGNATED BY THE OWNER'S REPRESENTATIVE. IF THE TEST PANEL IS TO BE CONSTRUCTED IN AN AREA OF PERMANENT PLACEMENT, THE TEST PANEL MUST BE PROTECTED THROUGHOUT CONSTRUCTION AND MEET THE REQUIRED SPECIFICATIONS. REMOVE AND DISPOSE OF NON-CONFORMING TEST PANEL(S). MULTIPLE TEST PANELS WILL BE REQUIRED UNTIL THE TEST FOR EACH PAVEMENT SECTION MEETS THE PROJECT SPECIFICATIONS.

E. DETERMINE THE PLACING EQUIPMENT TO BE USED FOR THE "MOCK-UP" PLACEMENT FOR TEST PANEL(S) FOR THE PROJECT.

F. SUBMIT JOINTING PLAN LAYOUT.

MATERIALS

A. PERVIOUS PORTLAND CEMENT CONCRETE MIX DESIGN CRITERIA WILL MEET THE FOLLOWING REQUIREMENTS:
   1. CEMENT: USE PORTLAND CEMENT TYPE II CONFORMING TO ASTM C150 OR PORTLAND CEMENT TYPE IP OR ISM CONFORMING TO ASTM C595. THE CEMENTOUS CONTENT, INCLUDING POZZOLANS IF USED, SHALL BE NO LESS THAN 654 LBS PER CUBIC YARD, CALCULATED AS PORTLAND CEMENT.
   2. AGGREGATES: USE CLEAN, WASHED, CRUSHED GRAVEL, STONE MEETING NO. 8 COARSE AGGREGATE (3/8 TO NO. 16) PER ASTM C33.
   3. ADMIXTURES, IF USED, CONSIST OF:
      a. TYPE D WATER REDUCING / RETARDING – ASTM C494
      b. A HYDRATION STABILIZER THAT ALSO MEETS THE REQUIREMENTS OF ASTM C494 TYPE B RETARDING OR TYPE D WATER REDUCING / RETARDING ADMIXTURES.
   4. POTABLE WATER ADDED AS NECESSARY SUCH THAT THE CEMENT PASTE DISPLAYS A WET METALLIC SHEEN WITHOUT CAUSING THE PASTE TO FLOW FROM THE AGGREGATE. WATER CEMENT RATIOS CAN RANGE FROM 0.27 TO 0.35.
   5. VERIFY THE VOLUME OF AGGREGATE, CEMENT, WATER, AND ADMIXTURE PER CUBIC YARD IS EQUAL TO 27 CUBIC FEET, WHEN CALCULATED AS A FUNCTION OF THE UNIT WEIGHT DETERMINED IN ACCORDANCE WITH ASTM C29 JIGGING PROCEDURE. INCLUDED IN THE TOTAL AGGREGATE VOLUME FINE AGGREGATE, IF USED, SHOULD NOT EXCEED THREE CUBIC FEET. USE ADMIXTURES IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
   6. THE MIX SHALL BE DESIGNED AND INSTALLED TO HAVE A TOTAL VOID CONTENT GREATER THAN 15 PERCENT AND LESS THAN 30 PERCENT, IN PLACE, AS CONSTRUCTED. VOID CONTENT OF THE MIX SHALL BE DETERMINED FROM FOUR (4) INCH DIAMETER CORES FROM THE FINISHED TEST SECTION USING THE FOLLOWING METHOD:
      a. MEASURE LENGTH OF COURSE FOR COMPACTED THICKNESS.
      b. TRIM THE CORE TO 6" FROM THE TOP FINISH SURFACE FOR THE PAVEMENT SECTIONS.
      c. DETERMINE THE BULK SPECIFIC GRAVITY (Gb) OF THE CORE USING THE METHOD DESCRIBED IN ASTM D1188.
      d. DRY THE CORE AT A TEMPERATURE NOT TO EXCEED 150 F UNTIL A CONSTANT MASS (+/–0.1%) IS OBTAINED AND ALLOW TO COOL TO AMBIENT TEMPERATURE.
      e. WEIGH THE CORE AND RECORD THE WEIGHT TO THE NEAREST 0.1g.
      f. USE APPARATUS AS DESCRIBED IN ASTM D2041.
      g. PLACE CORE IN CALIBRATED PYCNOMETER AND FASTEN IT ON A MECHANICAL AGITATION DEVICE.
      h. TURN ON THE AGITATION DEVICE AND SLOWLY APPLY A VACUUM TO THE PYCNOMETER UNTIL THE VACUUM REACHES 3.7+/–0.3kPa (27.5 +/–2.5 MM Hg). THE VACUUM SHOULD BE REACHED IN LESS THAN 2 MINUTES.
      i. AFTER THE VACUUM IS ACHIEVED, MAINTAIN VACUUM AND AGITATION FOR A PERIOD OF 15 +/– 2 MINUTES.
      j. SLOWLY RELEASE THE VACUUM AND DETERMINE THE WEIGHT OF THE SAMPLE AND PYCOMETER AS DESCRIBED IN PARAGRAPH 9.5.1 OR PARAGRAPH 9.5.2 IN ASTM 2041, AS APPROPRIATE.
      k. IF MULTIPLE PROCEDURES ARE RUN FOR SEPARATE PIECES OF THE CORE, THE AVERAGE OF ALL THE RUNS WILL BE THE SPECIFIC GRAVITY (Gmm) OF THE CORE AS A WHOLE.
      l. THE PERCENTAGE OF AIR VOIDS WILL BE CALCULATED AS:

$$\text{VOIDS} = \frac{\text{Gmm} - \text{Gb}}{\text{Gmm}} \times 100\%$$

      WHERE:
      V= VOIDS IN THE SAMPLE (%)
      Gmm= SPECIFIC GRAVITY OF THE CORE MATERIAL LESS AIR VOIDS
      Gb = BULK SPECIFIC GRAVITY OF THE CORE AS DETERMINED BY ASTM D1188
      m. FIELD INFILTRATION RATE: MINIMUM OF 100 INCHES PER HOUR.

B. BASE STORAGE LAYER DESIGN CRITERIA WILL MEET THE FOLLOWING REQUIREMENTS:
   1. AGGREGATE BASE STORAGE LAYER SHALL BE 3/4" TO 1" WASHED, UNIFORMLY GRADED COARSE AGGREGATE OR APPROVED EQUIVALENT, WITH LESS THAN 0.8% PASSING THE NO. 200 SIEVE.

C. PPCC GEOTEXTILE: USE MARAFI 140N OR AN APPROVED EQUIVALENT.

D. DARCY COLUMN DRAIN ROCK SHALL BE CLEAN AND WASHED COARSE AGGREGATE WITH THE FOLLOWING GRADING:

SIEVE SIZE	% PASSING
1.5"	90–100
0.75"	50–85
#4	15–25
#30	10–15
#200	0–5

E. FORMS:
   1. MADE OF STEEL, WOOD, OR OTHER MATERIAL, PROVIDED THE FORMS AS CONSTRUCTED RESULT IN A PAVEMENT OF SPECIFIED THICKNESS, CROSS SECTION, GRADE AND ALIGNMENT AS SHOWN ON THE DRAWINGS.
   2. CLEAN AND FREE OF DIRT, RUST, DEBRIS AND HARDENED CONCRETE.
   3. SUFFICIENT STRENGTH AND STABILITY AND BE ADEQUATELY SUPPORTED TO PREVENT DEFLECTION OR MOVEMENT AND RESULT IN CONCRETE PAVEMENT CONFORMING TO THE REQUIREMENTS SPECIFIED.

INSTALLATION

A. VERIFY INSTALLATION CONDITIONS ARE SATISFACTORY TO RECEIVE WORK. DO NOT INSTALL UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED. BEGINNING WORK CONSTITUTES ACCEPTANCE OF CONDITIONS AS SATISFACTORY.

B. WEATHER IS TO BE CONSIDERED. DO NOT PLACE PPCC WHEN AMBIENT TEMPERATURE IS 40 DEGREES F OR LOWER, OR WHEN AMBIENT TEMPERATURE IS 80 DEGREES F OR HIGHER WITHOUT AN ACCEPTABLE PROCEDURE OR CHEMICAL ADDITIVES AS APPROVED BY THE PROJECT ENGINEER AND THE OWNER'S REPRESENTATIVE. DO NOT PLACE PPCC WHEN THERE IS A 20% OR GREATER CHANCE OF PRECIPITATION.

C. FOLLOW RECOMMENDATIONS OF ACI 306R WHEN CONCRETING DURING COLD WEATHER.

D. TEST PANEL: INSTALL A PERVIOUS PORTLAND CONCRETE CEMENT PAVEMENT TEST PANEL (TEST SECTION) FOR THE DESIGNED PAVEMENT SECTION.
   1. INSTALL A MINIMUM 225 SQUARE FOOT COMPLETE TEST SECTION OF PPCC BEFORE PROCEEDING WITH THE REST OF THIS WORK. THE WIDTH OF THE TEST SECTION SHALL HAVE A WIDTH NO SMALLER THAN THE GREATEST WIDTH TO BE USED DURING THE CONSTRUCTION AND INSTALLATION OF THE PPCC ONSITE.
   2. NOTIFY THE OWNER'S REPRESENTATIVE AT LEAST 10 WORKING DAYS BEFORE INSTALLING ANY TEST SECTIONS.
   3. COORDINATE THE LOCATION OF THE TEST SECTION(S) WITH THE OWNER'S REPRESENTATIVE.
   4. INSTALL THE TEST SECTION(S) TO THE THICKNESS SPECIFIED ON DRAWINGS AND DEMONSTRATE COMPLIANCE WITH PROJECT PERFORMANCE REQUIREMENTS.
   5. NOTIFY THE OWNER'S REPRESENTATIVE WHEN THE TEST SECTION IS READY FOR REVIEW.
   6. REMOVE, REPLACE, AND DISPOSE OF UNSATISFACTORY PORTIONS OF TEST SECTION(S) AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
   7. CONTRACTOR SHALL NOT PROCEED WITH NON-TEST SECTIONS OF THE WORK UNTIL ACHIEVING A COMPLETE TEST SECTION THAT FULLY COMPLIES WITH THESE SPECIFICATIONS AND AS FOLLOWS:
      a. TAKE THREE (3) CORES FROM EACH TEST SECTION AFTER SEVEN DAYS OF CURING.
      b. COMPACTED THICKNESS SHALL BE NO LESS THAN 1/4 OF SPECIFIED THICKNESS USING ASTM C42.
      c. VOID STRUCTURE: CONFORM TO PROJECT SPECIFICATIONS.
      d. AVERAGE WEIGHT OF THE CORES AS DETERMINED BY ASTM D1188 SHALL BE WITHIN EIGHT (8) POUNDS PER CUBIC FOOT OF THE AVERAGE OF THE THREE (3) CORES FROM EACH TEST SECTION.
      e. UNIFORM FINISH FOR APPEARANCE WITH LESS THAN 5% OF THE TEST SECTION SURFACE AREA SEALED.
      f. FIELD INFILTRATION RATE: PERFORM TEST ON TEST PANEL IN THE PRESENCE OF THE PROJECT ENGINEER AND/OR REPRESENTATIVE OF CITY OF ELK GROVE USING THE FOLLOWING PROCEDURE:
         I. PLACE 18-INCH DIAMETER (17.6-INCH INSIDE DIAMETER) PVC PIPE 2-FEET LONG, ON END, OVER THE PERVIOUS PAVEMENT SECTION. SEAL THE BOTTOM OF THE PVC PIPE WITH A TEMPORARY PLUMBING PUTTY TO PROHIBIT WATER FROM LEAKING OUT THE BOTTOM SIDES OF THE PVC PIPE ONTO ADJACENT PAVEMENT.
         II. POUR 4 GALLONS OF POTABLE WATER INTO THE PVC CYLINDER.
         III. START THE STOP WATCH WHEN ALL 4 GALLONS IS DISCHARGED INTO THE CYLINDER. THE DEPTH OF THE WATER IN THE CYLINDER ABOVE THE PAVEMENT AT THE START IS 3.8 INCHES WHEN USING A 17.6 INSIDE DIAMETER CYLINDER.
         IV. WHEN THE DEPTH OF THE WATER IN THE PVC PIPE REACHES 0, STOP THE WATCH.
         V. DETERMINE THE INFILTRATION RATE BY: (3.8 INCHES)/TIME.
         VI. TO ACHIEVE A MINIMUM OF 100 INCHES PER HOUR, WATER MUST DRAW DOWN TO ZERO (0) WITHIN 136 SECONDS.
   8. THE COMPLETED AND ACCEPTABLE TEST SECTION WILL BE USED TO VALIDATE THE PERVIOUS CONCRETE MIX DESIGN AND ESTABLISH THE JOB MIX FORMULA FOR EACH APPLICATION. SUBMIT TEST RESULTS TO PROJECT ENGINEER AND CITY OF ELK GROVE, CLARENCE KORHONEN, 916-478-3605.

E. JOB MIX FORMULA
   1. ONCE THE TEST SECTION IS APPROVED BY THE OWNER'S REPRESENTATIVE AND THE CITY OF ELK GROVE, THE MIX DESIGN OF THE SUCCESSFUL TEST SECTION SHALL BECOME THE JOB MIX FORMULA (JMF) AND SHALL NOT BE MODIFIED IN ANY WAY. THE JMF SHALL BE DETERMINED FROM INFORMATION SUBMITTED AND FROM RESULTS OF THE TEST PANEL. THE JMF SHALL INCLUDE THE FOLLOWING:
      a. BATCH WEIGHTS OF ALL CONSTITUENTS
      b. PORTLAND CEMENT TYPE AND BRAND
      c. POZZOLAN TYPE AND SOURCE
      d. MICROFIBER BRAND (IF USED)
      e. ADMIXTURES TYPE AND BRANDS (IF USED)
      f. AGGREGATE SOURCE AND GRADATION
      g. FRESH DENSITY OF THE PERVIOUS CONCRETE
      h. UNIT WEIGHT OF THE HARDENED PERVIOUS CONCRETE

F. PERVIOUS PAVEMENT SUBGRADE PREPARATION
   1. CONSTRUCT SUBGRADE TO THE SPECIFIED LINES AND GRADES WITH A UNIFORM APPEARANCE AND IN ACCORDANCE WITH THE SOILS ENGINEERS INSTRUCTION, CRITERIA AND SPECIFICATIONS.
   2. PROTECT ANY NATIVE SUBGRADE TO REMAIN. KEEP TRAFFIC OFF THE PREPARED SUBGRADE DURING CONSTRUCTION TO THE MAXIMUM EXTENT PRACTICAL TO REDUCE ADDITIONAL COMPACTION. FINAL 12" SUBGRADE TESTING TO BE DONE AT THE TIME FOR PLACEMENT OF THE GEOTEXTILE SUBGRADE INFILTRATION BARRIER.
   3. CONSTRUCT DARCY COLUMNS PER PLANS. PLACE ROCK IN MAXIMUM 5 FOOT LIFTS. COMPACT TO 80 PERCENT RELATIVE DENSITY. THE UPPER 12 INCHES SHALL BE COMPACTED TO 90 PERCENT RELATIVE DENSITY. TEST INFILTRATION OF AT LEAST ONE DARCY COLUMN USING THE SAME TEST PROCEDURE AS THE PERVIOUS PAVEMENT, FIELD INFILTRATION TEST, IN SECTION D.7.f, ABOVE.
   4. PLACE GEOTEXTILE FABRIC IN ACCORDANCE WITH THE MANUFACTURER'S STANDARDS AND RECOMMENDATIONS. OVERLAP THE ADJACENT STRIPS OF GEOTEXTILE FABRIC A MINIMUM OF 12 INCHES.
   5. SECURE GEOTEXTILE FABRIC AT LEAST TWO (2) FEET OUTSIDE OF BED LIMITS.
   6. PLACE AND LIGHTLY COMPACT AGGREGATE BASE STORAGE LAYER TO THE GRADES INDICATED ON THE DRAWINGS IN SIX (6) INCH MAXIMUM LIFTS, KEEPING EQUIPMENT MOVEMENT OVER THE AGGREGATE STORAGE LAYER TO A MINIMUM.
   7. FOLD THE GEOTEXTILE FABRIC BACK ALONG BED EDGES (INCLUDING AT THE EDGE INTERFACE WITH VAULTS, BOXES, STRUCTURES WITHIN THE PAVEMENT SECTION) TO PROTECT FROM SEDIMENT WASHOUT ALONG EDGES AFTER PLACING THE AGGREGATE STORAGE BASE. PLACE AN EDGE STRIP AT LEAST TWO (2) FEET WIDE ALONG THE BEDS TO PROTECT BEDS FROM ADJACENT BARE SOILS.
      a. KEEP EDGE STRIP IN PLACE UNTIL CONTIGUOUS BARE SOILS ARE STABILIZED AND VEGETATED.
      b. IMPLEMENT EROSION CONTROL AND FLOW DIVERSION MEASURES AT THE TOE OF SLOPES ADJACENT TO BEDS TO PREVENT SEDIMENT FROM WASHING INTO PPCC EXCAVATION.
      c. TRIM EXCESS FILTER FABRIC ALONG BED EDGES (AND AT INTERFACES WITH VAULTS AND STRUCTURES) TO GRAVEL EDGE AFTER THE SITE IS FULLY STABILIZED.

G. PERVIOUS PAVEMENT INSTALLATION
   1. FORMS: SET, ALIGN AND BRACE FORMS SO THAT PAVEMENT WILL MEET THE REQUIREMENTS SHOWN ON THE DRAWINGS.
      a. THE EDGE OF PREVIOUSLY PLACED CONCRETE MAY BE USED AS A FORM.
   2. MOISTEN THE STORAGE LAYER PRIOR TO PLACEMENT OF THE PPCC BY THOROUGHLY WETTING THE STORAGE LAYER WITH WATER FROM 2 TO 4 HOURS BEFORE THE CONCRETE IS TO BE PLACED AND MAINTAIN MOIST CONDITION UNTIL THE CONCRETE IS PLACED.
   3. MIX, POUR AND PLACE PERVIOUS PAVEMENT CONCRETE:
      a. TRANSPORT OR MIX PORTLAND CEMENT CONCRETE ONSITE AND USE WITHIN ONE HOUR OF THE INTRODUCTION OF MIX WATER, UNLESS OTHERWISE APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
         I. INCREASE THE ONE-HOUR REQUIREMENT TO NINETY (90) MINUTES WHEN UTILIZING HYDRATION STABILIZER, AS LONG AS THE TEMPERATURE OF THE CONCRETE DOES NOT EXCEED 90 DEGREES FAHRENHEIT.
         II. DO NOT RETEMPER CONCRETE AFTER WATER ADJUSTMENTS HAVE BEEN MADE TO CONCRETE DELIVERED TO THE JOBSITE.
         III. MOISTEN THE AGGREGATE STORAGE LAYER TO A WET CONDITION PRIOR TO PLACING CONCRETE.
         IV. DO NOT ALLOW TRUCKS USED TO TRANSPORT THE PERVIOUS PORTLAND CEMENT CONCRETE TO HAVE NO MORE THAN THREE (3) CONSECUTIVE LOADS OF MATERIAL WITHOUT HAULING CONVENTIONAL CONCRETE OR RINSING.
      b. INSPECT EACH MIXER TRUCK FOR LOAD APPEARANCE OF CONCRETE CONFORMITY. ADD WATER TO OBTAIN THE REQUIRED MIX CONSISTENCY (IF NECESSARY), AS DETERMINED BY THE QC REPRESENTATIVE OF THE CONCRETE SUPPLIER, PROVIDED THE DESIGN WATER TO CEMENT RATIO IS NOT EXCEEDED.
      c. PLACE CONCRETE:
         I. DEPOSIT CONCRETE AS CLOSE TO ITS FINAL POSITION AS PRACTICAL AND SUCH THAT FRESH CONCRETE ENTERS THE MASS OF PREVIOUSLY PLACED CONCRETE.
         II. DISCHARGE CONTINUOUSLY AND COMPLETE AS QUICKLY AS POSSIBLE.
         III. DO NOT PLACE CONCRETE ON FROZEN SUBGRADE OR AGGREGATE.
      d. CONCRETE SHALL BE PLACED IN A SINGLE LIFT.
      e. COMPACT WITH FULL WIDTH ROLLER OR OTHER MEANS AND FINISH THE PERVIOUS CONCRETE PAVEMENT TO THE REQUIRED CROSS SECTION DEPTH AND FINISH GRADE. ENSURE FINISH GRADE OF PAVEMENT DOES NOT DEVIATE MORE THAN +/– 1/4"-INCH IN 10-FEET FROM PROFILE GRADE. IN AREAS OF ADA, GRADES SHALL NOT EXCEED MAXIMUM SLOPE AND GRADES SPECIFIED ON PLANS.
   4. JOINTS:
      a. PLACE TRANSVERSE CONTRACTION JOINTS AT LOCATIONS PER JOINTING PLAN WITH DEPTH OF 1/4 OF THE THICKNESS OF PAVEMENT.
      b. THE LARGER HORIZONTAL DIMENSION OF A SLAB PANEL SHALL NOT EXCEED 125% OF THE SMALLER DIMENSION.
      c. INSTALL TRANSVERSE CONSTRUCTION JOINTS WHENEVER PLACING IS SUSPENDED A SUFFICIENT LENGTH OF TIME THAT CONCRETE MAY BEGIN TO HARDEN.
      d. DO NOT USE ISOLATION (EXPANSION) JOINTS EXCEPT WHEN PAVEMENT IS ABUTTING NONPOROUS SLABS OR OTHER ADJOINING STRUCTURES.
      e. IF JOINTS ARE NOT INSTALLED AT THE TIME OF PLACEMENT, SAWCUT JOINTS IN AFTER THE PAVEMENT HAS PROPERLY CURED.
         I. IMPLEMENT MEASURES TO COLLECT DUST AND SAWCUT SLURRY DURING SAWCUTTING OPERATIONS IN ORDER TO AVOID SEALING OF THE PORES.
      f. ALLOW SECTIONS OF PPCC TO CURE FOR SEVEN (7) CALENDAR DAYS MINIMUM BEFORE ALLOWING FOOT TRAFFIC ON COMPLETED SECTIONS.
         I. COVER THE PAVEMENT SURFACE WITH A MINIMUM SIX (6) MILLIMETER THICK POLYETHYLENE SHEET. PRIOR TO COVERING, SPRAY ON A "FOG" OR LIGHT MIST ABOVE THE SURFACE WHEN REQUIRED DUE TO AMBIENT CONDITIONS (HIGH TEMPERATURES, HIGH WIND, AND LOW HUMIDITY). OVERLAP EXPOSED EDGES AND SECURE COVER (WITHOUT USING DIRT OR STONE) TO PREVENT DISLOCATION.

QUALITY ASSURANCE

A. PRIOR TO PLACEMENT, SUBMIT FOR REVIEW AND APPROVAL BY ENGINEER AND CITY OF ELK GROVE, CLARENCE KORHONEN, 916-478-3605.
   1. CONCRETE MIX COMPONENTS
   2. THE SUPPLIER(S) FROM WHICH THE PERVIOUS CONCRETE PAVEMENT, STORAGE BASE LAYER, AND DARCY COLUMN MATERIALS ARE TO BE OBTAINED, ALONG WITH CERTIFICATES, SIGNED BY THE MATERIALS PRODUCER, STATING THAT THE MATERIALS MEET OR EXCEED THE SPECIFIED REQUIREMENTS.
      a. THE MIXING PLANT SHALL SUBMIT A CURRENT MIX DESIGN WITH AGGREGATE, CEMENT, WATER, AND ADMIXTURE PROPORTIONS FOR APPROVAL. IN ADDITION THE MIXING PLANT SHALL SUBMIT ANY AVAILABLE PAST STRENGTH TEST DATA.
   3. METHOD OF PLACEMENT FOR DARCY COLUMN FILTER FABRIC.
   4. REPAIR, REMOVAL AND REPLACEMENT PROCEDURES TO CORRECT ANY WORK THAT DOES NOT MEET CRITERIA FOR PERVIOUS CONCRETE PAVEMENT.
   5. NRMCA CERTIFICATION OF THE INSTALLING CONTRACTORS QUALIFICATIONS.
   6. TEST RESULTS OF ALL THE TEST PANELS FOR REVIEW OF WORKMANSHIP AND DETERMINATION OF JOB MIX FORMULA (JMF).
   7. TEST RESULTS FOR PERVIOUS PAVEMENT INSTALLATIONS.

B. PERMANENT INSTALLED SECTIONS WILL BE REVIEWED FOR THE FOLLOWING:
   1. GRADE, LINE AND SLOPE
   2. FIELD INFILTRATION RATE
      a. TEST NOT TO BE TAKEN SOONER THAN SEVEN (7) CALENDAR DAYS FROM PLACEMENT.
   3. THICKNESS
   4. UNIT WEIGHT, OR VOID STRUCTURE.
   5. APPEARANCE

REV NO.	ENGR INIT.	DATE
	BY	CITY ACCEPTANCE

AS-BUILT

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DATE: AS BUILT 5/10/2010
SCALE: AS SHOWN
DRAWN BY: S. ANDERSON
DESIGNED BY: M. SILVEIRA
CHECKED BY: G. STEDFELD

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IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
GRADING & DRAINAGE DETAILS
CITY OF ELK GROVE CALIFORNIA
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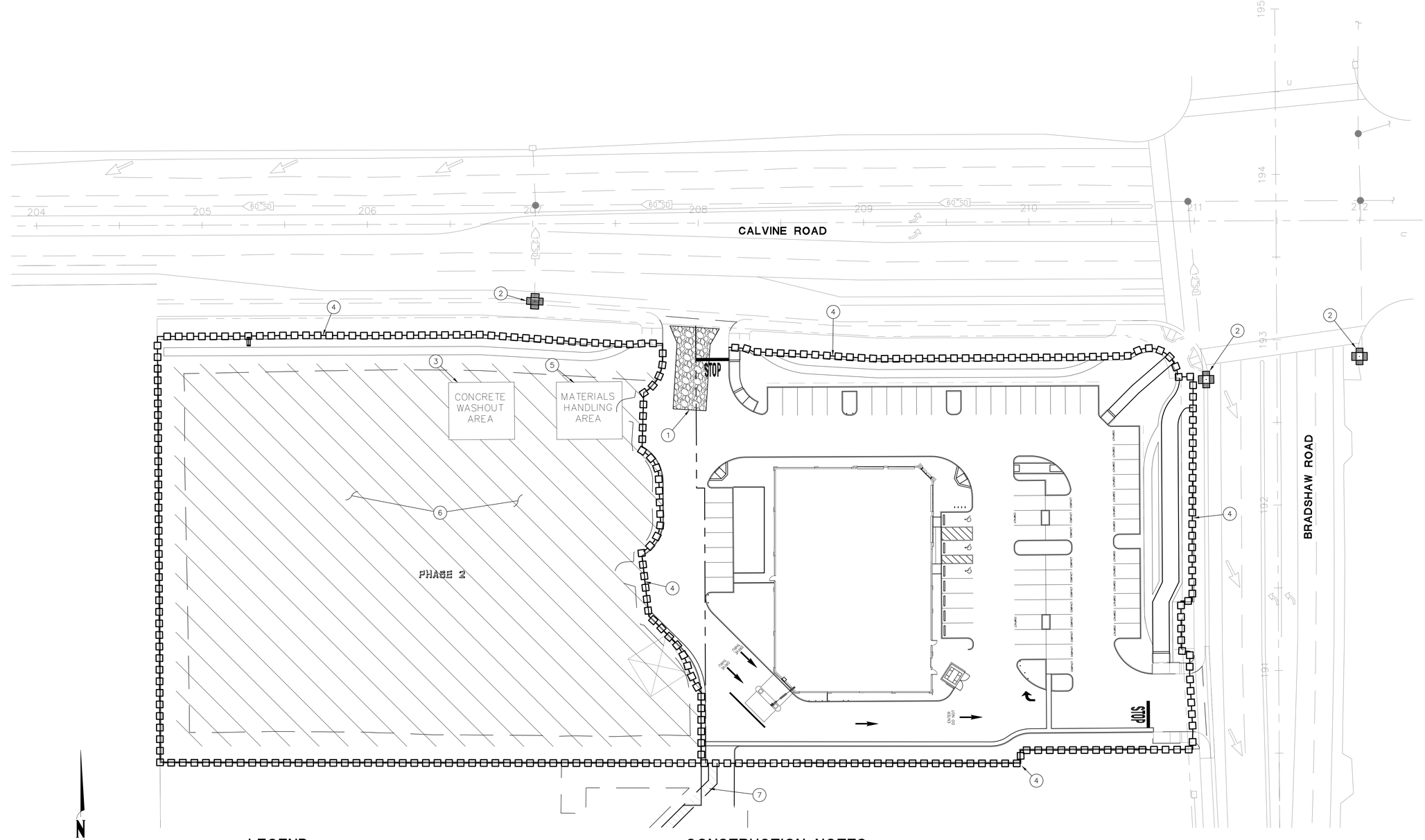
PROJECT NO: 333540
C5.2
SHEET 16 OF 28



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30 0 15 30 60

(SCALE IN FEET)
1 inch = 30 ft.

LEGEND

- FIBER ROLL PER CITY OF ELK GROVE STANDARD DRAWING SQ-4
- INLET CONTROL PER CITY OF ELK GROVE STANDARD DRAWING SQ-7 WITH INLET FILTER BAG PER CITY OF ELK GROVE STANDARD DRAWING SQ-8
- STABILIZED CONSTRUCTION ENTRANCE PER CITY OF ELK GROVE STANDARD DRAWING SQ-1

CONSTRUCTION NOTES

1. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE PER CITY OF ELK GROVE STANDARD DRAWING SQ-1.
2. INSTALL STORM DRAIN INLET FILTER BAG PER CITY OF ELK GROVE STANDARD DRAWING SQ-8 AND INLET SEDIMENT CONTROL PER CITY OF ELK GROVE STANDARD DRAWING SQ-7.
3. INSTALL CONCRETE WASHOUT PER CITY OF ELK GROVE STANDARD DRAWING SQ-6.
4. INSTALL FIBER ROLL PER CITY OF ELK GROVE STANDARD DRAWING SQ-4.
5. INSTALL MATERIALS HANDLING AREA AS APPROVED BY CITY OF ELK GROVE PUBLIC WORKS DEPARTMENT.
6. HYDROSEED PHASE 2 AREA WITH NATIVE SEED MIX. SEE DEATIL F, SHEET 18 FOR SEED MIX.
7. PROVIDE EROSION AND SEDIMENT PROTECTION PER CITY OF ELK GROVE REQUIREMENTS AS NEEDED DURING CONSTRUCTION OF WATER LINE.

AS-BUILT

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IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
EROSION CONTROL PLAN
CALIFORNIA
CITY OF ELK GROVE

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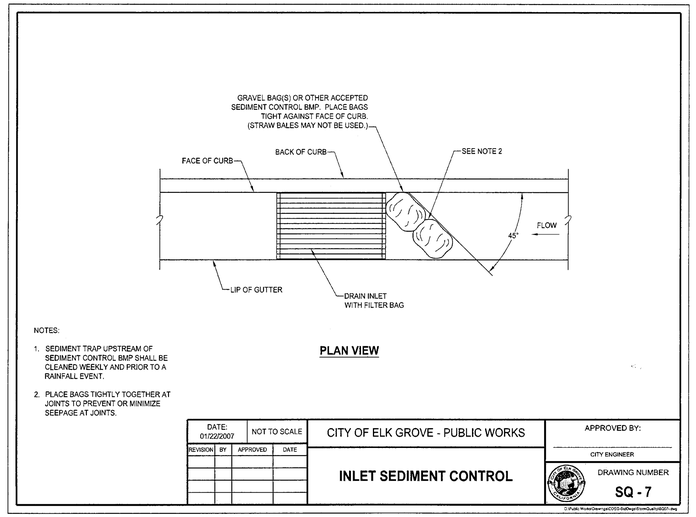
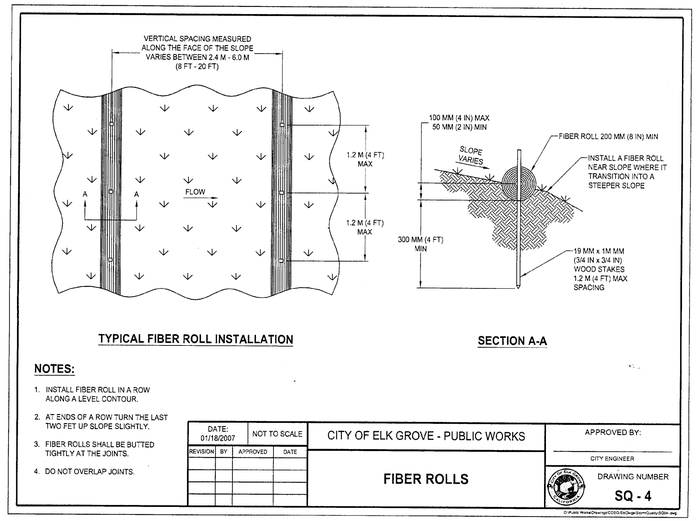
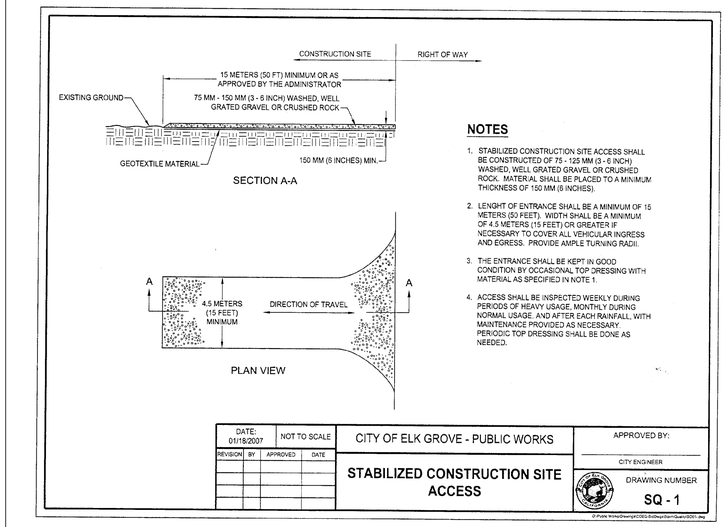
C6.0
SHEET 17 OF 28



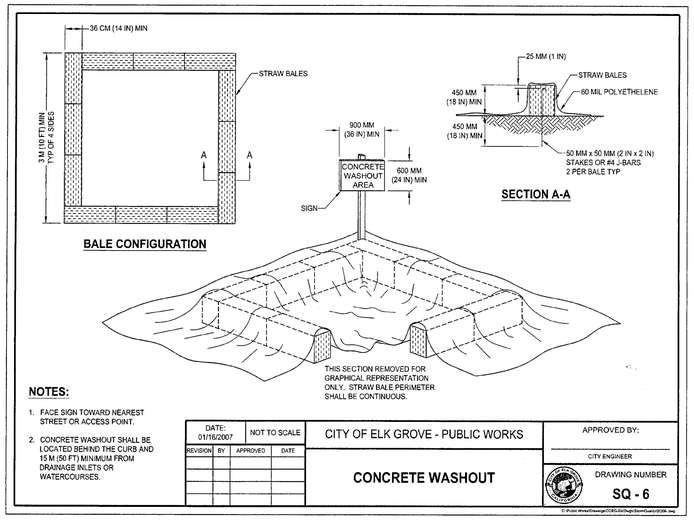
A INLET SEDIMENT CONTROL
NOT TO SCALE



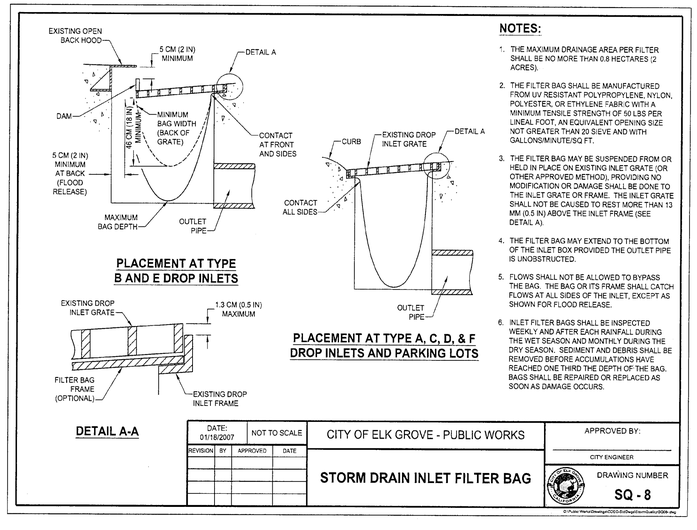
B FIBER ROLL
NOT TO SCALE



C STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



D CONCRETE WASHOUT
NOT TO SCALE



E STORM DRAIN INLET FILTER BAG
NOT TO SCALE

BOTANICAL NAME/COMMON NAME	SEED RATE	% PURITY/ % GERMINATION
Agrostis pallens (diegosensis) / Siskiyou Thingrass	1.00	70.00 / 70.00
Festuca rubra molate / Molate Fescue	4.00	95.00 / 80.00
Nassella (Stipa) lepida / Foothill Needlegrass	5.00	90.00 / 60.00
Bouteloua gracilis / Blue Grama	5.00	60.00 / 60.00
Poa secunda (scabrella) / Pine Bluegrass	1.00	90.00 / 80.00
Vulpia octoflora / Six weeks fescue	2.00	95.00 / 50.00
Aristida adscensionis / Six-Weeks Three Awn	2.00	60.00 / 40.00
Eschscholzia californica / California Poppy	2.00	98.00 / 75.00
Lupinus bicolor / Pigmy-Leaved Lupine	3.00	98.00 / 80.00
Lasthenia californica (chrysostoma) / Dwarf Goldfields	0.50	50.00 / 60.00
Phacelia campanularia / California Blue Bells	0.50	98.00 / 75.00
Baileya multiradiata / Desert Marigold	2.00	80.00 / 60.00

Seed Rate: 28.00 Lbs / Acre

Hydroseeding slurry:
2000 Lbs / Acre ECO Fiber mulch, 150 Lbs / Acre Environ-mend Binder
60 Lbs / Acre Endonet Mycorrhizal inoculum, Fertilizer as needed by soil test

*** All seeds available from Stover Seed Company 213-626-9668 ***

F EROSION CONTROL HYDROSEED MIX
NOT TO SCALE

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IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
EROSION CONTROL DETAILS
CITY OF ELK GROVE CALIFORNIA

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PROJECT NO: 333540
C6.1
SHEET 18 OF 28

EROSION AND SEDIMENT CONTROL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE CITY OF ELK GROVE IMPROVEMENT STANDARDS, CURRENT EDITION (OCTOBER 2007), AND THE CITY OF ELK GROVE EROSION AND SEDIMENT CONTROL GUIDELINES, DATED OCTOBER 2007.

2. ALL GRADING IS TO BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF ELK GROVE LAND GRADING AND EROSION CONTROL ORDINANCE. THE MEASURES SHOWN OR STATED ON THESE PLANS AND THE FOLLOWING CONDITIONS ARE REQUIRED IF GRADING AND DRAINAGE IMPROVEMENTS ARE INCOMPLETE BETWEEN OCTOBER 1 AND APRIL 15 OR WHEN RAIN IS EXPECTED.

   A. EROSION PROTECTION ON SLOPES 10:1 OR STEEPER AND SWALES WITH SLOPES 2% OF GREATER.

   B. GRADE GUTTER SAG POINTS TO DRAIN.

   C. PREVENT SEDIMENTATION IN EXISTING STORM DRAIN SYSTEM AND CLEAN DOWNSTREAM PIPES AS PER SECTION 10-4 OF THE STANDARD CONSTRUCTION SPECIFICATIONS.

3. ALL AREAS DISTURBED DURING CONSTRUCTION, BY GRADING, TRENCHING, OR OTHER ACTIVITIES, SHALL BE PROTECTED FROM EROSION DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). HYDROSEED, IF UTILIZED, MUST BE PLACED BY SEPTEMBER 15. HYDROSEED PLACED DURING THE WET SEASON SHALL USE A SECONDARY EROSION PROTECTION METHOD.

4. THE FOLLOWING AREAS ARE TO RECEIVE HYDROSEEDING OR OTHER EROSION CONTROL:

   A. FOR RESIDENTIAL PROJECTS; LOT FRONT YARDS BEHIND THE SIDEWALK – THE FIRST 18 FEET OR TOP OF SLOPE (WHICHEVER IS GREATER).

   B. FOR RESIDENTIAL PROJECTS; SIDEYARDS BEHIND THE SIDEWALK – THE FIRST 7.5 FEET OR TOP OF SLOPE (WHICHEVER IS GREATER).

   C. FOR COMMERCIAL PROJECTS; ALL NON ACTIVE DISTURBED SOIL AREAS MUST BE STABILIZED.

   D. SLOPES – ALL SLOPES GREATER THAN 10:1.

5. EROSION AND SEDIMENT CONTROL MEASURES FOR THIS PROJECT SHALL BE IN COMPLIANCE AT ALL TIMES WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THE PROJECT IN ACCORDANCE WITH THE STATE OF CALIFORNIA GENERAL CONSTRUCTION PERMIT THE SWPPP SHALL BE KEPT UP-TO-DATE TO REFLECT CHANGING SITE CONDITIONS AND THE SWPPP IS TO BE AVAILABLE ON THE PROJECT SITE AND ACCESSIBLE AT ALL TIMES FOR INSPECTION AND REVIEW BY STATE AND LOCAL INSPECTORS.

6. CONTRACTOR TO FURNISH STORM WATER POLLUTION PREVENTION PLAN AND NOTICE OF INTENT DOCUMENTS. THESE DOCUMENTS MUST BE APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD PRIOR TO CONSTRUCTION.

7. EROSION CONTROL BEST MANAGEMENT PRACTICES (BMPs) SHALL BE INSTALLED AND MAINTAINED DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). SEDIMENT CONTROL BMPs SHALL BE INSTALLED AND MAINTAINED ALL YEAR ROUND.

8. IN THE RAINY/WET SEASON, ALL NON ACTIVE DISTURBED SOIL AREAS MUST BE STABILIZED WITH EROSION CONTROLS WITHIN 14 CALENDAR DAYS OR PRIOR TO FORECASTED RAIN EVENT (WHICHEVER COMES FIRST).

9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED. CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FILED CONDITIONS ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF A REPRESENTATIVE OF THE CITY OF ELK GROVE.

10. THIS PLAN MAY NOT COVER ALL THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO ANTICIPATED FIELD CONDITIONS. VARIATIONS MAY BE MADE TO THE PLAN IN THE FIELD SUBJECT TO THE APPROVAL OF OR AT THE DIRECTION OF A REPRESENTATIVE OF THE CITY OF ELK GROVE.

11. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED BEFORE AND AFTER ALL STORMS TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.

12. CONTRACTOR SHALL MAINTAIN A LOG AT THE SITE OF ALL INSPECTIONS OR MAINTENANCE OF BMPS, AS WELL AS ANY CORRECTIVE CHANGES TO THE BMPS OR EROSION AND SEDIMENT CONTROL PLAN.

13. IN AREAS WHERE SOIL IS EXPOSED, PROMPT REPLANTING WITH NATIVE COMPATIBLE, DROUGHT-RESISTANT VEGETATION SHALL BE PERFORMED. NO AREAS WILL BE LEFT EXPOSED OVER THE WINTER SEASON.

14. ALL STABILIZED CONSTRUCTION ACCESS LOCATIONS SHALL BE CONSTRUCTED PER STANDARD DRAWING SQ-1. WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES PAVED AREAS, THE STABILIZED ACCESS SHALL BE MAINTAINED ON A YEAR ROUND BASIS UNTIL THE COMPLETION OF CONSTRUCTION.

15. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE SWEPT AT THE END TO EACH WORKING DAY OR AS NECESSARY.

16. CONTRACTOR SHALL PLACE ROCK BAG SEDIMENT BARRIERS AND INLET FILTERS AROUND ALL DRAINAGE STRUCTURE OPENINGS IMMEDIATELY AFTER THE STRUCTURE OPENINGS IS CONSTRUCTED. THESE ROCK BAG SEDIMENT BARRIERS AND INLET FILTERS SHALL BE MAINTAINED AND REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.

17. ALL DRAINAGE INLETS IMMEDIATELY DOWNSTREAM OF THE WORK AREAS AND WITHIN THE WORK AREAS SHALL BE PROTECTED WITH SEDIMENT CONTROL AND INLET FILTER BAGS, YEAR ROUND. INLET FILTER BAGS SHALL BE REMOVED FROM THE DRAINAGE INLETS UPON ACCEPTANCE OF THE PUBLIC IMPROVEMENTS BY THE CITY.

18. SENSITIVE AREAS AND AREAS WHERE EXISTING VEGETATION IS BEING PRESERVED SHALL BE PROTECTED WITH CONSTRUCTION FENCING. SEDIMENT CONTROL BMPs SHALL BE INSTALLED WHERE ACTIVE CONSTRUCTION AREAS DRAIN INTO SENSITIVE OR PRESERVED VEGETATION AREAS.

19. SEDIMENT CONTROL BMPs SHALL BE PLACED ALONG THE PROJECT PERIMETER WHERE DRAINAGE LEAVES THE PROJECT. SEDIMENT CONTROL BMPs SHALL BE MAINTAINED YEAR ROUND UNTIL THE CONSTRUCTION IS COMPLETE OR THE DRAINAGE PATTERN HAS BEEN CHANGED AND NO LONGER LEAVES THE SITE.

20. CONTRACTOR SHALL IMPLEMENT HOUSEKEEPING PRACTICES AS FOLLOWS:

   A. SOLID WASTE MANAGEMENT:
   PROVIDE DESIGNATED WASTE COLLECTION AREAS AND CONTAINERS. ARRANGE FOR REGULAR REMOVAL AND DISPOSAL. CLEAR SITE OF TRASH INCLUDING ORGANIC DEBRIS, PACKAGING MATERIALS, SCRAP OR SURPLUS BUILDING MATERIALS AND DOMESTIC WASTE DAILY.

   B. MATERIAL DELIVERY AND STORAGE:
   PROVIDE A DESIGNATED MATERIAL STORAGE AREA WITH SECONDARY CONTAINMENT SUCH AS BERMING. STORE MATERIAL ON PALLETS AND PROVIDE COVERING FOR SOLUBLE MATERIALS. RELOCATE STORAGE AREA INTO BUILDING SHELL WHEN POSSIBLE. INSPECT AREA WEEKLY.

   C. CONCRETE WASTE:
   PROVIDE A DESIGNATED AREA FOR A TEMPORARY PIT TO BE USED FOR CONCRETE TRUCK WASH-OUT. DISPOSE OF HARDENED CONCRETE OFFSITE. AT NO TIME SHALL A CONCRETE TRUCK DUMP ITS WASTE AND CLEAN ITS TRUCK INTO THE CITY STORM DRAINS VIA CURB AND GUTTER. INSPECT DAILY TO CONTROL RUNOFF, AND WEEKLY FOR REMOVAL OF HARDENED CONCRETE.

   D. PAINT AND PAINTING SUPPLIES:
   PROVIDE INSTRUCTION TO EMPLOYEES AND SUBCONTRACTORS REGRADING REDUCTION OF POLLUTANTS INCLUDING MATERIAL STORAGE, USE, AND CLEAN UP. INSPECT SITE WEEKLY FOR EVIDENCE OF IMPROPER DISPOSAL.

   E. VEHICLE FUELING, MAINTENANCE AND CLEANING:
   PROVIDE A DESIGNATED FUELING AREA WITH SECONDARY CONTAINMENT SUCH AS BERMING. DO NOT ALLOW MOBILE FUELING OF EQUIPMENT. PROVIDE EQUIPMENT WITH DRIP PANS. RESTRICT ONSITE MAINTENANCE AND CLEANING OF EQUIPMENT TO A MINIMUM. INSPECT AREA WEEKLY.

   F. HAZARDOUS WASTE MANAGEMENT:
   PREVENT THE DISCHARGE OF POLLUTANTS FROM HAZARDOUS WASTES TO THE DRAINAGE SYSTEM THROUGH PROPER MATERIAL USE, WASTE DISPOSAL AND TRAINING OF EMPLOYEES. HAZARDOUS WASTE PRODUCTS COMMONLY FOUND ONSITE INCLUDE BUT ARE NOT LIMITED TO: PAINTS & SOLVENTS, PETROLEUM PRODUCTS, FERTILIZERS, HERBICIDES & PESTICIDES, SOIL STABILIZATION PRODUCTS, ASPHALT PRODUCTS AND CONCRETE CURING PRODUCTS. SPECIAL CARE MUST BE TAKEN IN THE STORING AND DISPOSAL OF HAZARDOUS WASTE. THESE MATERIALS SHOULD BE CLEARLY LABELED AND STORED IN PROTECTIVE CONTAINERS. CHEMICALS THAT MAY REACT WITH OTHER MATERIALS SHOULD BE STORED IN SEPARATE CONTAINERS. HAZARDOUS WASTE MUST NOT BE DISPOSED OF IN DUMPSTERS LABELED FOR CONSTRUCTION DEBRIS. ALL HAZARDOUS WASTE MUST BE COLLECTED, REMOVED FORM THE SITE AND DISPOSED OF ONLY AT AUTHORIZED DISPOSAL AREAS.

   G. SPILL PREVENTION AND CONTROL:
   PREVENT THE DISCHARGE OF POLLUTANTS TO THE DRAINAGE SYSTEM FROM LEAKS AND SPILLS BY REDUCING THE CHANCE FOR SPILLS, STOPPING THE SOURCE OF THE SPILLS, CONTAINING AND CLEANING UP SPILLS, PROPERLY DISPOSING OF SPILL MATERIALS AND TRAINING EMPLOYEES. AN AMPLE SUPPLY OF SPILL CONTROL AND CLEANUP MATERIALS MUST BE AVAILABLE ONSITE NEAR STORAGE AREAS. SPILLS AND LEAKS SHOULD BE ATTENDED TO IMMEDIATELY. SPILLS OR LEAKS ON PAVEMENT SHOULD BE CLEANED UP USING LITTLE WATER AS POSSIBLE. NEVER HOSE DOWN DRY MATERIAL SPILLS. SWEEP UP OR EXCAVATE THE MATERIAL AND DISPOSE OF PROPERLY. IF A SPILL OR LEAK WILL ENTER OR HAS ENTERED THE DRAINAGE SYSTEM, REPORT TO THE COUNTY OF SACRAMENTO.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM NOTES:

1. OWNER / CONTRACTOR IS ADVISED THAT THE STATE OF CALIFORNIA HAS ADOPTED NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) No. CAS 082597 REQUIREMENTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CLEAN WATER ACT. THIS PROJECT IS SUBJECT TO ALL OF THE REQUIREMENTS CONTAINED IN THOSE ACTS, AS WELL AS THE REQUIREMENTS OF THE GENERAL CONSTRUCTION PERMIT WATER QUALITY ORDER No. 99-08-DWQ. THE CONTRACTOR SHALL ABIDE BY ALL OF THE LAWS, ORDINANCES AND REGULATIONS ASSOCIATED WITH THE NPDES, THE CLEAN WATER ACT AND THE GENERAL CONSTRUCTION PERMIT.
2. AS PART OF THE NPDES REQUIREMENTS, A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE DEVELOPED FOR THIS PROJECT; AN OUTLINE OF THIS PLAN HAS BEEN DEVELOPED BY THE OWNER. THE CONTRACTOR SHALL UPDATE IT AS NECESSARY THROUGHOUT CONSTRUCTION OF THE PROJECT.
3. THE SWPPP MUST BE MAINTAINED THROUGH OUT THE COURSE OF CONSTRUCTION AND BE ACCESSIBLE AT ALL TIMES, AT THE CONSTRUCTION SITE. THE CONTRACTOR IS ADVISED THAT HE SHALL CONFORM TO THE REQUIREMENTS AND SHALL IMPLEMENT ALL OF THE MEASURES REQUIRED BY THE SWPPP, INCLUDING MAINTENANCE AND DILIGENT RECORD KEEPING AND LOGS AS REQUIRED BY THE SWPPP.
4. THE OWNER / CONTRACTOR MUST KEEP COPIES OF THESE RECORDS AND LOGS WITH THE SWPPP AT THE CONSTRUCTION SITE FOR VIEWING BY THE STATE OF CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD AND THE CITY OF ELK GROVE DURING THE COURSE OF CONSTRUCTION.
5. EROSION CONTROL AND SEDIMENT CONTROL MUST BE IMPLEMENTED FOR THE DURATION OF THE CONSTRUCTION PROJECT, ON A CONTINUOUS BASIS, UPDATED, AS SITE CONDITIONS WARRANT.

BEST MANAGEMENT PRACTICES TABLE

BEST MANAGEMENT PRACTICE	LOCATION	IMPLEMENTATION SCHEDULE	MAINTENANCE SCHEDULE
PRESERVING EXISTING VEGETATION	AROUND PERIMETER OF PROJECT SITE AND THE WETLAND AREA.	CONTINUOUS UNTIL CONSTRUCTION IS COMPLETED.	EDUCATE EMPLOYEES AND SUBCONTRACTORS REGARDING IMPORTANCE OF MAINTAINING EXISTING VEGETATION TO PREVENT EROSION AND FILTER OUT SEDIMENT IN RUNOFF FROM DISTURBED AREAS ON THE CONSTRUCTION SITE. INSPECT SITE PERIMETER MONTHLY TO VERIFY THAT OUTSIDE VEGETATION IS NOT DISTURBED.
PROTECT GRADED AREAS AND SLOPES FROM WASHOUT AND EROSION.	THROUGHOUT PROJECT SITE.	DURING WET SEASON.	INSPECT GRADED AREAS AND SLOPES ON AT LEAST A MONTHLY BASIS TO CHECK FOR EROSION. REGRADE TRIBUTARY AREAS OR INSTALL STRAW BALE OR SAND BAG DIKES AS NECESSARY TO PREVENT EROSION.
GRAVEL FILTER	ALONG FLOW LINES OF UNPAVED ROADWAYS WITHIN SITE.	IN PLACE DURING WET SEASON UNTIL ON-SITE ROADWAYS ARE PAVED.	INSPECT AFTER EACH STORM. REMOVE SEDIMENT DEPOSITED BEHIND BERM OR BARRIER TO MAINTAIN EFFECTIVENESS.
INLET FILTERS	INLETS TO THE STORM DRAINAGE SYSTEM.	CONTINUOUS UNTIL LANDSCAPING IS IN PLACE.	INSPECT AFTER EACH STORM. REMOVE SEDIMENT DEPOSITED BEHIND BAGS & WATTLES WHENEVER NECESSARY TO MAINTAIN EFFECTIVENESS.
STRAW WATTLES	AS SHOWN ON PLANS.	DURING WET SEASON.	
HYDROSEEDING	2:1 SLOPES AND AS INDICATED.	IN PLACE DURING WET SEASON.	INSPECT SLOPES ON AT LEAST A MONTHLY BASIS TO CHECK FOR EROSION. IF EROSION IS NOTED, SPREAD STRAW MULCH OVER AFFECTED AREAS.
STABLIZED CONSTRUCTION SITE ACCESS	ENTRANCES TO SITE FROM PUBLIC ROADWAYS.	CONTINUOUS UNTIL ENTRANCES AND ON-SITE ROADWAYS ARE PAVED.	INSPECT AT THE BEGINNING OF WET SEASON AND ON AT LEAST A MONTHLY BASIS THEREAFTER. ADD AGGREGATE BASE MATERIAL WHENEVER NECESSARY TO PREVENT SEDIMENT FROM BEING TRACKED INTO PUBLIC STREET.
WIND EROSION CONTROL PRACTICES	WHEREVER NECESSARY THROUGHOUT PROJECT SITE.	CONTINUOUS UNTIL GRADING IS COMPLETED AND SOILS HAVE STABILIZED.	INSPECT SITE DURING WINDY CONDITIONS TO IDENTIFY AREAS WHERE WIND EROSION IS OCCURRING AND ABATE EROSION AS NECESSARY.
GOOD HOUSEKEEPING MEASURES	THROUGHOUT PROJECT SITE.	CONTINUOUS UNTIL CONSTRUCTION IS COMPLETED.	INSPECT SITE ON AT LEAST A MONTHLY BASIS TO VERIFY GOOD HOUSEKEEPING PRACTICES ARE BEING IMPLEMENTED.
PROPER CONSTRUCTION MATERIAL STORAGE	THROUGHOUT PROJECT SITE.	CONTINUOUS UNTIL CONSTRUCTION IS COMPLETED.	INSPECT SITE ON AT LEAST A MONTHLY BASIS TO VERIFY THAT CONSTRUCTION MATERIALS ARE STORED IN A MANNER WHICH COULD NOT CAUSE STORMWATER POLLUTION.
PROPER CONSTRUCTION WASTE STORAGE AND DISPOSAL.	THROUGHOUT PROJECT SITE.	CONTINUOUS UNTIL CONSTRUCTION IS COMPLETED.	INSPECT SITE ON AT LEAST A WEEKLY BASIS TO ASSURE WASTE IS STORED PROPERLY AND DISPOSED OF AT LEGAL DISPOSAL SITE.
SPILL CLEANUP	MATERIAL HANDLING AREAS.	IMMEDIATELY AT TIME OF SPILL.	INSPECT MATERIAL HANDLING AREAS ON AT LEAST A MONTHLY BASIS TO VERIFY PROPER SPILL CLEANUP.
STREET AND STORM DRAINAGE FACILITY MAINTENANCE.	STREETS AND STORM DRAINAGE FACILITIES.	CONTINUOUS UNTIL CONSTRUCTION IS COMPLETED.	MAINTAIN STORM DRAINAGE FACILITIES AND PAVED STREETS CLEAR OF SEDIMENT AND DEBRIS.

DEFINITIONS:

1. WET SEASON: ENTIRE PERIOD BETWEEN OCTOBER 1 THROUGH APRIL 30. CONTRACTOR SHALL ALSO IMPLEMENT WET SEASON MEASURES IF WET WEATHER IS EXPECTED DURING THE DRY SEASON.
2. PHASE OF GRADING:
   ROUGH: WHEN CUT AND FILL ACTIVITIES OCCUR AND THE SITE IMPROVEMENTS ARE CONSTRUCTED, INCLUDING UNDERGROUND PIPING, STREETS, SIDEWALKS, AND OTHER IMPROVEMENTS.
   FINAL: WHEN FINAL ELEVATIONS ARE SET, AND SITE IMPROVEMENTS ARE COMPLETED AND READY FOR COUNTY ACCEPTANCE.

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IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
EROSION CONTROL NOTES
CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
C6.2
SHEET 19 OF 28

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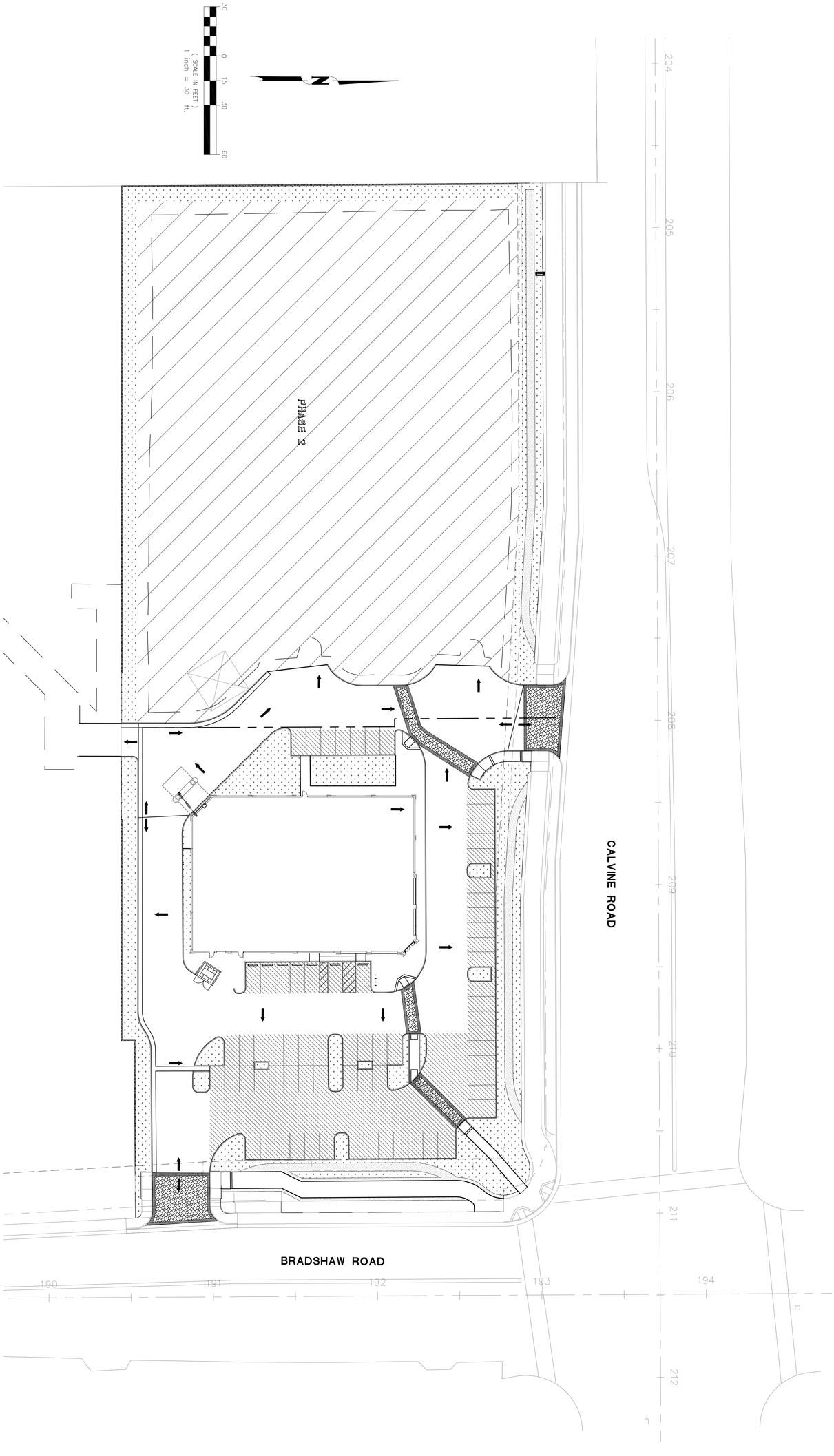

PROJECT NO: 333540	IMPROVEMENT PLANS FOR	JACOBS™	DATE: AS BUILT 5/10/2010	THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.
C6.3	SHOPS AT CALVINE POST CONSTRUCTION STORMWATER QUALITY PLAN	180 PROMENADE CIR. STE 300 SACRAMENTO, CA 95834 PHONE (916) 929-3323 FAX (916) 929-1772	SCALE: AS SHOWN DRAWN BY: S. ANDERSON DESIGNED BY: M. SILVEIRA CHECKED BY: G. STEDFIELD	REV NO. / ENGR INIT. / BY / DATE / CITY ACCEPTANCE
SHEET 20 OF 28	CITY OF ELK GROVE CALIFORNIA			

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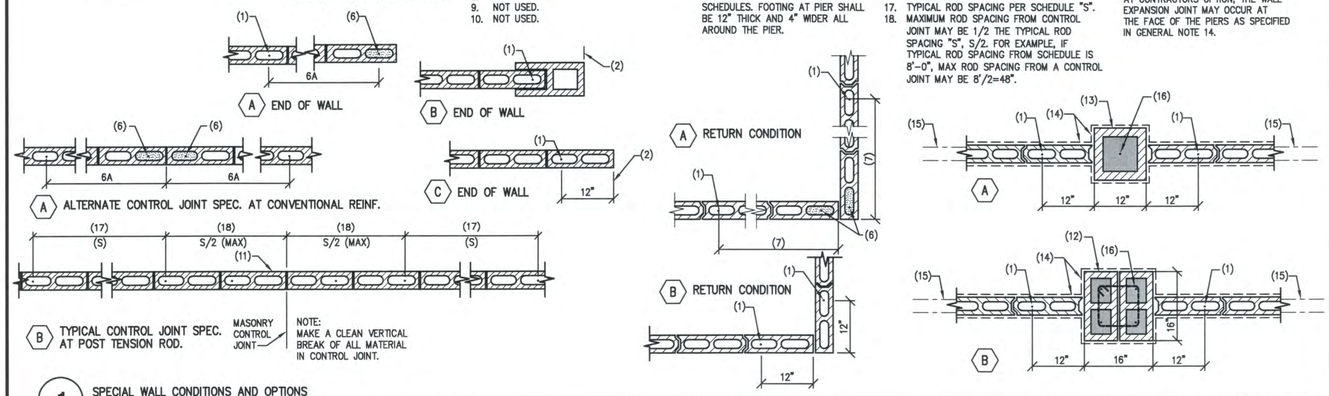
AS-BUILT

NOTES:
1. POST TENSIONED ROD.
2. END OF WALL.
3. RODS AT 12" EITHER SIDE OF A CONTROL JOINT OR END OF WALL.
4. NOT USED.
5. NOT USED.
6. #4 REINFORCING WITH 6" HOOK INTO FOOTING BELOW. FILL WITH GROUT OR 8" HIGH LIFTS OF MORTAR.
6A. POST TENSIONED ROD SPACING PER SCHEDULE BUT NOT TO EXCEED 4'-8" ON EITHER SIDE OF THE CONTROL JOINT OR END OF WALL.
7. END OR CORNER OF WALL MAY START WITH #4 VERTICAL REBAR, GROUT SOLID THEN SPACE FIRST POST TENSION ROD PER SCHEDULE. REBAR MAY SUBSTITUTE FOR P.T. ROD AT CORNER OR END OF WALL.
8. NOT USED.
9. NOT USED.
10. NOT USED.
11. PROTO II WALL.
12. 16" MASONRY PIER WITH 4 #4 VERTICAL AND 1 #2 TIE AT TOP OF PIER.
13. 12" SQUARE MASONRY PIER WITH 1 #5 VERTICAL.
14. LINE OF FOOTING BELOW. FOOTING AT PROTO II WALL PER PLANS AND SCHEDULES. FOOTING AT PIER SHALL BE 12" THICK AND 4" WIDER ALL AROUND THE PIER.
15. RUN HORIZONTAL JOINT REINFORCING THROUGH PIER STOP AT FACE OF PIER AT CONTRACTOR'S OPTION.
16. ALL VERTICAL MASONRY PIER REINFORCING SHALL HAVE 6" HOOKS AT BOTTOM AND EXTEND A MINIMUM OF 8" INTO FOOTING.
17. TYPICAL ROD SPACING PER SCHEDULE "S".
18. MAXIMUM ROD SPACING FROM CONTROL JOINT MAY BE 1/2 THE TYPICAL ROD SPACING "S", S/2. FOR EXAMPLE, IF TYPICAL ROD SPACING FROM SCHEDULE IS 8'-0", MAX ROD SPACING FROM A CONTROL JOINT MAY BE 8'/2=48".

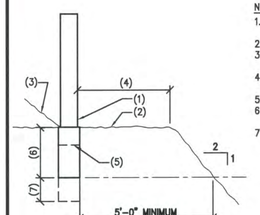
NOTE:
* SEE 8" ROD VARIANCE SPEC AT NOTES NO. 5 AT BOTTOM OF WALL SCHEDULE. 8" VARIANCE APPLIES TO ALL RODS EXCEPT THOSE AT CONTROL JOINTS AND END OF WALL.

* AT CONTRACTORS OPTION, THE WALL EXPANSION JOINT MAY OCCUR AT THE FACE OF THE PIERS AS SPECIFIED IN GENERAL NOTE 14.



1 SPECIAL WALL CONDITIONS AND OPTIONS

NO SCALE



NOTES:
1. FENCE WALL – DETAIL NOT SHOWN FOR CLARITY.
2. FINISHED GRADE.
3. NO SLOPING ADJACENT GRADE ALLOWED.
4. FACE OF FOOTING TO TOP OF SLOPE.
5. BOTTOM OF SETTING PAD.
6. SEE SCHEDULE FOR WALLS UP TO 6'–0" HIGH.
7. SEE SCHEDULE FOR WALLS ABOVE 6'–0" HIGH.

NOTE:
THIS DETAIL DESCRIBES THE MINIMUM DISTANCE REQUIREMENTS FOR THE LOWEST FOOTING EDGE TO FINISHED GRADE.

5'–0" MINIMUM TO DAYLIGHT

(6)

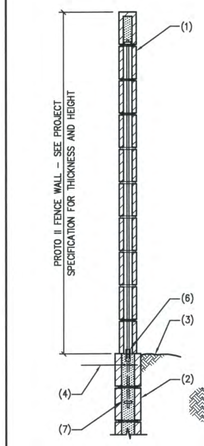
SCHEDULE FOR WALLS UP TO 6'–0"		
FACE OF FOOTING TO TOP OF SLOPE.	MIN. DEPTH OF DIP OR TRENCH FOOTING	OR MINIMUM DEPTH OF 13" DIA PIER
12" OR MORE	2'–4"	3'–6"
6" TO 11"	2'–7"	3'–10"
3" TO 5"	2'–10"	4'–0"

(7)

SCHEDULE FOR WALLS ABOVE 6'–0" UP TO 9'–4"		
FACE OF FOOTING TO TOP OF SLOPE.	ADDED DEPTH OF DIP OR TRENCH FOOTING	OR ADDED DEPTH OF 13" DIA PIER
36" OR MORE	0"	0"
30"	6"	6"
24"	9"	9"
12"	15"	15"
6"	18"	18"
3"	20"	20"

9 5'–0" TO DAYLIGHT DETAIL FOR FOOTINGS

NO SCALE

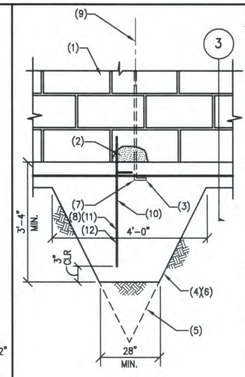


NOTES:
1. PROTO II FENCE WALL PER PRODUCT DATA SHEET.
   A. PROTO II TENSION ROD SHALL BE 7/16" DIA STRAIGHT, THREADED BOTH ENDS AND SHALL HAVE MIN. 6" EMBED INTO MASONRY RETAINING WALL WITH PLATE WASHER.
2. SOLID GROUTED RETAINING WALL. DESIGNED BY OTHERS. INSTALLER TO VERIFY RETAINING WALL DESIGNED BY OTHERS WILL SUPPORT THE PROTO II FENCE WALL ABOVE.
3. FINISHED GRADE.
4. 2 #3 MIN. IN BOND BEAM – LAP 20" WHERE OCCURS.
5. BACKFILL SHALL BE NON–EXPANSIVE SOILS. SEE SOILS REPORT.
6. COUPLER IF PARTIAL HEIGHT ROD IS USED IN LIEU OF FULL HEIGHT ROD.
7. 1/4"x1"x2" EMBEDMENT PLATE WITH 1/2" NUT ABOVE PLATE AND 1/2" COUPLER BELOW PLATE (OR (2) 1/2" NUTS).

NOTE:
PROTO II FENCE WALL CAN BE PLACED AT ANY LOCATION ON THE TOP OF THE RETAINING WALL (FLUSH OR CENTERED) BUT THE POST TENSIONED ROD SHALL AT ALL TIMES BE PLACED BETWEEN THE 2 REINFORCING BARS AT THE TOP OF THE RETAINING WALL.

7 PROTO II WALL CONNECTION TO TOP OF CONVENTIONAL MASONRY RETAINING WALL

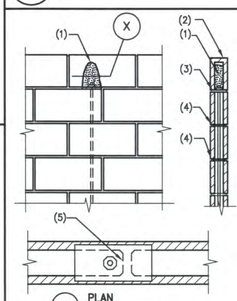
NO SCALE



NOTES:
1. PROTO II FENCE WALL.
2. 3" MORTAR COVER AROUND COUPLER AND/OR POST TENSIONED ROD FOR CORROSION PROTECTION.
3. 7/16" DIA FULL HEIGHT POST TENSIONED RODS WITH 3" HOOKS. ROLL THREADS AT TOP FOR NUT ATTACHMENT.
4. CONC. FTG. – NO COLD JOINTS PERMITTED.
5. TRENCH MAY BE OVER EXCAVATED AS SHOWN– FILL W/ COMPACTED FILL OR CONCRETE.
6. 13"ø x 4'–9" DEEP CIRCULAR PIER FTG. MAY BE USED IN LIEU OF DIP FTG. SPACING AND SETTING PAD TO REMAIN THE SAME.
7. NO VOIDS OR HONEYCOMBING OF CONC. AT JUNCTION OF POST TENSION ROD AND REINFORCING BARS ALLOWED. PROVIDE CONSOLIDATION OF CONCRETE VIA VIBRATION, RODDING OR OTHER APPROPRIATE MEANS.
8. VERTICAL FOOTING REINFORCING AT WALLS OVER 6'–0" HIGH USE #4 x 6'–0" STRAIGHT "J" OR "L" OK, 24" IN CENTER OF DIP OR PIER.
9. THIS DETAIL SHOWS THE POST TENSION ROD CENTERED IN THE DIP FTG. – HOWEVER THE POST TENSION ROD SPACING IS INDEPENDENT OF THE DIP FTG. AND THEY DO NOT NEED TO LINE UP.
10. NOT USED IN WALLS 6'–0" AND UNDER.
11. VERT. REINF. REQ'D WHEN USING CIRCULAR PIER DETAIL IN LIEU OF "DIP", SEE NOTE 6 BELOW WALL SCHEDULE.
12. A CONTRACTOR OPTION IS TO STAB THE #4 VERTICAL REBAR DOWN INTO THE DIP, PIER OR CONTINUOUS TRENCH FOOTING AND EXTEND IT +/–8" INTO THE FIRST COURSE OF BLOCK.

4 DIP FOOTING PROFILE

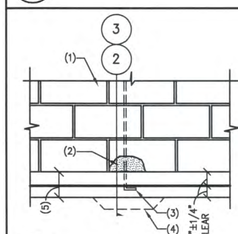
NO SCALE



NOTES:
1. FILL CAP BLOCK WITH MORTAR. IMMEDIATELY "FLIP" ONTO ROD.
2. CAP BLOCK OF SUFFICIENT SIZE TO COVER PLATE AND ROD.
3. STEEL PLATE SIZES:
   A. 4" PROTO II: 1/4" x 3" x 6"
   B. 6" PROTO II: 1/4" x 4 1/2" x 6"
   C. 6" SLUMP PROTO II: 1/4" x 4" x 6"
   D. 8" PROTO II: 1/4" x 6 1/2" x 8"
   STEEL PLATES TO BE PLACED AT THE EDGE OF THE CELL SO THAT THE PLATE BEARS FULLY ON THREE SIDES EXCEPT AT 8" PROTO II WHERE THE STEEL PLATE SHOULD BEAR ON ALL FOUR SIDES.
4. CONTINUOUS HORIZONTAL JOINT REINFORCING PER NOTE #12.
5. CENTER WEB BELOW.

5 TOP OF FENCE DETAIL

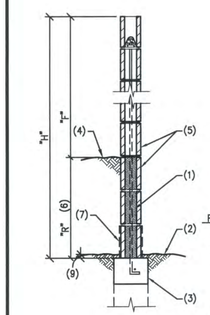
NO SCALE



NOTES:
1. PROTO II WALL.
2. 3" MORTAR COVER AROUND COUPLER AND/OR POST TENSIONED ROD FOR CORROSION PROTECTION.
3. 7/16" DIA FULL HEIGHT POST TENSIONED RODS WITH 3" HOOKS. ROLL THREADS AT TOP FOR NUT ATTACHMENT. NO VOIDS OR JUNCTION OF POST TENSION ROD AND REINF. BARS ALLOWED. PROVIDE CONSOLIDATION OF CONCRETE VIA VIBRATION, RODDING OR OTHER APPROPRIATE MEANS.
4. THICKEN FOOTING TO PROVIDE 3" MIN. COVER AS REQUIRED AROUND ANCHOR BOLT.
5. SEE SCHEDULE AND OTHER DETAILS.

6 FOOTING ELEVATION AT POST TENSIONED ROD

NO SCALE



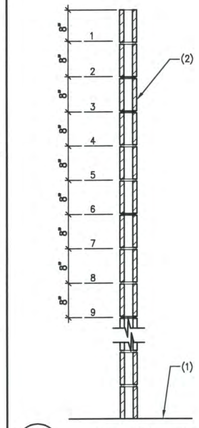
NOTES:
1. GROUT SOLID ONLY AT POST–TENSION ROD CELLS BELOW GRADE.
2. LOW SOIL.
3. CONCRETE FOOTING.
4. HIGH SOIL.
5. PROTO II FENCE WALL.
6. * 1'–4" MAX. AT 4" PROTO II.
   * 2'–0" MAX. AT 6" PROTO II.
   * 2'–8" MAX AT 8" PROTO II.
7. A MODIFIED 6" THICK PROTO II WALL MAY BEGIN WITH A SOLID 8" HIGH GROUTED COURSE OF 8" BLOCK. THE SOIL RETAINAGE MAY THEN INCREASE TO 2'–8". FOR 8" WIDE WALLS USE A 10" WIDE FLANGE, 6" DEEP AT TOP OF FOOTING.
8. HEAD JOINTS IN FIRST COURSE OMITTED FOR WEEP HOLES, SEE GENERAL NOTE 9.
9. 2" SOIL MIN OVER FOOTING.

ROD SPACING AND FOOTING SELECTION NOTES

A. FOR ALL RETAINING CONDITION EXPOSURES B AND C WITH LESS THAN 6'–0" FENCE ABOVE ASSUME A MINIMUM FENCE HEIGHT "F" OF 6'–0" (H MIN = 6'+"R"). (EXAMPLE: FOR 1'–4" RETAINING AND A 4'–0" HIGH FENCE WALL, H=6'–0"+1'–4"= 7'–4" USE 7'–4" SCHEDULE DESIGN.)
B. FOR ALL EXP C CONDITIONS WITH 6'–0" WALL OR GREATER USE SCHEDULE WALL HEIGHT "H".
C. FOR ALL EXPOSURE B CONDITIONS WITH A WALL HEIGHT 6'–0" OR GREATER USE SCHEDULE WALL HEIGHT = "H"+8". (EXAMPLE: FOR 2'–0" RETAINING (R) AND 6'–0" FENCE (F), USE SCHEDULE WALL HEIGHT = "6"+"1"+8" = 8'–8").
D. NO SURCHARGES, PARKING, STRUCTURES, ETC. WITHIN 5'–0" OF RETAINING WALLS.

10 DETAIL AT SOIL RETAINAGE

NO SCALE



NOTES:
1. TOP OF FOOTING.
2. PROTO II WALL – VERTICAL POST TENSIONED ROD NOT SHOWN FOR CLARITY.
3. 8" HIGH COURSES ARE SHOWN IN DETAIL. OTHER BLOCK SIZES MAY BE USED AS REQUIRED BY THE FENCE WALL DESIGN.

HORIZONTAL JOINT REINFORCING (REF. GENERAL NOTE #12).
1. HORIZONTAL JOINT REINFORCING SHALL BE PLACED AT THE MORTAR JOINTS #2 & #3 BELOW THE PLATE WASHER AND 2'–0" O.C. THEREAFTER UNTIL THE TOP OF FOOTING IS REACHED. (e.g. A NOMINAL 6'–0" HIGH WALL WOULD HAVE JOINT REINFORCING IN A TOTAL OF THREE COURSES).

8 HORIZONTAL JOINT REINFORCING

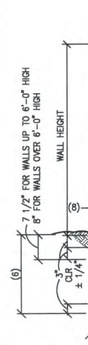
NO SCALE

NOTES:
1. POST TENSION ROD.
2. NUT.
3. COMPRESSED DTI INDICATOR – NO LIGHT PASSES BETWEEN BOTTOM OF NUT AND DTI WHEN PROPERLY TENSIONED.
4. TOP PLATE.
5. COLLAPSIBLE TABS.
6. MINIMUM TENSION TO BE 6,000 LBS LOAD AND CONFIRMED BY ONE OF TWO METHODS PER NOTE "C" BELOW.

A. PROTO–II DTI TO BE USED AT EACH TENSION ROD, TABS FACING UP AGAINST BOTTOM OF 1/2" NUT AND TABS COLLAPSED TO ACHIEVE TENSION.
B. DTI IS ONE OF TWO APPROVED METHODS OF TENSIONING. OTHER OPTION OF TENSIONING IS TORQUE TO 55 FT/LBS USING A CALIBRATED TORQUE WRENCH DTI MUST STILL BE PLACED ON ROD IF USING TORQUE WRENCH METHOD. SEE GENERAL NOTE 17.
C. APPROVED SPECIAL DEPUTY INSPECTOR WILL PERFORM A VISUAL INSPECTION WHEN USING THE DTI METHOD TO CONFIRM THE DTI IS COLLAPSED WITH NO LIGHT LEAKS BETWEEN THE TABS AND BOTTOM OF NUT. IF USING TORQUED WRENCH METHOD, DEPUTY INSPECTOR WILL CONFIRM NUT IS TORQUED TO 55 FT/LBS AND VISUAL INSPECTION OF DTI IS NOT REQUIRED.
D. INSTALLER MUST HAVE SPECIAL DEPUTY INSPECTION PERFORMED BY ONE OF THESE TWO METHOD, BY AN APPROVED SPECIAL DEPUTY INSPECTOR. INSPECTOR TO PROVIDE A COMPLETED REPORT TO LISTED PARTIES.

2 DTI INDICATOR (DIRECT TENSION INDICATOR)

NO SCALE



NOTES:
1. 4" NOMINAL (3 5/8" ACTUAL) OR 6" NOMINAL (5 5/8" ACTUAL) OR 8" NOMINAL (7 5/8" ACTUAL) MASONRY.
2. HORIZONTAL JOINT REINF – SEE NOTE #14.
3. 2 – #4 CONTINUOUS TOP AND BOTTOM AT 4" AND 6" PROTO II. 2 – #5 CONTINUOUS TOP AND BOTTOM AT 8" PROTO II.
4. CONCRETE SETTING PAD. NO VOIDS OR HONEYCOMBING OF CONCRETE AT JUNCTION OF POST TENSION ROD AND REINF. BARS ALLOWED. PROVIDE CONSOLIDATION OF CONCRETE VIA VIBRATION, RODDING OR OTHER APPROPRIATE MEANS.
5. DASHED LINE INDICATES LINE OF DIP FOOTING OR LINE OF CONT TRENCH FOOTING.
6. DEPTH OF CONTINUOUS TRENCH FOOTING.
7. NOT USED.
7A. NOT USED.
8. 3" MORTAR COVER AROUND COUPLER AND/OR POST TENSIONED ROD FOR CORROSION PROTECTION AT FIRST COURSE.
9. VERTICAL REINFORCING AT TRENCH, AND DIP FOOTINGS FOR WALLS OVER 6'–0" HIGH. USE #4 x AT THE CENTER AS REQUIRED OF STRAIGHT "J" OR "L" OK, 24" EACH DIP FOOTING AT DIP FOOTING DESIGN. REBAR SPACING IN TRENCH FOOTING FOR WALLS 6'–8" TO 8'–0" SHALL MATCH SPACING OF DIP FOOTINGS. ABOVE 8'–0" AND WHERE DIP FOOTING SPACING NOT AVAILABLE, SPACE VERTS AT 24" O.C. MAX.
10. A CONTRACTOR OPTION IS TO STAB THE #4 VERTICAL REBAR DOWN INTO THE DIP, PIER OR CONTINUOUS TRENCH FOOTING AND EXTEND IT +/–8" INTO THE FIRST COURSE OF BLOCK.
11. 2" SOIL MIN OVER FOOTING.

3 TYPICAL WALL SECTION AT DIP FOOTING AND TRENCH FOOTING

NO SCALE

NOTES:
1. FOOTING DESIGN ALLOWABLES: 1000 PSF BEARING, 200 PSF/FT LATERAL.
2. MAXIMUM HEIGHT FOR 4" PROTO II = 6'–0": MAX. HEIGHT FOR 6" PROTO II = 10'–0". MAX. HEIGHT FOR 8" PROTO II = 13'–4" COMBINATION WALLS MAY BE USED.
3. MAXIMUM DIP FOOTING SPACING = 16'–0": MINIMUM SPACING = 3'–4". TOLERANCE IS 12"± BUT THE NUMBER OF DIP FOOTINGS MUST REMAIN THE SAME FOR A GIVEN LENGTH OF WALL.
4. POST TENSION ROD IS INDEPENDENT OF DIP OR PIER SPACING.
5. POST TENSION ROD SPACING TOLERANCE IS ±8" BUT THE NUMBER OF RODS FOR A GIVEN LENGTH OF WALL MUST REMAIN THE SAME.
6. 13"ø x 4'–9" DEEP CIRCULAR PIER FOOTING WITH 2 #4 VERT, MAY BE USED IN LIEU OF DIP FOOTING SPACING AND SETTING PAD TO REMAIN THE SAME.

GENERAL NOTES

1. THE PROTO–II WALL IS DESIGNED FOR WIND AND SEISMIC FORCES AS REQUIRED AND APPROVED BY THE LOCAL JURISDICTION. SEE SCHEDULES FOR EXPOSURE, WIND FORCES, POST TENSIONED ROD SPACING, FOOTING SIZES, ETC. CONTRACTOR IS RESPONSIBLE TO VERIFY REQUIREMENTS WITH BUILDING DEPARTMENT AND OWNER. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE APPROVED SITE PLAN SOILS REPORT AND/OR APPLICABLE CODE REQUIREMENTS.
2. THESE DESIGNS ARE NOT TO BE USED FOR RETAINING EARTH (LEVEL BACKFILL) ABOVE 1'–4" FOR 4" PROTO–II, 2'–0" FOR 6" PROTO–II, AND 2'–8" FOR 8" PROTO–II AS MEASURED FROM LOW SIDE. NO SURCHARGES WITHIN 5'–0" OF WALL ARE ALLOWED. SEE DETAIL 10.
3. FOOTINGS TO BE LEVEL. IF GROUND SLOPES THE FOOTING SHALL BE STEPPED. EACH STEP SHOULD BE PROPER HEIGHT TO FIT BLOCK TYPE USED. ALL EXCAVATIONS SHOULD BE CLEAN AND CONTAIN NO LOOSE EARTH OR FOREIGN MATTER.
4. SOIL SHALL BE FIRM AND COMPACTED PRIOR TO PLACEMENT OF CONCRETE. PRIOR TO FOUNDATION EXCAVATION, CONTRACTOR SHALL VERIFY VIA SOILS REPORT THAT SITE SOILS CONDITIONS MEET OR EXCEED AN ALLOWABLE PASSIVE BEARING PRESSURE OF 200 PSF/FT STARTING AT THE TOP OF GRADE(LE. NO TOP SOILS ARE NEGLECTED FOR PASSIVE) AND A MINIMUM ALLOWABLE BEARING PRESSURE OF 1000 PSF.
5. SOIL SHALL BE WELL DRAINED FOR FOOTINGS AND FOUNDATIONS, USE CONCRETE WITH A MIN. STRENGTH OF 2,500 PSI – TYPE II CEMENT (TYPE V WHERE REQUIRED BY OWNER, SOILS ENGINEER OR JURISDICTION). CONCRETE SHALL BE A MIN. OF 48 HOURS OLD PRIOR TO FINAL TENSIONING.
6. LAP REINFORCING STEEL: LAP = 26" FOR #4 BARS 32" FOR #5 BARS IN MASONRY. 24" LAP IN CONCRETE FOR #4 OR #5 BAR.
7. CONCRETE MASONRY UNITS SHALL COMPLY WITH ASTM C–90 AND BE 2,000 PSI MIN. (F'M DESIGN CRITERIA FOR BLOCK IS BASED ON 2000 PSI). BLOCK SHALL BE A MIN OF 7 DAYS OLD PRIOR TO ROD TENSIONING. STANDARD HEAD AND BED JOINT BLOCKS WITH MORTAR MAY BE USED OR INTERLOCKING BLOCKS MAY BE USED.
8. MORTAR SHALL BE TYPE S, 2000 PSI MIN. MORTAR MAY BE USED AS GROUT IN 8" HIGH LIFTS. MORTAR MUST BE A MIN. OF 4 HOURS OLD PRIOR TO INITIAL TENSIONING AND 24 HOURS OLD PRIOR TO FINAL TENSIONING.
9. FIRST MASONRY COURSE MAY BE SET IN FRESH CONCRETE FOOTING. HEAD JOINTS MAY BE OMITTED IN FIRST COURSE FOR WEEP HOLES.
10. REINFORCING REBAR SHALL CONFORM TO ASTM A615; Fy = 40,000 PSI.
11. PROTO–II HARDWARE IS DEFINED AS: TENSION RODS, BEARING PLATES, COUPLERS, NUTS, ALL THREADS, DIRECT TENSION INDICATORS (A DIRECT TENSION INDICATOR (DTI) IS A COMPRESSIBLE WASHER) AND PLASTIC SADDLES. ALL OF THIS HARDWARE SHALL BE SUPPLIED BY ONLY AN APPROVED PROTO–II LICENSEE TO THE CERTIFIED INSTALLER. POST TENSION RODS SHALL BE 7/16" DIAMETER WITH 1/2" ROLL THREADS CONFORMING TO ASTM A615 (Fy = 60000 PSI) AND HAVE STEEL CHEMISTRY SO THAT BENDING AND THREADING CAN BE ACCOMPLISHED WITHOUT DAMAGE TO THE POST TENSION ROD. AREA OF POST TENSION ROD = .1503 SQUARE INCHES. BEARING PLATES ARE 1/4" THICK (Fy=50 KSI) SEE DETAIL 5 FOR WIDTHS. 1/2" COUPLERS PER ASTM A563 GRADE A, AND THE COUPLER MUST FULLY ENGAGE THE UPPER AND LOWER ROD, FULLY ENGAGED AS DEFINED AS 1/2" MIN. INTO COUPLER. 1/2" NUTS ARE TO BE GRADE B, PER ASTM A325. 1/2" ALL THREADS PER ASTM A307, GRADE 60. DIRECT TENSION INDICATOR (DTI – COMPRESSIBLE WASHER) IS PER ASTM F959 TESTING PROCEDURES. PLASTIC REBAR SADDLES ARE NON–STRUCTURAL.
12. HORIZONTAL JOINT REINFORCING SHALL BE 9 GAGE DIAMETER WIRE AND PLACED PER DETAIL 8 AND CONFORM TO ASTM A82 LADDER TYPE, 9 GAGE DIAMETER. LAP JOINT REINFORCING ONE FULL CROSS SQUARE (6" MINIMUM LAP).
13. IN LIEU OF FULL HEIGHT RODS, CONTRACTOR MAY USE SHORTER RODS, 1/2" COUPLERS AND STRAIGHT RODS THREADED BOTH ENDS FOR ADDITIONAL LIFTS. MIN. OF 3" "L" HOOK, OR "J" HOOK AT END OF TENSION ROD.
14. VERTICAL CONTROL JOINTS TO BE PLACED AT MAX. 36' O.C. IN ALL NON–STUCCOED WALLS AND 20' ON CENTER IN STUCCOED WALLS WITH CLEAN VERTICAL BREAK OF ALL MATERIALS. SEE DETAIL 1 FOR ROD SPACING AT CONTROL JOINTS AND WALL ENDS.
15. NO COUPLERS MAY OCCUR DIRECTLY BELOW AND IN CONTACT WITH THE BEARING PLATE.
16. TENSION RODS MAY BE STABBED INTO WET CONCRETE OR TIED IN PLACE AT CONTRACTOR OPTION; SEE DETAIL 6, NOTE NO. 3. AT CONTRACTOR OPTION, VERTICAL REBAR MAY BE STABBED DOWN INTO THE DIP, SEE DETAILS 3 AND 4.
17. A PROTO–II DTI (COMPRESSIBLE WASHER) SHALL BE INSTALLED AT EVERY TENSION ROD BETWEEN THE BEARING PLATE AND NUT W/ THE DTI "TABS" FACING UP AGAINST THE BOTTOM OF THE NUT. THE SPECIAL DEPUTY INSPECTION REQUIRED AT TIME OF FINAL TENSIONING BY A PROTO–II APPROVED INSPECTOR SHALL VERIFY FINAL TENSIONING TO 6,000 POUNDS BY 1 OF 2 METHODS; METHOD 1: VISUAL INSPECTION OF DIRECT TENSION INDICATOR (DTI), TABS FACING UP AND COLLAPSED AGAINST NUT W/ NO LIGHT LEAKAGE BETWEEN THE PROTO–II DTI AND BOTTOM OF NUT: METHOD 2: USE OF A CALIBRATED TORQUE WRENCH TORQUED TO 55FT/LBS. (DTI MUST STILL BE PLACED WITH METHOD 2. NO VISUAL INSPECTION OF DTI REQUIRED WHEN USING METHOD 2). INSPECTOR SHALL OBSERVE THE USE OF THREAD LUBRICANT, THE POSITION OF PLATE ON BLOCK, AND INTEGRITY OF MORTAR JOINTS. AND PROVIDE A SIGNED REPORT TO ALL APPROPRIATE PARTIES. MASONRY DESIGN IS BASED ON THIS SPECIAL INSPECTION.
18. *DESIGNS ILLUSTRATED ON THIS PRODUCT DATA SHEET ARE FOR PROTO–II WALLS AND PROTO–II RETAINER WALLS UP TO A COMBINED HEIGHT OF 10'–0". ADDITIONAL SCHEDULES ARE AVAILABLE FOR PROTO–II WALLS UP TO 13'–4" HIGH AND HIGHER "HYBRID" PROTO–II WALLS.
19. ALL CONVENTIONALLY REINFORCED PLASTERS REQUIRE SPECIAL INSPECTION. SPECIAL INSPECTION INCLUDES CONTINUOUS OBSERVATION OF GROUTING ALONG WITH A PRE–GROUT INSPECTION THE PRE–GROUT INSPECTION INCLUDES VERIFICATION OF THE LOCATION OF STRUCTURAL ELEMENTS, GRADE OF REINFORCEMENT AND OVERALL WORKMANSHIP AND QUALITY OF MATERIALS BEING USED, FOR CONFORMANCE WITH CONSTRUCTION DOCUMENTS.
20. END ZONES FOR WIND DESIGNS ARE EXCLUDED. I.E. Cf = 1.3.

PROTO II FENCE WALL SCHEDULE - PER 2007 CBC/06 IBC

EXPLANATION OF WIND LOAD DESIGNATIONS:

ASCE 7–05
qz = 0.00256 x Kz x Kzt x Kd x V^2x I (EQ. 6–15)
Kz = 0.57 EXP B, 0.85 EXP C (TABLE 6–3)
Kzt = 1.0 FOR H ≤ 15'–0" (SECTION 6.5.7.1 #5)
Kd = 0.85 (SIMILAR TO SOLID SIGN, TABLE 6–4)
V = VELOCITY 3 SECOND WIND GUST

I = 0.87 (CATEGORY I TABLE 6–1)
F = qz x G x Cf x Af (EQN 6–28)
G = 0.85 (RIGID STRUCTURE SEC 6.5.8)
*Cf = 1.3 x 1.1 (FOR S/H = 1 AND B/S ≥ 10)
As = ASSUME 1 SQUARE FOOT.

* 1.1 MULTIPLIER USED TO ADJUST FOR OBLIQUE ADJUSTMENT FACTOR PER FIGURE 6–20 FOOTNOTE 3.

WIND FORCE	WALL HEIGHT	4" PROTO II POST TENSION ROD SPACING ON CENTER	6" PROTO II POST TENSION ROD SPACING ON CENTER	8" PROTO II POST TENSION ROD SPACING ON CENTER	DIP/PIER FOOTING ON CENTER SPACING, SEE DETAIL 4 FOR DIP FOOTING PROFILE, SEE DETAIL 3 FOR SECTION	CONTINUOUS TRENCH FOOTING DEPTH ** SEE DETAIL 3 FOR SECTION
10 PSF 85 MPH ExP B	3'–4"	8'–0"	8'–0"	8'–0"	16'–0"	40"
	4'–0"	8'–0"	8'–0"	8'–0"	15'–0"	41"
	4'–8"	8'–0"	8'–0"	8'–0"	12'–6"	44"
	5'–4"	5'–4"	6'–0"	6'–8"	9'–6"	45"
	6'–0"	4'–0"	4'–8"	5'–4"	7'–6"	46"
	6'–8"	2'–0"	4'–0"	4'–8"	6'–0"	47"
	7'–4"	–	3'–4"	4'–0"	5'–0"	50"
	8'–0"	–	2'–8"	3'–4"	–	51"
	8'–8"	–	2'–8"	2'–8"	–	52"
*	9'–4"	–	2'–8"	2'–8"	–	53"

* SEE GENERAL NOTE 18.

** TRENCH FOOTING DEPTH ADJUSTMENT (AT CONTRACTOR'S OPTION):

AT THE CONTRACTOR'S OPTION, UP TO ONE COURSE OF MASONRY MAY BE BURIED BELOW GRADE. THE BURIED BLOCK MAY BE USED AS PART OF THE TRENCH DEPTH PROVIDED THE SOIL WITHIN 5'–0" OF EACH SIDE OF THE BLOCK IS COMPACTED TO 90 PERCENT. THE OVERALL WALL HEIGHT IS DEFINED AS SHOWN IN DETAIL 3, FROM THE TOP OF THE FOOTING TO THE TOP OF THE WALL REGARDLESS OF WHETHER A COURSE IS BURIED.

SOIL REPORT BY: SALEM ENG. GROUP
PROJECT NO. 1–208–0035
DATED: 2/11/08
ACTIVE PRESSURE = 36 PCF
ALLOWABLE PASSIVE = 230 PCF
ALLOWABLE BEARING = 1850 PSF
FRICTION COEFFICIENT = 0.35

NOTES:
1. POST TENSION ROD.
2. NUT.
3. COMPRESSED DTI INDICATOR – NO LIGHT PASSES BETWEEN BOTTOM OF NUT AND DTI WHEN PROPERLY TENSIONED.
4. TOP PLATE.
5. COLLAPSIBLE TABS.
6. MINIMUM TENSION TO BE 6,000 LBS LOAD AND CONFIRMED BY ONE OF TWO METHODS PER NOTE "C" BELOW.

A. PROTO–II DTI TO BE USED AT EACH TENSION ROD, TABS FACING UP AGAINST BOTTOM OF 1/2" NUT AND TABS COLLAPSED TO ACHIEVE TENSION.
B. DTI IS ONE OF TWO APPROVED METHODS OF TENSIONING. OTHER OPTION OF TENSIONING IS TORQUE TO 55 FT/LBS USING A CALIBRATED TORQUE WRENCH DTI MUST STILL BE PLACED ON ROD IF USING TORQUE WRENCH METHOD. SEE GENERAL NOTE 17.
C. APPROVED SPECIAL DEPUTY INSPECTOR WILL PERFORM A VISUAL INSPECTION WHEN USING THE DTI METHOD TO CONFIRM THE DTI IS COLLAPSED WITH NO LIGHT LEAKS BETWEEN THE TABS AND BOTTOM OF NUT. IF USING TORQUED WRENCH METHOD, DEPUTY INSPECTOR WILL CONFIRM NUT IS TORQUED TO 55 FT/LBS AND VISUAL INSPECTION OF DTI IS NOT REQUIRED.
D. INSTALLER MUST HAVE SPECIAL DEPUTY INSPECTION PERFORMED BY ONE OF THESE TWO METHOD, BY AN APPROVED SPECIAL DEPUTY INSPECTOR. INSPECTOR TO PROVIDE A COMPLETED REPORT TO LISTED PARTIES.

NOTES:
1. FOOTING DESIGN ALLOWABLES: 1000 PSF BEARING, 200 PSF/FT LATERAL.
2. MAXIMUM HEIGHT FOR 4" PROTO II = 6'–0": MAX. HEIGHT FOR 6" PROTO II = 10'–0". MAX. HEIGHT FOR 8" PROTO II = 13'–4" COMBINATION WALLS MAY BE USED.
3. MAXIMUM DIP FOOTING SPACING = 16'–0": MINIMUM SPACING = 3'–4". TOLERANCE IS 12"± BUT THE NUMBER OF DIP FOOTINGS MUST REMAIN THE SAME FOR A GIVEN LENGTH OF WALL.
4. POST TENSION ROD IS INDEPENDENT OF DIP OR PIER SPACING.
5. POST TENSION ROD SPACING TOLERANCE IS ±8" BUT THE NUMBER OF RODS FOR A GIVEN LENGTH OF WALL MUST REMAIN THE SAME.
6. 13"ø x 4'–9" DEEP CIRCULAR PIER FOOTING WITH 2 #4 VERT, MAY BE USED IN LIEU OF DIP FOOTING SPACING AND SETTING PAD TO REMAIN THE SAME.

CARUSO TURLEY SCOTT INC.
consulting structural engineers
1215 W. Rio Salado Pkwy Suite 200
Tempe, Arizona 85281
(480) 774-1700
(480) 774-1701 FAX

REGISTERED PROFESSIONAL ENGINEER C. A. ATKINSON S 4055 EXP. 12/31/09 STRUCTURAL STATE OF CALIFORNIA

PROTO II FENCE WALL
CVS PHARMACY STORE 7632
ELK GROVE, CA

PROTO–II TM WALL SYSTEMS
www.PROTO2.COM
41800 CASCADES COURT
TEMECULA, CA 92591
PH (951) 694–0783
FAX# (951) 694–8741

U.S. PATENTED 5,794,921
U.S. PATENTED 6,431,797
U.S. PATENTED 6,632,048
U.S. PATENTED 7,188,453
U.S. PATENTED 7,454,870
U.S. PATENTED 7,461,487

4", 6", AND 8" THICK POST–TENSIONED MASONRY WALLS
(MAY ONLY BE INSTALLED BY APPROVED AND CERTIFIED INSTALLERS)

TRACKING NUMBERS:
08–115–6100
08–115–6200

JOB NUMBER: 09–115–6365
DRAWN: PJ
ENGINEER: KAR
CHECKED: APB
SCALE: AS NOTED
DATE: 4/09/09
SHEET: 1 OF 1

C:\Documents and Settings\dft10\My Documents\P.J\09115-6365\09115-6365.dwg, S1, 4/9/2009 1:06:31 PM, dft10

AS-BUILT

PROPOSED 12' MULTI USE TRAIL, TYP.

EQUESTRIAN TRAIL

PERIMETER PLANTING TO BE INSTALLED IN PHASE 1

OVERHEAD UTILITY EASEMENT, TYP.

PHASE 2

CVS BLDG

STREET LIGHT & TRAFFIC SIGNAL

MONUMENT SIGN

PORTABLE BUILDING

SHED

SEE SHEET L-2 FOR PLANTING LEGEND & NOTES

NOTES

SYMBOL	REFERENCE NOTES	QTY
	HATCHED AREAS SHALL HAVE A CLEAR ZONE FOR VISIBILITY 42" TO 72" FROM PAVEMENT AT ALL TIMES.	1,641 SF

NORTH

20 0 10 20 40

(SCALE IN FEET)
1 inch = 20 ft.

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

BY APPROVED DATE

REV

DATE: AS BUILT 5/10/2010
SCALE: H: 1"=20' V: ---
DRAWN BY: A. KRINGEL
DESIGNED BY: A. KRINGEL
CHECKED BY: M. MATHES

JACOBS
180 PROMENADE CIR. STE 300
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR

SHOPS AT CALVINE
PLANTING PLAN

CALIFORNIA

CITY OF ELK GROVE

PROJECT NO: 333540

L-01 L-07

SHEET 22 OF 28

P:\Projects\333540\011\zbdrawings\333540.011_00DP\On Site CD's\Planting L-1to L-4.dwg 5-26-10 01:52:53 PM andersonsg

PLANT SCHEDULE

TREES	CODE	BOTANICAL	COMMON	SIZE	QTY	REMARKS
	AG	ACER RUBRUM `OCTOBER GLORY` TM	OCTOBER GLORY MAPLE	24"BOX	21	
	AS	ARBUTUS UNEDO	STRAWBERRY TREE	15 GAL	6	
	LI	LAGERSTROEMIA INDICA `CATAWBA`	CATAWBA TREE CRAPE MYRTLE	15 GAL	11	
	LS	LAURUS NOBILIS `SARATOGA`	SWEET BAY	15 GAL	11	
	QA	QUERCUS AGRIFOLIA	COAST LIVE OAK	24"BOX	3	
	QS	QUERCUS SHUMARDII	SHUMARD RED OAK	24"BOX	3	
	SS	SEQUOIA SEMPERVIRENS	COAST REDWOOD	15 GAL	19	

SHRUBS	CODE	BOTANICAL	COMMON	CONT	QTY	REMARKS
	AD	AGAPANTHUS AFRICANUS `PETER PAN`	DWARF BLUE LILY OF THE NILE	5 GAL	78	
	AL	ARCTOSTAPHYLOS PARRYANA	SNOW LODGE MANZANITA	5 GAL	28	A. `JOHN DOURLEY` IS AN ACCEPTABLE SUBSTITUTE
	HP	HEMEROCALLIS X `PARDON ME`	PARDON ME DAYLILY	5 GAL	71	
	HA	HETEROMELES ARBUTIFOLIA	TOYON	5 GAL	62	
	LM	LAVANDULA ANGUSTIFOLIA `MUNSTEAD`	MUNSTEAD ENGLISH LAVENDER	5 GAL	85	
	MR	MUHLENBERGIA RIGENS	DEER GRASS	5 GAL	95	
	PT	PARTHENOCISSUS TRICUSPIDATA `VEITCHII`	STAKED BOSTON IVY	5 GAL	94	STAKED
	RE	RHAMNUS CALIFORNICA `EVE CASE`	CALIFORNIA COFFEEBERRY	5 GAL	52	
	RS	RHAMNUS CALIFORNICA `SEA VIEW`	CALIFORNIA COFFEE BERRY	5 GAL	20	
	RI	RHAPHIOLEPIS INDICA `SPRING RAPTURE` TM	SPRING RAPTURE INDIAN HAWTHORNE	5 GAL	113	

GROUND COVERS	CODE	BOTANICAL	COMMON	CONT	QTY	REMARKS
	AE	ARCTOSTAPHYLOS UVA-URSI `EMERALD CARPET`	EMERALD CARPET MANZANITA	1 GAL@ 36" OC	227	
	TJ	TRACHELOSPERMUM JASMINOIDES	STAR JASMINE	1 GAL@ 36" OC	201	
	TS	TURF SOD	`BOLERO` DWARF TALL FESCUE	SOD	1,145 SF	AVAILABLE AT DELTA BLUEGRASS

PARKING LOT SHADE CALCULATION

SPECIES	SIZE (DIA.)	QTY.@100% SHADE/SF	QTY.@75% SHADE/SF	QTY.@50% SHADE/SF	QTY.@25% SHADE/SF		TOTAL SF
ACER RUBRUM `OCTOBER GLORY`	30'-35'	8x962 sf	2x722sf	6x481sf	0x240sf	=	12,026sf
ARBUTUS UNEDO	15'-20'	0x314sf	0x235sf	3x157sf	0x79sf	=	471sf
LAGERSTROEMIA INDICA `CATAWBA'	15'-20'	2x314sf	0x235sf	2x157sf	0x79sf	=	942sf
LAURUS NOBILIS `SARATOGA`	15'-20'	0x314sf	0x235sf	4x157sf	0x79sf	=	628sf
QUERCUS AGRIFOLIA	30'-35'	0x962 sf	0x722sf	3x481sf	0x240sf	=	1,443sf
SEQUOIA SEMPERVIRENS	25'-30'	0x707 sf	0x530sf	5x354sf	0x177sf	=	1,770sf

NOTE: 50% SHADING REQUIREMENT IS NOT MET FOR THIS PROJECT DUE TO THE OVERHEAD HIGH VOLTAGE LINES RUNNING THROUGH THE SITE. ADDITIONALLY, ONE SHADE TREE WAS REMOVED BECAUSE OF THE REALIGNMENT OF THE EQUESTRIAN TRAIL (REQUIRED BY CITY).

TOTAL SHADE PROVIDED:	17,280
TOTAL PARKING AREA :	41,122 s.f
SHADE REQUIRED:	20,561 s.f.
SHADE PROVIDED:	17,280 s.f.
PERCENT SHADE:	42%

CALCULATIONS

Project Trees (33% req. to be 24" Box.)	Parking Lot Trees (30% req. to be evergreen)	Site Calculation
Total Project Trees = 74 24" Box Trees = 27 (36%) 15 Gallon Trees = 47 (66%) Acer r. / Quercus a. / Quercus s.	Total Parking Lot Trees = 39 *Evergreen Parking Lot Trees = 15 (38%) Deciduous Parking Lot Trees = 24 (62%) *Arbutus u. / Laurus n. / Quercus a. / Sequoia s.	Total Project Area (not including Phase 2) = 85,986sf Landscape Area = 21,243sf (25%)

PLANTING NOTES

1. PLANT MATERIAL QUANTITIES SHOWN ON DRAWINGS ARE INFORMATIONAL ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ALL PLANT MATERIAL REQUIRED AS INDICATED IN THE DRAWINGS.

   RJ — PLANT KEY
   3 — QUANTITY

2. ALL PLANT MATERIALS SHALL COMPLY WITH FORM AND CHARACTERISTIC REQUIREMENTS AS SPECIFIED. ALL PLANT MATERIAL WILL COMPLY WITH ANSI Z601 "STANDARD FOR NURSERY STOCK" - LATEST EDITION.
3. IMMEDIATELY AFTER AWARD OF CONTRACT, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IF SPECIFIED PLANT MATERIAL IS NOT AVAILABLE FROM COMMERCIAL NURSERIES. IN CASE A PLANT IS NOT AVAILABLE, THE LANDSCAPE ARCHITECT WILL PROVIDE ALTERNATE PLANT MATERIAL SELECTIONS UPON REQUEST BY CONTRACTOR.
4. EXCAVATED PLANT PITS SHALL HAVE POSITIVE DRAINAGE. PLANT PITS WHEN FULLY FLOODED WITH WATER SHALL DRAIN WITHIN 2 HOURS OF FILLING. THE CONTRACTOR SHALL ENSURE ALL PLANT PITS HAVE POSITIVE DRAINAGE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR / REPLACEMENT OF DAMAGED UTILITIES, TO THE SATISFACTION OF THE OWNER OR GOVERNING AGENCY AND AT NO EXTRA COST TO THE OWNER
6. THE CONTRACTOR IS RESPONSIBLE FOR SOIL EROSION CONTROL MEASURES THAT MAY BE REQUIRED THROUGH THE DURATION OF THE CONTRACT PERIOD.
7. TREE LOCATIONS MAY REQUIRE ADJUSTING IN FIELD TO ACCOMMODATE LIGHT POLES, SPRINKLERS AND UTILITY STRUCTURES.
8. CONTRACTOR IS TO REVIEW THE SOIL ANALYSIS REPORT FOR THIS PROJECT FOR BOTH FERTILITY AND SAND/SILT/CLAY CONTENT. ALL PLANTING INSTALLATION INSTRUCTIONS THAT REQUIRE FERTILIZATION AND SOIL AMENDMENTS SHALL FOLLOW THE SOIL ANALYSIS RECOMMENDATIONS IN THE REPORT. SEE SHEET L-03.
9. BACK FILL FOR TREES, SHRUBS AND ONE GALLON GROUND COVERS: REFER TO SOILS REPORT RECOMMENDATION. TURF AREA SOIL PREPARATION: REFER TO SOILS REPORT RECOMMENDATION.
10. SLOW-RELEASE, 7 GRAM GRO-POWER FERTILIZER TABLETS (20-10-5) SHALL BE PLACED MID-ROOT BALL DEPTH ALONG SIDE PLANT ROOT BALL AT THE FOLLOWING RATES:
    24" BOX CONTAINER ---- 14 TABLETS
11. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED AT THE COMPLETION OF INSTALLATION FOR A GENERAL LANDSCAPE REVIEW. THE LANDSCAPE ARCHITECT SHALL REVIEW THE INSTALLATION FOR CONFORMANCE TO PLANS AND SPECIFICATIONS.
12. TURF AREAS SHALL BE MAINTAINED BY THE CONTRACTOR FOR 190 CALENDAR DAYS AFTER INSTALLATION. FOR FOLLOW UP MAINTENANCE, APPLY 3 POUNDS PER 1000 SF OF BALANCED FERTILIZER (16-8-8) ONE TIME DURING MAINTENANCE PERIOD. MOW TURF AT LEAST 4 TIMES DURING ESTABLISHMENT PERIOD. SEE PUBLICATION 8065 AT ANRCATALOG.UCDAVIS.EDU FOR FERTILIZATION INFO.
13. ROOT GUARDS SHALL BE INSTALLED WHERE TREES ARE PLANTED CLOSER TO 4' TO PAVED TREAD, PER ELK GROVE TRAILS MASTER PLAN. SEE DETAIL, SHEET L-04.
14. TOP DRESS ALL SHRUB AND GROUND COVER AREAS WITH 3" OF BARK MULCH. SUBMIT SAMPLE TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION FOR APPROVAL.

AS-BUILT

BY APPROVED DATE

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

REV

DATE: AS BUILT 5/10/2010
SCALE: H: --- V: ---
DRAWN BY: A. KRINGEL
DESIGNED BY: A. KRINGEL
CHECKED BY: M. MATHES

JACOBS
180 PROMENADE CIR. STE 300
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
PLANTING LEGEND & NOTES
CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
L-02 L-07
SHEET 23 OF 28

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SOIL ANALYSIS RECOMMENDATIONS

March 2, 2009

Jacobs
180 Promenade Circle #300
Sacramento, CA 95834
Attn: Adam Kringel

Project Name: CVS - Calvine & Bradshaw Project Number: 333540.011

The following recommendations are based on the results of soil analysis #56045 from A & L Western Agricultural Laboratories dated February 26, 2009.

SOIL PREPARATION:

Materials recommended per 1000 square feet
- 200 lbs. Gro-Power® Plus
- 40 lbs. soil sulfur
- 20 lbs. agricultural gypsum
- 3 cu. yd. Greenways Best ™ Soil Conditioner

Apply recommended materials and rototill a minimum of two directions, to a depth of 4-6 inches. After soil preparation, but prior to planting, irrigate with overhead irrigation so that a minimum of 1-3 inches of good quality water passes through the soil profile, beyond the root zone.

BACKFILL:

Materials recommended per cubic yard of mix
- 7 parts native on site soil, by volume
- 3 parts Greenways Best ™ Soil Conditioner, by volume
- 17 lbs. Gro-Power® Plus
- 2 lbs. soil sulfur
- 1 lb. agricultural gypsum
- 2 lbs. Gro-Power® Premium Green® Iron
- Gro-Power® Planting Tablets for extended feed/conditioning

Dig planting pits twice the width and once the depth of the root ball. Scarify walls of planting pit and thoroughly leach prior to planting. Fill pits with backfill mix to the depth of the root ball and irrigate thoroughly. Be sure entire root ball area is covered when planting. Drainage is critical.

- **Specialty plants may require special backfill mix and planting instructions.
- **Depending on plant palette or project, you might consider using a good quality import soil as a backfill source.
- **Care must be taken when planting larger specimens due to alkalinity and elevated lime in native soil conditions.

EVALUATION OF SOIL ELEMENTS:

1. pH is HIGH, indicating alkaline soil. Gro-Power®, soil sulfur and leaching will help to lower levels over time.
2. Lime level is MODERATELY ELEVATED; possible lime-induced iron chlorosis. Soil sulfur and leaching will help lower level over time.
3. EC (soluble salts) is LOW, within optimum range for most plant material.
4. Boron is LOW, no toxicity problem.
5. Exchangeable magnesium is HIGH and could possibly cause some drainage problems in this soil. Addition of gypsum in soil preparation will help to mitigate any poor drainage due to magnesium.
6. Major nutrients: Nitrogen is LOW - Phosphorus is MODERATE - Potassium is LOW. Gro-Power® products used at specified rates will provide adequate major and micronutrients for plant establishment and vigorous growth.

SPECIAL COMMENTS:

1. Selective plant palette important, re: alkalinity, elevated lime.
2. A good leaching/irrigation program is important to site.
3. Amendments are more effective when thoroughly mixed into the soil.
4. When planting native plant material, you might consider reducing backfill specifications for Gro-Power® Plus to 8 - 10 lbs. per cubic yard of mix.

Thank you for giving Gro-Power®, Inc. the opportunity to make recommendations on this project. If I may be of further assistance to you, or you have any questions regarding the above stated recommendations, please don't hesitate to contact me at (562) 754-0415.

Sincerely,

Jack L. Engberg

Jack L. Engberg
Product Consultant

JLE/ja

- Gro-Power®, Inc. is not affiliated in any way with Greenways Environmental, LLC. We recommend their composted organic materials because we believe they are the highest quality products available. If not readily available in your marketplace, we would recommend you substitute with nitrolized shavings or good quality compost containing no animal manures or bio solids.
- *Greenways Best ™ is a trademark of Greenways Environmental, LLC.
- Phone: (888) GRN-WAYS

A & L WESTERN AGRICULTURAL LABORATORIES

1311 WOODLAND AVE #1 • MODESTO, CALIFORNIA 95351 • (209) 529-4080 • FAX (209) 529-4736

REPORT NUMBER: 09-051-035 CLIENT NO: 1358

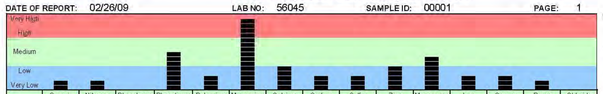
SEND TO: GRO-POWER INC
15085 TELEPHONE AVENUE
CHINO, CA 91710-9614

GROWER: JACOBS/CVS-CALVINE & BRADSHAW

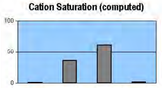
SUBMITTED BY: ADAM KRINGEL

Graphical Soil Analysis Report

DATE OF REPORT: 02/26/09 LAB NO: 56045 SAMPLE ID: 00001 PAGE: 1

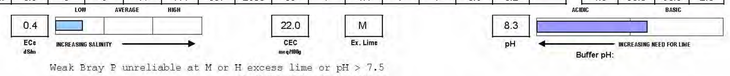


Percent Cation Saturation (computed)



Analyte	Organic Matter %	Nitrogen NO_3-N ppm	Phosphorus Weak Bray ppm	Phosphorus $NaHCO_3$-P ppm	Potassium K ppm	Magnesium Mg ppm	Calcium Ca ppm	Sodium Na ppm	Sulfur SO_4-S ppm	Zinc Zn ppm	Manganese Mn ppm	Iron Fe ppm	Copper Cu ppm	Boron B ppm	Chloride Cl ppm
Results	0.9	3	6	11	111	957	2683	99	7	1.1	7	7	0.6	0.2	

Potassium K %	Magnesium Mg %	Calcium Ca %	Sodium Na %
1.3	35.8	60.9	2.0



Weak Bray P unreliable at M or H excess lime or pH > 7.5

Soil Fertility Guidelines

CROP: LANDSCAPE RATE: lb/1000 sq ft NOTES:

Dolomite (70 score)	Lime (70 score)	Gypsum	Elemental Sulfur	Nitrogen N	Phosphate P_2O_5	Potash K_2O	Magnesium Mg	Sulfur SO_4-S	Zinc Zn	Manganese Mn	Iron Fe	Copper Cu	Boron B	
		20	40	3.7	2.0	4.5					*		*	

COMMENTS:
* ACIDIFICATION of high pH soils could improve soil environment. Compare different sources of acidifying materials, but be aware that sulfate-sulfur (as shown on report) has NO acidifying power.
* BORON may not necessarily be deficient in the soil, and it is hard to correct an excessive application. Therefore, apply boron only if confirmed deficient through a leaf analysis.
YOUR SUPPLIER will recommend to you choice, rate and method of application of fertilizer materials and amendments.
ORGANIC MATTER levels maintained above 2.0 percent will provide an improved soil structure and a more sustained release of nutrients. Follow supplier's instructions where levels are low.

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Mike Buttress, CPAg
A & L WESTERN LABORATORIES, INC

INTERPRETATION OF ANALYSIS

NAME: Jacobs LAB NO.: 56045 DATE: 02/26/09

PROJECT: CVS

Page 1 of 2

TEXTURES*		
[ ] SANDY SOILS	[ ] LOAM SOILS	[X] CLAY SOILS
Coarse textured, low water retention, infertile; fertilizer leaches easily and needs frequent irrigation. Organic matter benefits water and nutrient retention.	Have desirable properties of clay and sand, good moisture and fertilizer retention, not too sticky or droughty.	Sticky; high water retention, slow water penetration, compacts easily; high fertilizer retention. Need organic matter to keep workable.
Sand, Loamy Sand	Sandy Loam, Loam, Silt Loam, Silty Clay Loam, Sandy Clay Loam, Clay Loam	Sandy Clay, Silty Clay, Clay

*Texture estimate derived from CEC value. For more precise texture information, further testing is required. Contact lab for information.

LIME (amount of solid lime distributed in soil)		
[ ]	HIGH	Plants sensitive to "Lime-induced Iron Chlorosis", (i.e. azalea, gardenia, liquid amber, roses, etc.) must have corrective chemical added to soil.
[X]	MODERATE	Plants sensitive to "Lime-induced Iron Chlorosis", affected but not as severely as "high" readings. Corrective chemical may be added.
[ ]	LOW	Plants sensitive to "Lime-induced Iron Chlorosis", not affected. No corrective chemical needed.

pH	
8.3	Normal pH values for this area vary from 6.5 to 8.0, however variations in either direction may exist. Soil amendments may be recommended to help bring the soil pH into a more optimal range. To lower pH, soil sulfur or an equivalent acid-forming chemical recommended. To raise pH, lime is usually recommended.

EC			BORON (ppm)		
Electrical Conductivity of the soil saturation extract is a measure of the total salts in the soil. This can be related to plant growth as follows: (Units are mmhos/cm @ 25 degrees C)			Is expressed as ppm in the saturation extract. A small amount of boron is essential for plant growth, but a concentration slightly above the optimum is toxic for plants.		
[X]	0 – 1.9	No damage from salts.	[X]	0.0 - .6	Not toxic for any, but may be too low for some.
[ ]	2 - 3.9	Sensitive plants may be damaged.	[ ]	.7 - 1.4	Sensitive plants restricted.
[ ]	4 - 7.9	Many plants affected.	[ ]	1.5 - 4.9	Many plants restricted.
[ ]	8 - 16	Most plants damaged.	[ ]	5.0 - 10.0	Only tolerant plants satisfactory.
[ ]	over 16	Few plants survive.	[ ]	10.0 - over	Few plants survive.

PERCENT SODIUM SATURATION		
Is the degree to which the soil exchange complex is saturated with sodium. Exchangeable sodium has two effects: (1) Reduced permeability and (2) Toxicity of sensitive plants.		
[X]	Below 5	Generally no permeability problem due to sodium. However, sodium sensitive plants may show leaf burn.
[ ]	5 - 15	Possible permeability problems with clay loams and clays. (C.E.C. 15 – 30)
[ ]	Above 15	Permeability problems are likely on all mineral soil except some sands and loam sands.

NUTRIENTS						
NITROGEN (N)	[X]	LOW	[ ]	MODERATE	[ ]	HIGH
PHOSPHORUS (P_2O_5)	[ ]	LOW	[X]	MODERATE	[ ]	HIGH
POTASSIUM (K_20)	[X]	LOW	[ ]	MODERATE	[ ]	HIGH
	Definite need for fertilizer nutrient add at recommended rate for plant soil in question		Fertilizer nutrients are present in adequate amounts; maintain at this level.		There is no need for adding fertilizer nutrients at this time.	

ORGANIC MATTER (Percent as designated on the soil analysis)*		
[ ]	VERY LOW	0.0 – 0.7
[X]	LOW	0.8 – 1.7
[ ]	MODERATE	1.8 – 3.2
[ ]	HIGH	3.3 – 4.2
[ ]	VERY HIGH	4.3 – …….
*Variables may exist depending upon the soil type and the source of organic matter that is being measured, however the above table will give a good estimate of the percentage of organic matter present.		

WATER PERCOLATION RATE		(INCHES/HOUR)*
[ ]	VERY RAPID	MORE THAN 20.00
[ ]	RAPID	6.00 – 20.00
[ ]	MODERATELY RAPID	2.00 – 6.00
[ ]	MODERATE	.60 – 2.00
[ ]	MODERATELY SLOW	.20 - .60
[X]	SLOW	.06 - .20
[ ]	VERY SLOW	LESS THAN .06
*Variables may exist depending upon the soil type and the source of organic matter that is being measured, however the above table will give a good estimate of the percentage of organic matter present.		

Percolation rate is an estimate derived from texture. For more specific rates, further testing is required. Contact lab for information.

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AS-BUILT

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

BY	APPROVED	DATE

DATE: AS BUILT 5/10/2010
SCALE: H: --- V: ---
DRAWN BY: A. KRINGEL
DESIGNED BY: A. KRINGEL
CHECKED BY: M. MATHES

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SACRAMENTO, CA 95834
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IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
SOILS REPORT
CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
L-03 L-07
SHEET 24 OF 28

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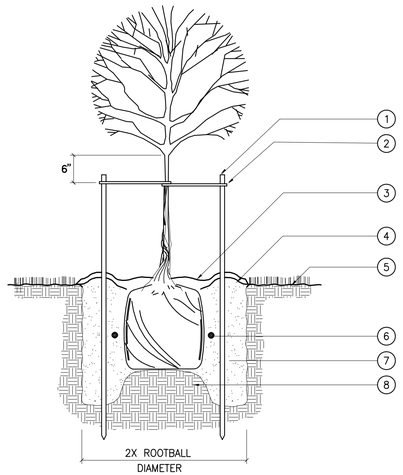
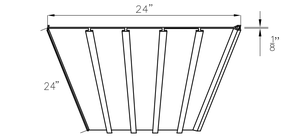
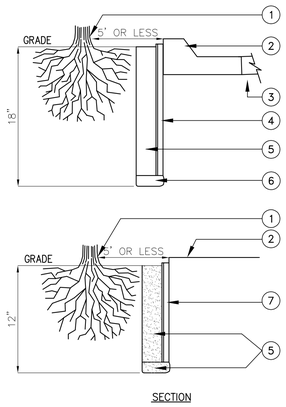


1. TREE STAKES: 2"ø X 8'-0" PRESSURE-TREATED LODGEPOLE PINE, 2 PER TREE.
2. RUBBER TREE TIES: 2 PER STAKE. WRAP NO WIRE AROUND TRUNK OR LIMB.
3. MULCH: 3" LAYER.
4. 3" HIGH EARTH WATERING BERM IN PLANTER AREA ONLY.
5. FINISH GRADE. PLANT TREE WITH ROOT CROWN 2" ABOVE FINISH GRADE. SLOPE AWAY FROM CROWN.
6. PLANT TABS, SEE PLANTING NOTES.
7. PREPARED BACKFILL. SEE SOILS REPORT RECOMMENDATIONS.
8. PLACE ROOTBALL ON SMALL MOUND OF TAMPED/ FIRM TOPSOIL.

A TREE PLANTING
NOT TO SCALE



BARRIER PANEL



SECTION

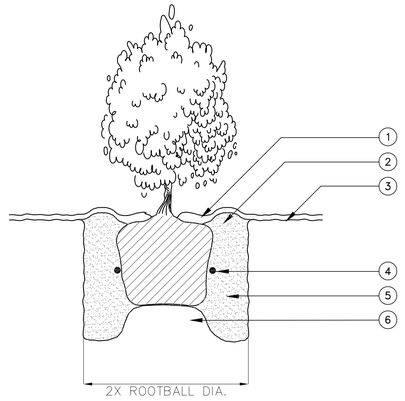
KEY NOTES:

1. NEW OR EXISTING TREE
2. CONCRETE CURB
3. ASPHALT
4. 18" ROOT BARRIER
5. BACKFILL
6. NATIVE MATERIAL BACKFILL
7. 12" ROOT BARRIER

NOTE OF LINEAR APPLICATION:

1. 12" DEPTH ROOT CONTROL BARRIER WHEN TREE IS PLACED WITHIN 4 FEET OF SIDEWALK PAVING, 18" DEPTH WHEN TREE IS WITHIN 4 FEET OF ROADWAY CURB AND GUTTER (ON ROADWAY SIDE ONLY). ROOT BARRIER PANELS ARE TO BE 20' IN LENGTH CENTERED ON TREE TRUNK RUNNING PARALLEL TO PAVING. IF DISTANCE FROM CENTER OF TREE IS LESS THAN 10', ADD PANELS AROUND PERIMETER OF PLANTING BED.

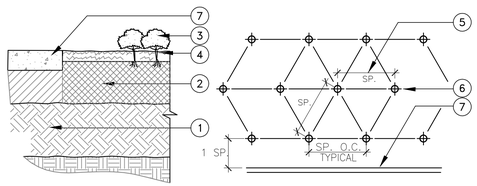
B ROOT BARRIER PANEL
NOT TO SCALE



KEY NOTES:

1. 3" LAYER OF APPROVED MULCH
2. 2" HIGH EARTH MOUND
3. FINISH GRADE: PLANT ROOT CROWN 1" ABOVE FINISH GRADE
4. FERTILIZER TABLETS- SEE PLANTING NOTES
5. PREPARED BACKFILL, SEE PLANTING NOTES
6. PLACE ROOTBALL ON SMALL MOUND OF TAMPED/ FIRM TOPSOIL

C SHRUB PLANTING
NOT TO SCALE

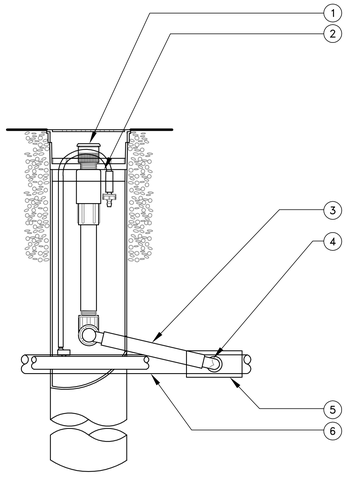


SECTION PLAN

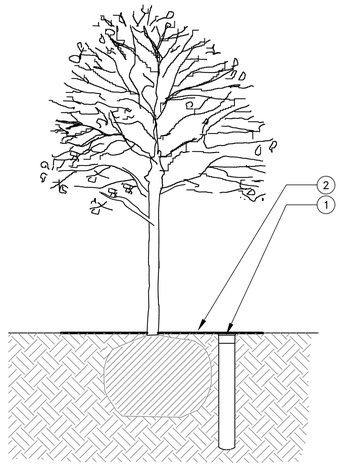
KEY NOTES:

1. RIP OR SCARIFY TO 12"
2. ADD AMENDMENTS AND FERTILIZER PER SPECIFICATIONS AND ROTOTILL
3. GROUNDCOVER: TRIANGULAR SPACING (SEE PLAN FOR SPACING)
4. ADD 3" OF APPROVED MULCH
5. GROUNDCOVER SPACING: SEE PLANTING LEGEND
6. GROUNDCOVER CENTERS
7. WALL, WALK OR EDGE OF GROUNDCOVER PLANTING

D GROUNDCOVER PLANTING
NOT TO SCALE



E TREE ROOT WATERING SYSTEM
NOT TO SCALE



KEY NOTES:

1. ROOT WATERING SYSTEM: PER IRRIGATION LEGEND
2. FINISH GRADE
3. SWING PIPE, 12-INCH SWING ASSEMBLY
4. 1/2- INCH MALE NPT INLET
5. PVC SCH 40 TEE OR ELL
6. LATERAL PIPE

AS-BUILT

BY	APPROVED	DATE

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DATE: AS BUILT 5/10/2010
SCALE: H: --- V:---
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IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
PLANTING DETAILS
CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
L-04 L-07
SHEET 25 OF 28

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IRRIGATION P.O.C. NOTE

CONNECT TO 2" MAINLINE THAT IS TO BE INSTALLED UNDER OFF SITE PLANS. CONNECT TO TWO STUBS LOCATED AT EAST AND WEST ENDS OF OFF SITE LANDSCAPE. SEE OFF SITE PLANS. USE CONTROLLER FROM OFF-SITE CONSTRUCTION. THIS IRRIGATION SYSTEM IS DESIGNED FOR A MINIMUM OPERATING PRESSURE OF 30 PSI AT EACH HEAD WITH A MAXIMUM DEMAND OF 35 GPM.

SEE SHEET L-6 FOR IRRIGATION LEGEND & NOTES

NORTH

(SCALE IN FEET)
1 inch = 20 ft.

AS-BUILT

BY	APPROVED	DATE

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

REV	DATE

DATE: AS BUILT 5/10/2010
SCALE: H: 1"=20' V:--
DRAWN BY: A. KRINGEL
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IMPROVEMENT PLANS FOR

SHOPS AT CALVINE
IRRIGATION PLAN

CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540

L-05 L-07

SHEET 26 OF 28

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IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
Q T H TT TQ F	TORO O-T-570Z-6P PRX COM 5 SERIES TURF SPRAY, 6" POPUP WITH X-FLOW SHUT-OFF DEVICE AND PRESSURE REGULATOR, WITH CHECK VALVE, PRECISION SERIES SPRAY NOZZLES.	12	30
Q T H TT TQ F	TORO O-T-570Z-6P PRX COM 8 SERIES	34	30
Q T H TT TQ F	TORO O-T-570Z-6P PRX COM 10 SERIES	1	30
Q T H TT TQ F	TORO O-T-570Z-6P PRX COM 12 SERIES	1	30
Q T H TT TQ F	TORO O-T-570Z-12P PRX COM 5 SERIES SHRUB SPRAY, 12" POPUP WITH X-FLOW SHUT-OFF DEVICE AND PRESSURE REGULATOR, CHECK VALVE, PRECISION SERIES SPRAY NOZZLES.	21	30
Q T H TT TQ F	TORO O-T-570Z-12P PRX COM 8 SERIES	19	30
Q T H TT TQ F	TORO O-T-570Z-12P PRX COM 10 SERIES	6	30
Q T H TT TQ F	TORO O-T-570Z-12P PRX COM 12 SERIES	10	30
Q T H TT TQ F	TORO O-T-570Z-12P PRX COM 15 SERIES	13	30
	HUNTER RZWS-18-25 18" LONG RZWS WITH INSTALLED 0.25 GPM BUBBLER, 1/2" SWING JOINT FOR CONNECTION TO 1/2" PIPE	25	30
	HUNTER RZWS-18-50 18" LONG RZWS WITH 0.50 GPM BUBBLER, 1/2" SWING JOINT FOR CONNECTION TO 1/2" PIPE	32	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD XCZ-100-B-COM DRIP CONTROL KIT, 1" PEBS VALVE, 1" BASKET FILTER, AND 40PSI PRESSURE REGULATOR, 1" BALL VALVE.	3
	DRIP ZONE CONTROL PVC LATERAL TO 1/2" DRIP TUBING WITH RISER	16
	AREA TO RECEIVE DRIP EMITTERS RAIN BIRD XERI-BUG XB-1032 SINGLE OUTLET PRESSURE COMPENSATING DRIP EMITTER, 10-32 THREADED INLET, BLUE=0.5GPH, BLACK=1.0GPH, RED=2.0GPH. Emitter Notes: 1 gal plant to receive 2 10PC1032 emitters. 5 gal plant to receive 3 10PC1032 emitters.	15,821 S.F.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PEB-PRS-D ELECTRIC REMOTE CONTROL VALVE WITH PRESSURE REGULATOR.	5
	RAIN BIRD 44LRC 1" QUICK COUPLER VALVE, TWO PIECE BODY, LOCKING COVER	8
POC	POINT OF CONNECTION CONNECT TO EXISTING MAINLINE STUBS FROM OFF-SITE CONSTRUCTION AT 2 LOCATIONS AT CALVINE RD.	
	EXISTING IRRIGATION MAINLINE: 2" ALL EXISTING (OFF-SITE) IRRIGATION EQUIPMENT SHOWN IN GRAY	
M	EXISTING 1-1/2" WATER METER - SEE OFF-SITE PLANS	
BF	EXISTING WILKINS 975XL 1-1/2" REDUCED PRESSURE BACKFLOW DEVICE - SEE OFF-SITE PLANS	
C	EXISTING ET WATER SMART CONTROLLER 205W MOUNTED IN STRONG BOX SB-18CR POWDER COATED STEEL ENCLOSURE ON CONCRETE PAD. SEE-OFF SITE PLANS.	
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21 ONLY LATERAL TRANSITION PIPE SIZES 1" AND ABOVE ARE INDICATED ON THE PLAN, WITH ALL OTHERS BEING 3/4" IN SIZE.	4,266 L.F.
	IRRIGATION MAINLINE: PVC SCHEDULE 40	1,827 L.F.
	PIPE SLEEVE: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE. PIPE SLEEVE SIZE SHALL ALLOW FOR IRRIGATION PIPING AND THEIR RELATED COUPLINGS TO EASILY SLIDE THROUGH SLEEVING MATERIAL. EXTEND SLEEVES 18 INCHES BEYOND EDGES OF PAVING OR CONSTRUCTION.	466 L.F.

Valve Callout
#↓ — Valve Number
— Valve Flow
#" — Valve Size

IRRIGATION SCHEDULE

ZONE NUMBER	HYDROZONE	VALVE MODEL	TYPE	GPM	PRECIP RATE IN/HR	MIN/DAY	DAY/WEEK	MIN/WEEK	IN./WEEK	GAL./WEEK	GAL./DAY
1	SHRUB-LOW	RAIN BIRD PEB-PRS-D	SHRUB DRIP	7.61	NA	60	1	60	NA	457	457
2	SHRUB-MEDIUM	RAIN BIRD PEB-PRS-D	SHRUB SPRAY	16.6	1.00	25	2	50	0.83	830	415
3	TURF-HIGH	RAIN BIRD PEB-PRS-D	TURF SPRAY	13.4	1.00	30	3	90	1.5	1,206	402
4	TREES-MEDIUM	RAIN BIRD PEB-PRS-D	TREE BUBBLERS	10.0	NA	45	1	45	NA	450	450
5	SHRUB-LOW	RAIN BIRD PEB-PRS-D	SHRUB DRIP	4.4	NA	60	1	60	NA	262	262
6	SHRUB-LOW	RAIN BIRD PEB-PRS-D	SHRUB SPRAY	8.5	1.00	15	2	30	0.5	255	128
7	TREES-MEDIUM	RAIN BIRD PEB-PRS-D	TREE BUBBLERS	12.3	NA	45	1	45	NA	554	554
8	SHRUB-LOW	RAIN BIRD PEB-PRS-D	SHRUB DRIP	19.2	NA	60	1	60	NA	1,152	1152
								TOTAL WEEKLY WATER USE		5,165	GALLONS
								AVERAGE DAILY WATER USE		738	GALLONS

NOTE: THIS SCHEDULE PRESENTS POTENTIAL WATERING TIMES BASED ON MID SUMMER WEATHER, I.E. MAXIMUM WATER USAGE. CONTROLLER WILL ADJUST TIMES BASED ON ACTUAL WEATHER.

IRRIGATION NOTES

1. THIS SYSTEM IS DESIGNED FOR OPERATING PRESSURE OF 30 PSI AT SPRAY HEADS AND A MAXIMUM DEMAND OF 35 GPM. THE CONTRACTOR SHALL VERIFY THE EXISTING WATER PRESSURE ON SITE PRIOR TO CONSTRUCTION. REPORT TO THE LANDSCAPE ARCHITECT, ANY DIFFERENCES GREATER THAN 10% BETWEEN THE WATER PRESSURE SHOWN ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT EACH POINT OF CONNECTION. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
2. ALL IRRIGATION EQUIPMENT SHALL BE NEW AND INSTALLED IN SUCH A MANNER THAT THE NEW IRRIGATION SYSTEM WILL BE A COMPLETE AND EFFICIENT SYSTEM.
3. INSTALL ALL MATERIALS AND EQUIPMENT AS SHOWN ON THE PLANS AND CONSTRUCTION DETAILS.
4. SLEEVE ALL PRESSURE MAINLINE, LATERAL LINES AND CONTROL WIRES UNDER ALL PAVING WITH SCHEDULE 40 PVC PIPE (SIZE PER IRRIGATION SCHEDULE). IN ADDITION TO THE SLEEVES SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF SLEEVES OF SUFFICIENT SIZE UNDER ALL PAVED AREAS.
5. FLUSH AND ADJUST ALL LINES, SPRAY HEADS, FLOOD BUBBLERS AND VALVES FOR OPTIMUM PERFORMANCE. ADJUST ALL NOZZLES TO ELIMINATE OVERSPRAY ON ADJACENT WALKS, STREETS, ETC.
6. CONTACT LANDSCAPE ARCHITECT TO DISCUSS AND RECEIVE APPROVAL FOR ALL FIELD ADJUSTMENTS THAT WILL IMPACT THE DESIGN AND EFFICIENCY OF THE SYSTEMS. IF THE CONTRACTOR HAS NOT RECEIVED WRITTEN AUTHORIZATION TO CONDUCT FIELD ADJUSTMENTS, THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS/ADJUSTMENTS.
7. THE FINAL LOCATION OF THE IRRIGATION CONTROLLER SHALL BE APPROVED BY OWNER.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM/HER SELF WITH THE SITE. THE CONTRACTOR SHALL USE EXTREME CARE WHEN EXCAVATING OR WORKING NEAR EXISTING UTILITIES AND SHALL BE RESPONSIBLE IF ANY DAMAGE IS INCURRED. PRIOR TO ANY CONSTRUCTION THE CONTRACTOR SHALL CONTACT ALL APPLICABLE AGENCIES AND U.S.A. TO LOCATE ALL EXISTING UTILITIES.
9. IRRIGATION CONTRACTOR SHALL COORDINATE AND INSTALL ALL IRRIGATION SLEEVES PRIOR TO CONCRETE FLATWORK AND ASPHALT INSTALLATION.
10. IRRIGATION SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES, BY LICENSED CONTRACTORS AND EXPERIENCED WORKMEN. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND FEES RELATING TO HIS WORK.
11. TRENCHING IS TO BE OF SUFFICIENT DEPTH TO PROVIDE 18" OF COVER OVER IRRIGATION MAIN LINES AND CONTROL WIRE, AND 12" OF COVER OVER ALL LATERAL LINES. ALL LINES UNDER PAVING SHALL BE BURIED WITH 24" OF COVER. CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT WITH ANY DISCREPANCIES.
12. INSTALL SPRINKLER HEADS 2" CLEAR OF CURBS, PAVING, HEADERS, OR UTILITY BOXES.
13. FLUSH MAIN LINES PRIOR TO THE INSTALLATION OF REMOTE CONTROL VALVES, OR QUICK COUPLER VALVES. FLUSH LATERAL LINES PRIOR TO THE INSTALLATION OF IRRIGATION HEADS INCLUDING EMITTER DEVICES.
14. PRESSURE TEST MAIN LINES UNDER OPERATING PRESSURE PRIOR TO BACKFILLING.
15. IRRIGATION CONTROL WIRE SHALL BE NO. 14-1 AWG UF (UL) APPROVED FOR DIRECT BURIAL. WIRE COLORS FOR THIS PHASE OF THE WORK SHALL BE AS FOLLOWS: COMMON WIRE - WHITE, PILOT WIRES - RED, ALL SPARE WIRES - YELLOW.
16. THE IRRIGATION SYSTEM IS DRAWN DIAGRAMMATICALLY. ALL IRRIGATION EQUIPMENT SHOWN WITHIN PAVED AREAS ARE FOR CLARITY ONLY. INSTALL ALL EQUIPMENT IN PLANTING AREAS, TYP.
17. ALL WIRE SPLICES ARE TO BE MADE WITHIN A VALVE BOX. SPLICES ARE TO BE MADE WITH A COPPER CRIMP TYPE CONNECTOR AND INSTALLED WITHIN A '3-M' NO. DBY SEALING PACK.
18. REMOTE CONTROL VALVE BOXES ARE TO BE INSTALLED FLUSH WITH FINISH GRADE IN LAWN AREAS. ALIGN VALVE BOXES WITH ADJACENT PAVEMENT EDGES, ARCHITECTURAL FEATURES, OR ADJACENT VALVE BOXES, AS APPLICABLE FOR A NEAT APPEARANCE. VALVE BOXES ARE TO CONFORM WITH FINISH GRADES.
19. ALL REMOTE CONTROL VALVES SHALL HAVE A PERMANENT VALVE TAG (AS MANUFACTURED BY 'T. CHRISTY' OR APPROVED EQUAL) ATTACHED TO THE VALVE INDICATING THE CONTROLLER STATION NUMBER.
20. CONTRACTOR SHALL WARRANT THAT THE IRRIGATION SYSTEM WILL BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF 190 DAYS AFTER FINAL ACCEPTANCE OF THE WORK, AND SHALL REPAIR OR REPLACE ANY DEFECTIVE MATERIALS OR WORK AT NO ADDITIONAL COST TO THE OWNER. THE ABOVE MENTIONED WARRANTY SHALL BE IN WRITING.
21. SEE CIVIL PLANS FOR SYMBOL LEGEND (LIGHTS, DI'S, ETC.).
22. USE CONTROLLER FROM OFF-SITE IRRIGATION SYSTEM. SEE OFF-SITE PLANS. CONTROLLER SHALL BE SET SUCH THAT FLOW THROUGH METER IS NOT GREATER THAN 50 GPM.
23. PROJECT OWNER IS RESPONSIBLE FOR MAINTENANCE OF BOTH ON AND OFF SITE IRRIGATION AND PLANTING.

DRIP IRRIGATION NOTES

1. ALL 1/2" TUBING SHALL BE INSTALLED ON GRADE AND STAKED TO FINISH GRADE. ENSURE THAT 1/2" TUBING IS FULLY COVERED BY MULCH.
2. 1/2" TUBE IN DRIP ZONE A IS INTENDED TO RUN TO EVERY PLANT. IF NECESSARY, INSTALL 1/4" TUBING (MAXIMUM OF 3') FROM 1/2" TUBING TO EMITTERS AT PLANTS. ADJUST LOCATION OF 1/2" POLY TUBING AS REQUIRED TO MAINTAIN A 3' MAXIMUM LENGTH OF 1/4" DISTRIBUTION TUBING.
3. INSTALL 2" LENGTH OF 1/4" DISTRIBUTION TUBING ON BARBED OUTLET OF EMITTER AND INSTALL RAINBIRD DBC-025 DIFFUSER BUG CAP AT END. SECURE 1/4" DISTRIBUTION TUBING WITH 1/4" TUBING STAKE AS REQUIRED. SEE DETAILS.
4. DIFFUSER BUG CAP SHALL BE PLACED WITHIN 6" OF PLANT STEM.

SACRAMENTO COUNTY WATER AGENCY
IRRIGATION/LANDSCAPING PLAN WATER NOTES (JANUARY 2008)

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE SACRAMENTO COUNTY STANDARD CONSTRUCTION SPECIFICATIONS (JANUARY 2008), AND IMPROVEMENT STANDARDS (OCTOBER 2006), UNLESS OTHERWISE SHOWN OR DESCRIBED ON THE PLANS. FOR IRRIGATION SYSTEMS UTILIZING NON-POTABLE (RECYCLED) WATER, REFER TO SECTION 41-22 RECYCLED WATER OF THE SACRAMENTO COUNTY STANDARD CONSTRUCTION SPECIFICATIONS.
2. THE CONTRACTOR SHALL NOTIFY SACRAMENTO COUNTY CONSTRUCTION MANAGEMENT DEAN GAGE (NORTH AREA) OR MIKE LEE (SOUTH AREA) AT 875-2700, FIVE (5) WORKING DAYS IN ADVANCE OF BEGINNING WORK.
3. PLANS SHALL BE RESUBMITTED FOR APPROVAL IF CONSTRUCTION OF WATER FACILITIES HAS NOT BEGUN WITHIN ONE (1) YEAR AFTER THE APPROVAL DATE OF THESE IMPROVEMENT PLANS.
4. ALL WORK SHALL BE INSPECTED BY SACRAMENTO COUNTY CONSTRUCTION MANAGEMENT PRIOR TO BACKFILLING.
5. THE CONTRACTOR SHALL NOTIFY THE SACRAMENTO COUNTY WATER AGENCY UNDERGROUND CONSTRUCTION & MAINTENANCE SECTION AT 875-7014 IN CASE OF AN EMERGENCY.
6. A CONSTRUCTION WATER PERMIT IS REQUIRED FOR ANY WATER WITHDRAWN FROM NEWLY CONSTRUCTED OR EXISTING WATER DISTRIBUTION SYSTEM. WATER USE SHALL COMPLY WITH RULES AND REGULATIONS OF THE CONSTRUCTION WATER PERMIT. A TESTED AND APPROVED TEMPORARY BACKFLOW PREVENTION ASSEMBLY SHALL BE REQUIRED FOR CERTAIN INSTALLATIONS AS DETERMINED BY THE SACRAMENTO COUNTY WATER AGENCY. FAILURE BY THE CONTRACTOR TO OBTAIN AND DISPLAY A PERMIT WILL RESULT IN A $168 FINE FOR EACH OCCURRENCE.

   CONTACT JAMES SACAYANAN AT 875-5837 TO OBTAIN A CONSTRUCTION WATER PERMIT FIVE (5) WORKING DAYS IN ADVANCE OF BEGINNING WORK. THE CONTRACTOR SHALL HAVE ALL APPROVED PAPERWORK IN POSSESSION PRIOR TO CONNECTION TO EXISTING WATER SYSTEM FOR CONSTRUCTION WATER.
7. THE CONTRACTOR SHALL NOTIFY SACRAMENTO COUNTY CONSTRUCTION MANAGEMENT OR THE INSPECTOR FOR THE PROJECT'S WATER FACILITIES AT 875-2700, FIVE (5) DAYS IN ADVANCE OF CONNECTING TO THE EXISTING WATER SYSTEM SO THE INSPECTOR CAN ARRANGE FOR CLOSURE OF VALVES AND CUSTOMER NOTIFICATION OF SHUT DOWN PRIOR TO CONNECTION BEING MADE. THE METHOD OF CONNECTION TO THE EXISTING WATER MAIN(S) SHALL BE BY DIRECT CONNECTION, HOT TAP, OR CUT-IN AS SPECIFIED ON THESE PLANS. THE COUNTY WILL ARRANGE FOR CLOSURE OF VALVES AND CUSTOMER NOTIFICATIONS OF SHUTDOWN TO ALLOW CONNECTIONS TO THE WATER SYSTEM TO BE MADE. THE CONTRACTOR IS PROHIBITED FROM OPERATING VALVES THAT ARE NOT PART OF THIS PROJECT.

   THE CONTRACTOR SHALL DISINFECT AND FLUSH THE NEW WATER SYSTEM PRIOR TO CONNECTING TO EXISTING WATER SYSTEM PER SACRAMENTO COUNTY STANDARD CONSTRUCTION SPECIFICATIONS.
8. SERVICE CONNECTIONS TO AN EXISTING POTABLE OR NONPOTABLE WATER MAIN, OR TO AN EXTENSION OF AN EXISTING MAIN, SHALL BE MADE BY A QUALIFIED CONTRACTOR, AFTER PAYMENT OF ALL APPLICABLE FEES AND ISSUANCE OF A CONNECTION PERMIT. THE CONTRACTOR SHALL SCHEDULE AND PROCEED WITH THE SERVICE CONNECTION WITHOUT DELAY AND WITH MINIMUM INTERFERENCE TO EXISTING WATER AND FIRE SERVICES. AN INSPECTION BY SACRAMENTO COUNTY CONSTRUCTION MANAGEMENT OF ALL CONNECTIONS MADE BY THE CONTRACTOR IS REQUIRED PRIOR TO BACKFILLING.

   THE COUNTY RESERVES THE OPTION TO MAKE ALL WATER TAPS AFTER PAYMENT OF FEES AND ISSUANCE OF A CONNECTION PERMIT.
9. VALVES THREE INCHES (3") AND LARGER PLACED AT TEES, CROSSES, BENDS, AND REDUCERS SHALL BE FLANGED AND BOLTED TO THE FITTINGS.
10. UNLESS OTHERWISE SPECIFIED, PIPE JOINTS WILL NOT BE ALLOWED WITHIN SIX FEET (6') OF A VALVE, FITTING, OR HYDRANT. DEFLECTION OF PIPE WILL NOT BE ALLOWED WITHIN TEN FEET (10') OF ANY FITTING OR VALVE.
11. STANDARD PIPE LENGTHS (MINIMUM EIGHTEEN (18) TO TWENTY (20) FEET) SHALL BE USED FOR ALL HORIZONTAL AND VERTICAL DEFLECTIONS.
12. WATER METER BOXES SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE STANDARD DRAWING FOR THE SIZE OF METER, AND IN ACCORDANCE WITH NONPOTABLE (RECYCLED) WATER SPECIFICATIONS WHEN APPLICABLE.
13. THE REDUCED PRESSURE PRINCIPLE (RP) BACKFLOW PREVENTER SHALL BE LOCATED WITHIN FIVE (5) FEET OF THE WATER METER.
14. NO TREE SHALL BE PLANTED WITHIN FIVE (5) FEET OF ANY POTABLE OR NONPOTABLE WATER MAIN AS MEASURED FROM THE TRUNK OF THE TREE TO THE CENTER OF THE PIPE
15. TWO (2) SETS OF "AS-BUILT" PLANS SHALL BE SUBMITTED TO SACRAMENTO COUNTY CONSTRUCTION MANAGEMENT PRIOR TO ACCEPTANCE OF THE WATER SYSTEM BY THE COUNTY. ALL SHEETS SHALL BE STAMPED "RECORD DRAWING" OR "AS-BUILT".

RELATIVE WATER USE CALCULATION

WATER USE	PLANT CODE	SQ. FT.	WATER USE FACTOR
LOW	AE, AL, AS, HA, LI, LM, LS, MR, QA, RE, RI, RS	17,453 s.f.	17,453 x 0.4= 6,981
MEDIUM	AD, AG, HP, PT, QS, SS, TJ	2,329 s.f.	2,329 x 1.0= 2,329
HIGH	TS	5,192 s.f.	5,192 x 1.6= 8,307
	TOTALS:	21,243 s.f.	17,617

TOTAL PLANTING AREA: 21,243 s.f.
WATER USE FACTOR: 17,617 < 21,243
NOTE: AREAS INCLUDE OFF SITE PLANTING.

AS-BUILT

BY	APPROVED	DATE

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

REV

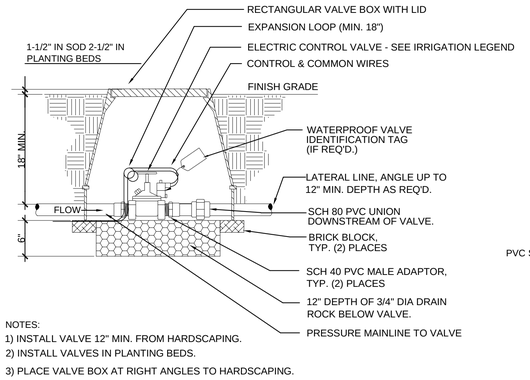
DATE: AS BUILT 5/10/2010
SCALE: H: --- V: ---
DRAWN BY: A. KRINGEL
DESIGNED BY: A. KRINGEL
CHECKED BY: M. MATHES

JACOBS
180 PROMENADE CIR., STE 300
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
IRRIGATION LEGEND & NOTES
CITY OF ELK GROVE CALIFORNIA

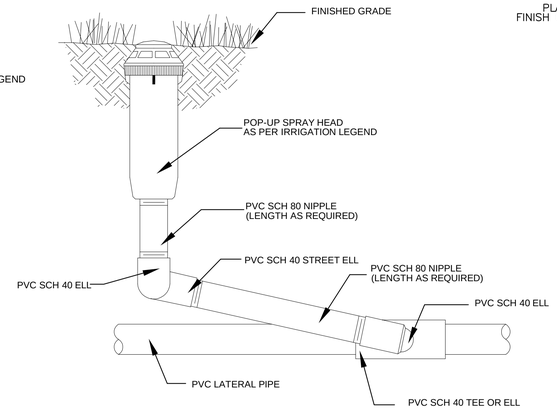
PROJECT NO: 333540
L-06 L-07
SHEET 27 OF 28

P:\Projects\333540\011\20rawings\333540.011_L0DP\On Site CD's\rrig and Details L-5 to L-7.dwg 5-26-10 01:53:41 PM andersonsg



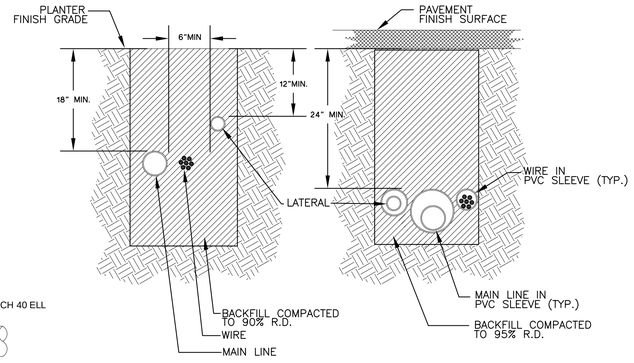
NOTES:
1) INSTALL VALVE 12" MIN. FROM HARDSCAPING.
2) INSTALL VALVES IN PLANTING BEDS.
3) PLACE VALVE BOX AT RIGHT ANGLES TO HARDSCAPING.

A REMOTE CONTROL VALVE
NOT TO SCALE

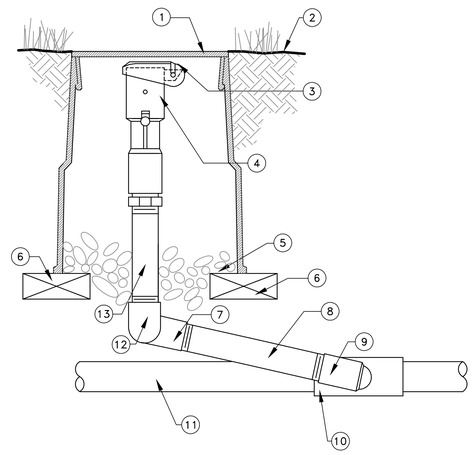


B POP UP SPRAY HEAD
NOT TO SCALE

1. TIE A LOOSE 20" LOOP IN WIRE AT CHANGES IN DIRECTION OF 30° OR GREATER. UNTIE AFTER CONNECTION ARE MADE.
2. ALL PIPE WIRE OR SLEEVES UNDER PAVEMENT TO BE INSTALLED PRIOR TO PAVEMENT AND AT A MIN. OF 24" DEEP BELOW PAVEMENT.
3. BUNDLE AND TAPE WIRE AT 10' INTERVALS.
4. WIRE UNDER PAVEMENT TO BE IN PVC SLEEVE.



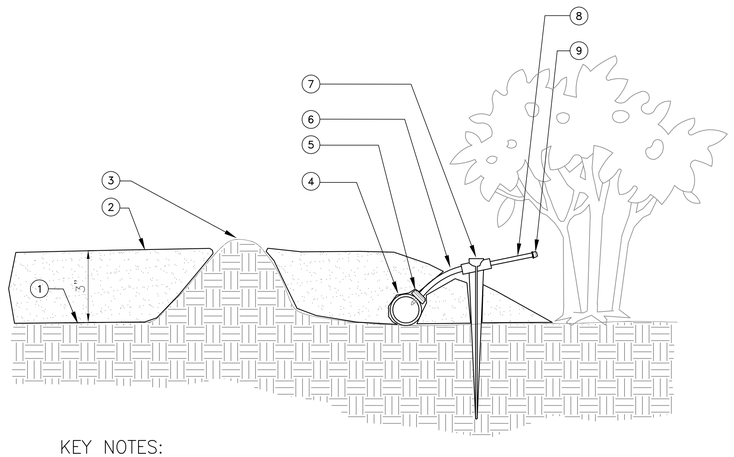
C IRRIGATION TRENCHING
NOT TO SCALE



KEY NOTES:

1. VALVE BOX WITH LOCKING COVER 10 INCH ROUND
2. FINISHED GRADE
3. TOP OF QUICK-COUPLER AS CLOSE TO VALVE BOX LID AS POSSIBLE
4. QUICK-COUPLER VALVE: RAINBIRD MODEL 44LRC
5. 3 INCH MINIMUM DEPTH OF 3/4" WASHED GRAVEL
6. BRICK
7. PVC SCH 40 ELL
8. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
9. PVC SCH 40 STREET ELL
10. PVC SCH 40 TEE OR ELL
11. PVC MAINLINE PIPE
12. PVC SCH 40 STREET ELL
13. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)

D QUICK COUPLING VALVE
NOT TO SCALE

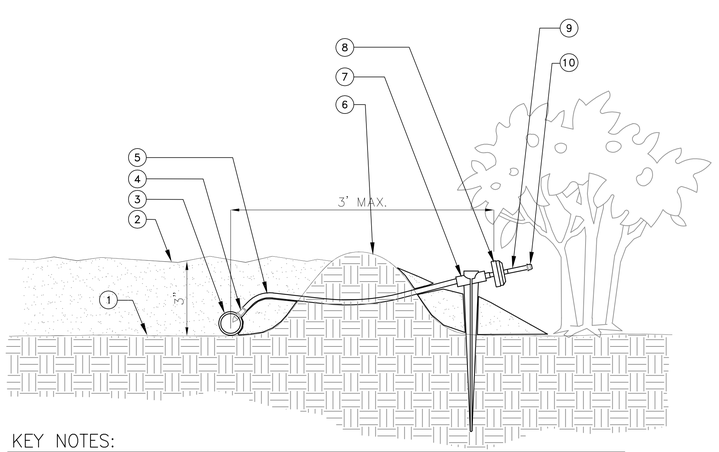


KEY NOTES:

1. FINISH GRADE
2. TOP OF BARK MULCH
3. WATER BASIN
4. XBS BLACK STRIPE TUBING
5. DRIP EMITTER- SEE IRRIGATION LEGEND
6. 1/4" DISTRIBUTION TUBING
7. SECURE END OF TUBING WITH 1/4" TUBING STAKE
8. 2" SECTION OF 1/4" DISTRIBUTION TUBING
9. DIFFUSER BUG CAP

NOTE:
1. SEE IRRIGATION LEGEND FOR EMITTER SCHEDULE.

E DRIP EMITTER ON 1/2" TUBE
NOT TO SCALE

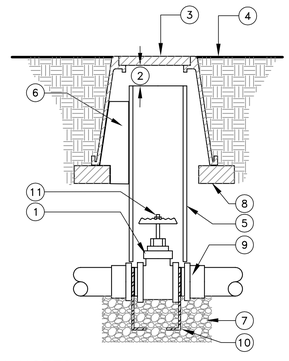


KEY NOTES:

1. FINISH GRADE
2. TOP OF BARK MULCH
3. 1/2" DRIP TUBING
4. 1/4" CONNECTOR
5. 1/4" DISTRIBUTION TUBING
6. WATER BASIN
7. SECURE END OF TUBING WITH 1/4" TUBING STAKE
8. DRIP EMITTER- SEE IRRIGATION LEGEND
9. 2" SECTION OF 1/4" DISTRIBUTION TUBING
10. DIFFUSER BUG CAP

NOTE:
1. SEE IRRIGATION LEGEND FOR EMITTER SCHEDULE.

F DRIP EMITTER ON 1/4" TUBE
NOT TO SCALE



KEY NOTES:

1. GATE VALVES 3" AND LARGER SHALL BE EPOXY COATED WITH FLANGED ENDS WITH 2 INCH OPERATING NUT
2. ALLOW 3" BETWEEN VALVE BOX LID AND PVC PIPE
3. 10" DIAMETER PLASTIC ROUND VALVE BOX WITH BOLT LID DOWN. LID HEAT BRANDED "GATE VALVE"
4. FINISH GRADE
5. 6" DIAMETER SCH. 40 PVC PIPE. USE 8" DIAMETER FOR 6" HAND WHEELS.
6. PEA GRAVEL
7. 6" LAYER OF CLEAN PEA GRAVEL
8. COMMON BRICK; 4" MINIMUM
9. SCH 80 PVC FLANGES TYP. (2) PLACES
10. CONCRETE STABILIZER WITH #4 REBAR REINFORCEMENT FOR VALVES 4" OR LARGER ONLY
11. SQUARE OPERATING NUT FOR VALVES 4" OR LARGER

G GATE VALVE
NOT TO SCALE

AS-BUILT

BY	APPROVED	DATE

THE INFORMATION CONTAINED IN THESE AS-BUILT DRAWINGS IS PROVIDED BY OTHERS. A FIELD SURVEY HAS NOT BEEN COMPLETED BY THE ENGINEER TO VERIFY THEIR ACCURACY.

REV	DATE	BY

DATE: AS BUILT 5/10/2010
SCALE: H: NTS V:---
DRAWN BY: A. KRINGEL
DESIGNED BY: A. KRINGEL
CHECKED BY: M. MATHES

JACOBS
180 PROMENADE CIR. STE 300
SACRAMENTO, CA 95834
PHONE (916) 929-3323 FAX (916) 929-1772

IMPROVEMENT PLANS FOR
SHOPS AT CALVINE
IRRIGATION DETAILS
CITY OF ELK GROVE CALIFORNIA

PROJECT NO: 333540
L-07 L-07
SHEET 28 OF 28

P:\Projects\333540\011\2Drawings\333540.011_UDP\On Site CD's\rrig and Details L-5 to L-7.dwg 5-26-10 01:53:46 PM dndersonsg

Landscape Architectural Construction Drawings for Paseo Greenbelt & Wetlands Riparian Habitat Mitigation Area; Laguna Ridge – Drainage Parkway

No.	Description	Engr Init	CITY APPROVAL By	Date

LANDSCAPE ARCHITECTURAL CONSTRUCTION DRAWINGS FOR:

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA

LAGUNA RIDGE - DRAINAGE PARKWAY

CITY OF ELK GROVE, CALIFORNIA

EG# 04-764-IP-MC
WDID # 5S34C332428

DEVELOPER:

REYNEN AND BARDIS COMMUNITIES
10630 MATHER BOULEVARD
SACRAMENTO, CALIFORNIA 95655

UTILITY REPRESENTATIVES

UTILITY	COMPANY	REPRESENTATIVE	TELEPHONE
GAS	PG&E	MIKE WILLIAMS	(916) 386-5013
ELECTRIC	SMUD	CHUCK HAGER	(916) 732-5722
TELEPHONE	FRONTIER COMMUNICATIONS	EVA MOREDOCK	(916) 691-5615
WATER	SACRAMENTO COUNTY	STAN PETERSON	(916) 874-8291
SEWER	SACRAMENTO COUNTY WATER QUALITY (CSD-1)	CARLOS SMITH	(916) 875-7124
DRAINAGE	CITY OF ELK GROVE PUBLIC WORKS	VIOLET JAKEB	(916) 681-3040
CABLE TV	AT&T BROADBAND	ANDREW KOTZ	(916) 972-2225
FIRE	EGCSD FIRE DEPARTMENT	STEVE FOSTER	(916) 686-5445
USA			(800) 227-2600

APPROVALS

CITY OF ELK GROVE

ELK GROVE CITY ENGINEER DATE

COMMUNITY SERVICES DIRECTOR DATE

COUNTY OF SACRAMENTO

SACRAMENTO COUNTY WATER AGENCY DATE
(APPROVAL FOR ZONE 40 FEES AND WATER METERS ONLY)

RECEIVED
JUL 7 2006
CITY OF ELK GROVE
PUBLIC WORKS

INDEX OF DRAWINGS

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LN-2	LANDSCAPE NOTES	3
LC-1	LAYOUT AND CONSTRUCTION PLAN	4
LC-2	LAYOUT AND CONSTRUCTION PLAN	5
LC-3	LAYOUT AND CONSTRUCTION PLAN	6
LC-4	LAYOUT AND CONSTRUCTION PLAN	7
LI-1	IRRIGATION PLAN	8
LI-2	IRRIGATION PLAN	9
LI-3	IRRIGATION PLAN	10
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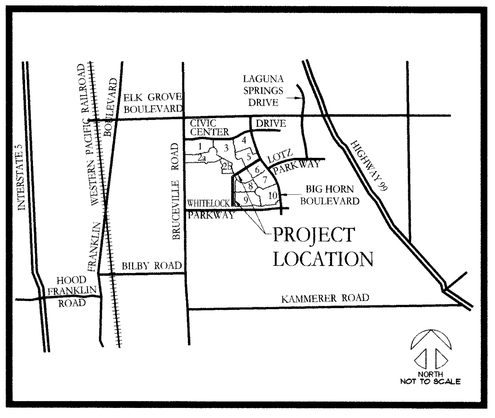
LOCATION MAP



CITY OF ELK GROVE PUBLIC WORKS AGENCY	
THE GROVE @ LAGUNA RIDGE - MITIGATION CHANNEL	
Parcel No.: 132-0270-026	
Map Coordinates: N 268,000 / E 2,169,000	
Approved:	
Order No.:	Drainage Fee: N / A
City's Project No.: EG-04-764-IP-MC	

REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
Signature
STATE OF CALIFORNIA

CRAIG PARK ASSOCIATES REVISIONS | BY

Craig Park Associates
Landscape Architects ★ Planners
2747 Riverside Boulevard
Sacramento, California 95818
916/444-2026
FAX 916/444-1886

COVER SHEET

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS COMMUNITIES

Date 6-20-06
Scale NONE
Drawn
Job
Sheet 1
CV
Of 22 Sheets

CITY OF ELK GROVE - LANDSCAPE CONSTRUCTION PROCEDURES

PRE-CONSTRUCTION MEETING REQUIREMENTS:
A. PROVIDE ONE (1) SET OF SIGNED LANDSCAPE PROJECT PRINTS FOR CITY AND TWO (2) SETS FOR INSPECTOR.

B. HAVE PROJECT SUBMITTALS FOR IRRIGATION SUPPLIES, EQUIPMENT, BOOSTER PUMPS AND AMENDMENTS (MULCH-COMPOST AND BARK).

C. SUBMITTALS - ANY CHANGE ORDERS TO PLANT MATERIAL, IRRIGATION EQUIPMENT OR ANY OTHER ITEMS MUST HAVE WRITTEN APPROVAL OF THE CITY REPRESENTATIVE. FAILURE TO OBTAIN CITY APPROVAL FOR CHANGE ITEMS MAY RESULT IN THE REMOVAL OF THE PRODUCT FROM THE PROJECT.

PREVAILING WAGE PROJECTS - IF PROJECT IS A PREVAILING WAGE PROJECT, IT IS MANDATORY THAT THE INSPECTOR BE NOTIFIED 24 HOURS IN ADVANCE WHEN CREWS WILL BE WORKING.

CONSTRUCTION STAGES - CITY INSPECTOR WILL SIGN OFF ON EACH ITEM LISTED BEFORE ANOTHER PHASE OF PROJECT CAN BE STARTED. A FORTY- EIGHT (48) HOUR NOTICE WILL BE REQUIRED FOR INSPECTIONS.
A. PRELIMINARY GRADING - SLOPES CANNOT EXCEED 4:1 IN PLANTERS, 3:1 IN TURF OR THE MINIMUM SLOPE OF 1.5% IN PLANTER AND TURF AREAS.

B. MAINLINE AND LATERAL DITCH DEPTHS, GLUE TYPE, PRIMER AND HYDRO TEST. ALL PLUMBING FITTINGS AND INSTALLATION WILL BE INSPECTED BEFORE PLUMBING IS ALLOWED TO BE COVERED.

C. IRRIGATION COVERAGE TEST.

D. IF APPLICABLE, CONCRETE FORMS - THIS WILL ASSURE THAT FINAL GRADE AFTER POURING WILL BE CONDUCTIVE TO PROPER FINAL SLOPES.

E. FINAL GRADE INSPECTION - BEFORE THE INSTALLATION OF ANY PLANT MATERIAL, SOD OR SEEDING IS INSTALLED

F. DELIVERY TAGS - PRESENTED TO THE INSPECTOR TO INSURE THE PROPER AMOUNT OF MATERIALS HAS BEEN DELIVERED TO THE JOB SITE.

G. PLANT MATERIAL INSPECTION - BEFORE PLANT MATERIAL CAN BE INSTALLED THE PLANT MATERIAL SHALL FIRST BE INSPECTED AND APPROVED BY THE CITY INSPECTOR OR CITY LANDSCAPE ARCHITECT.

H. TREE HOLES / TREE PIT SATURATION - INSPECTION OF THE TEN (10') FOOT BORED HOLES BEFORE THE PLANTING OF TREES. (AS PER THE TREE PLANTING DETAIL, THE 10' AUGURED HOLES WILL BE REQUIRED ONLY IF WATER DOES NOT PERCOLATE INTO THE NATIVE SOIL WITHIN THE TREE PLANTING HOLE. CONTRACTOR SHALL DIG TREE POCKET AND FILL WITH 6" WATER AND OBSERVE PERCOLATION. IF WATER DOES NOT PERCOLATE AT LEAST 1" PER HOUR, THE AUGURED HOLES SHALL BE INSTALLED.)

I. PLANT MATERIAL INSPECTION - AFTER PLANTS / TREES HAVE BEEN INSTALLED, INSPECTION OF THE PLANT/TREE HEIGHTS AND PRE-EMERGENT APPLICATION BEFORE THE INSTALLATION OF THE THREE-INCH (3") LAYER OF BARK MATERIALS. BARK DEPTH WILL BE INSPECTED AT RANDOM LOCATIONS.

PRE-MAINTENANCE MEETING - WHEN CONSTRUCTION WORK IS COMPLETED, THERE WILL BE A PRE-MAINTENANCE MEETING WITH CITY LANDSCAPE INSPECTOR, PROJECT LANDSCAPE ARCHITECT, AND CITY LANDSCAPE ARCHITECT. THE PURPOSE OF THE MEETING IS TO INSPECT THE PROJECT AND TO IDENTIFY ANY NECESSARY CORRECTIONS AND GENERATE A CORRECTION PUNCH LIST. WHEN ALL PUNCH LIST ITEMS HAVE BEEN CORRECTED, THE LANDSCAPE MAINTENANCE BEGINS FOR THE CONTRACTUAL PERIOD OF TIME. ITEMS SUCH AS ELECTRICAL METER INSTALLATION AND DEED PREPARATION WILL BE NOTED, BUT WILL NOT IMPEDE THE BEGINNING OF THE MAINTENANCE PERIOD.

DURING THE LANDSCAPE MAINTENANCE PERIOD, THE PROJECT SHALL BE MAINTAINED IN GOOD CONDITION WITH WEEKLY MOWING, EDGING, BLOWING, PLANTING BEDS AND TURF AREA KEEP WEED FREE, FERTILIZATION ETC. FAILURE TO KEEP THE PROJECT WELL MAINTAINED DURING THIS PERIOD WILL RESULT IN THE EXTENSION OF THE MAINTENANCE PERIOD.

IRRIGATION INSPECTION BY THE CITY REPRESENTATIVE - TWO WEEKS PRIOR TO THE FINAL ACCEPTANCE OF THE PROJECT, IT WILL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO CONTACT CITY CONSTRUCTION SERVICES INSPECTOR (916) 681-3013 AND PHIL GIEBEL, CENTRAL CONTROL SYSTEMS (530) 662-6841 FOR AN INSPECTION OF THE MOTOROLA IRRIGATION SYSTEM.

LANDSCAPE PROJECT ACCEPTANCE MEETING - EXISTING ITEMS ON PUNCH LIST WILL BE CHECKED, CONDITION OF THE PROJECT WILL BE CHECKED, IF THE PROJECT IS IN ACCEPTABLE CONDITION THE PROJECT WILL BE ACCEPTED BY THE CITY FOR MAINTENANCE. IF ITEMS ARE NOTED THAT NEED TO BE CORRECTED, A LIST WILL BE GENERATED AND IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT INSPECTOR WHEN ITEMS HAVE BEEN CORRECTED FOR RE-INSPECTION AND ACCEPTANCE.

FINAL ACCEPTANCE - THE FOLLOWING WILL BE REQUIRED BEFORE ACCEPTANCE OF PROJECT.
A. DEEDS SHALL BE RECEIVED AT CITY DEPARTMENT OF PUBLIC WORKS OFFICE, SUBMITTED TO CITY CONSTRUCTION SERVICES AT (916) 681-3013.

B. ELECTRIC METER(S) INSTALLED AND WORKING, OR

C. LETTERS FOR ELECTRICAL SERVICE AGREEMENT IF APPLICABLE

D. LETTERS OF GUARANTEE FOR PLANT MATERIAL AND IRRIGATION SYSTEM FROM THE CONTRACTOR TO THE CITY OF ELK GROVE COVERING ONE YEAR FOR IRRIGATION SYSTEM, ONE YEAR FOR THE TREES, AND 90 DAYS FOR THE SHRUBS AND GROUND COVERS FROM THE TIME OF ACCEPTANCE OF THE PROJECT.

E. EQUIPMENT REQUIRED AND CALLED OUT IN THE PLANS IS TO BE TURNED OVER TO THE CITY, SUCH AS IRRIGATION HEADS, VALVE KEYS ETC.

F. PROJECT AS-BUILTS

G. REDUCED IRRIGATION LAMINATES SHOWING COLOR-CODED IRRIGATION ZONES, VALVE NUMBERS, GPM PER VALVE, IRRIGATION VALVE LOCATIONS AND IRRIGATION CONTROLLER NUMBER.

H. PRODUCT BOOKLETS AND PRODUCT GUARANTEES FOR ITEMS SUCH AS BOOSTER PUMPS, FERTILIZATION PUMPS, CONTROLLER(S) ETC.

CITY OF ELK GROVE GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF ELK GROVE STANDARD CONSTRUCTION SPECIFICATIONS AND IMPROVEMENT STANDARDS. WHERE INCONSISTENCIES EXIST, THE LATEST EDITION SHALL TAKE PRECEDENCE.
2. PUBLIC SAFETY AND TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 6-13 OF THE STANDARD CONSTRUCTION SPECIFICATIONS AND AS DIRECTED BY THE CITY INSPECTOR. SAFE VEHICULAR AND PEDESTRIAN ACCESS SHALL BE PROVIDED AT ALL TIMES DURING CONSTRUCTION.
3. THE CONSULTING ENGINEER SHALL NOTIFY THE CITY OF ELK GROVE CONSTRUCTION INSPECTION OFFICE UPON COMPLETION OF STAKING BY CALLING 916/681.3012.
4. THE CONTRACTOR SHALL NOTIFY THE CITY OF ELK GROVE CONSTRUCTION INSPECTION OFFICE TWO WORKING DAYS PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR SHALL NOT START ANY GRADING UNTIL THE CITY COMPLETES A PRE-CONSTRUCTION MEETING. PLEASE CALL 916/681.3013 TO SCHEDULE A PRE-CONSTRUCTION MEETING.
5. THE CITY OF ELK GROVE IS A MEMBER OF THE UNDERGROUND SERVICE ALERT (U.S.A.) ONE-CALL PROGRAM. THE CONTRACTOR OR ANY SUB-CONTRACTOR FOR THIS CONTRACT SHALL NOTIFY MEMBERS OF U.S.A. TWO WORKING DAYS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK BY CALLING THE TOLL-FREE NUMBER: 800/2272600. THE THOMAS GUIDE MAP PAGE 398 INDEX C7 & D7, 2003 EDITION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION. ALL SUCH MONUMENTS OR MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
7. ALL SERVICE SEWERS SHALL HAVE FOUR TO FIVE FEET OF COVER AT THE PROPERTY LINE OR RIGHT-OF-WAY, UNLESS OTHERWISE NOTED ON PLANS.
8. EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH SECTION 11 OF THE CITY OF ELK GROVE IMPROVEMENT STANDARDS.
9. THE DEVELOPER OR CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL SIGNING AND STRIPING FOR PUBLIC SAFETY, AS DETERMINED BY THE CITY OF ELK GROVE.
10. SIDEWALK RAMPS AND DRIVEWAYS SHALL CONFORM TO THE CITY OF ELK GROVE STANDARDS.
11. IF THIS PROJECT INCLUDES FACILITIES TO BE REIMBURSED BY A FINANCING DISTRICT AND/OR FEE PROGRAM, THE CITY'S "REIMBURSEMENT POLICIES AND PROCEDURES FOR PRIVATELY CONSTRUCTED PUBLIC FACILITIES", AVAILABLE FROM THE CITY ENGINEER, MUST BE FOLLOWED TO ENSURE REIMBURSEMENT ELIGIBILITY. ALL CHANGES IN WORK THAT AFFECTS REIMBURSABLE FACILITIES SHALL BE COORDINATED WITH THE CITY'S PROGRAM MANAGER BY CALLING 916/478.2263.

CITY OF ELK GROVE EROSION AND SEDIMENT CONTROL NOTES

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE CITY OF ELK GROVE IMPROVEMENT STANDARDS, CURRENT EDITION (JUNE 1999) AND THE CITY OF ELK GROVE EROSION AND SEDIMENT CONTROL GUIDELINES, DATED NOVEMBER 2000.
2. EROSION CONTROL BEST MANAGEMENT PRACTICES (BMPs) SHALL BE INSTALLED AND MAINTAINED DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). SEDIMENT CONTROL BMPs SHALL BE INSTALLED AND MAINTAINED ALL YEAR ROUND.
3. ALL DRAINAGE INLETS IMMEDIATELY DOWNSTREAM OF THE WORK AREAS AND WITHIN THE WORK AREAS SHALL BE PROTECTED WITH SEDIMENT CONTROL AND INLET FILTER BAGS, YEAR ROUND. INLET FILTER BAGS SHALL BE REMOVED FROM THE DRAINAGE INLETS UPON ACCEPTANCE OF THE PUBLIC IMPROVEMENTS BY THE CITY.
4. ALL STABILIZED CONSTRUCTION ACCESS LOCATIONS SHALL BE CONSTRUCTED PER STANDARD DRAWING 11-1. WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES PAVED AREAS, THE STABILIZED ACCESS SHALL BE MAINTAINED ON A YEAR ROUND BASIS UNTIL THE COMPLETION OF CONSTRUCTION.
5. ALL AREAS DISTURBED DURING CONSTRUCTION, BY GRADING, TRENCHING, OR OTHER ACTIVITIES, SHALL BE PROTECTED FROM EROSION DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). HYDROSEED, IF UTILIZED, MUST BE PLACED BY SEPTEMBER 15. HYDROSEED PLACED DURING THE WET SEASON SHALL USE A SECONDARY EROSION PROTECTION METHOD.
6. SENSITIVE AREAS AND AREAS WHERE EXISTING VEGETATION IS BEING PRESERVED SHALL BE PROTECTED WITH CONSTRUCTION FENCING. SEDIMENT CONTROL BMPs SHALL BE INSTALLED WHERE ACTIVE CONSTRUCTION AREAS DRAIN INTO SENSITIVE OR PRESERVED VEGETATION AREAS.
7. SEDIMENT CONTROL BMPs SHALL BE PLACED ALONG THE PROJECT PERIMETER WHERE DRAINAGE LEAVES THE PROJECT. SEDIMENT CONTROL BMPs SHALL BE MAINTAINED YEAR ROUND UNTIL THE CONSTRUCTION IS COMPLETE OR THE DRAINAGE PATTERN HAS BEEN CHANGED AND NO LONGER LEAVES THE SITE.
8. THE FOLLOWING AREAS ARE TO RECEIVE HYDROSEEDING OR OTHER EROSION CONTROL:
   - LOT FRONT YARDS BEHIND THE SIDEWALK - THE FIRST 18 FEET OR TOP OF SLOPE (WHICH EVER IS GREATER)
   - SIDEYARDS BEHIND THE SIDEWALK - THE FIRST 7.5 FEET OR TOP OF SLOPE (WHICHEVER IS GREATER).
   - SLOPES - ALL SLOPES GREATER THAN 10:1
9. EROSION AND SEDIMENT CONTROL MEASURES FOR THIS PROJECT SHALL BE IN SUBSTANTIAL COMPLIANCE AT ALL TIMES WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THE PROJECT IN ACCORDANCE WITH THE STATE OF CALIFORNIA GENERAL CONSTRUCTION PERMIT. THIS PERMIT REQUIRES THAT THE SWPPP BE KEPT UP TO DATE TO REFLECT THE CHANGING SITE CONDITIONS AND THE SWPPP IS TO BE AVAILABLE ON SITE AT ALL TIMES FOR REVIEW BY STATE AND LOCAL INSPECTORS.

SACRAMENTO COUNTY WATER AGENCY IRRIGATION / LANDSCAPING PLAN WATER NOTES (March 2005)

1. All work and materials shall be in accordance with the latest edition of the Sacramento County Standard Construction Specifications (September 2001, Revised March 2004) and Improvement Standards (June 1, 1999), unless otherwise shown or described on the plans. For irrigation systems utilizing non-potable (recycled) water, refer to Section 41-22 RECYCLED WATER of the Sacramento County Standard Construction Specifications.
2. The Contractor shall notify Sacramento County Construction Management Dean Gage at 875-2700, five (5) working days in advance of beginning work.
3. Plans shall be resubmitted for approval if construction of water facilities has not begun within one (1) year after the approval date of these improvement plans.
4. All work shall be inspected by Sacramento County Construction Management prior to backfilling.
5. The Contractor shall notify the Sacramento County Water Quality Maintenance, Underground Repair Section at 875-7014 in case of an emergency.
6. A construction water permit is required for any water withdrawn from newly constructed or existing water distribution system. Water use shall comply with rules and regulations of the construction water permit. A tested and approved temporary backflow prevention assembly shall be required for certain installations as determined by the Sacramento County Water Agency. Failure by the Contractor to obtain and display a permit will result in a $152 fine for each occurrence.

   Contact Juan Perez at 875-6916 to obtain a construction water permit five (5) working days in advance of beginning work. The Contractor shall have all approved paperwork in possession prior to connection to existing water system for construction water.
7. The Contractor shall notify Sacramento County Construction Management or the inspector for the project's water facilities at 875-2700, five (5) days in advance of connecting to the existing water system so the inspector can arrange for closure of valves and customer notification of shut down prior to connection being made. The method of connection to the existing water main(s) shall be by Direct Connection, Hot Tap, or Cut-In as specified on these plans. The County will arrange for closure of valves and customer notifications of shutdown to allow connections to the water system to be made. The contractor is prohibited from operating valves that are not part of this project.

   The Contractor shall disinfect and flush the new water system prior to connecting to existing water system per Sacramento County Standard Construction Specifications.
8. Service connections to an existing potable or nonpotable water main, or to an extension of an existing main, shall be made by a qualified contractor, after payment of all applicable fees and issuance of a connection permit. The Contractor shall schedule and proceed with the service connection without delay and with minimum interference to existing water and fire services. An inspection by Sacramento County Construction Management of all connections made by the Contractor is required prior to backfilling.

   The County reserves the option to make all water taps after payment of fees and issuance of a connection permit.
9. Valves three inches (3") and larger placed at tees, crosses, bends, and reducers shall be flanged and bolted to the fittings.
10. Unless otherwise specified, pipe joints will not be allowed within six feet (6') of a valve, fitting, or hydrant. Deflection of pipe will not be allowed within ten feet (10') of any fitting or valve.
11. Standard pipe lengths (minimum eighteen (18) to twenty (20) feet) shall be used for all horizontal and vertical deflections.
12. Water meter boxes shall be installed in accordance with the applicable standard drawing for the size of meter, and in accordance with nonpotable (Recycled) water specifications when applicable.
13. The Reduced Pressure Principle (RP) backflow preventer shall be located within five (5) feet of the water meter.
14. No tree shall be planted within five (5) feet of any potable or nonpotable water main as measured from the trunk of the tree to the center of the pipe
15. Two (2) sets of "As-Built" plans shall be submitted to Sacramento County Construction Management prior to acceptance of the water system by the County. All sheets shall be stamped "Record Drawing" or "As-Built".

No.	Description	Engr. Init	CITY APPROVAL By	Date

IRRIGATION NOTES

1. CONTRACTOR SHALL INSTALL IRRIGATION PER THE LATEST EDITION OF THE CITY OF ELK GROVE IMPROVEMENT STANDARDS AND STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT CITY INSPECTOR, CONSTRUCTION SERVICES AT 916/681.3013, A MINIMUM OF 48 HOURS PRIOR TO INSPECTION AND APPROVAL OF THE FOLLOWING:
   A. SITE ROUGH GRADING
   B. IRRIGATION INSTALLATION, (PRIOR TO BACKFILLING)
   C. IRRIGATION MAIN LINE PRESSURE TEST CHECK
   D. UPON INSTALLATION OF PLANTING
   E. PRE-MAINTENANCE PERIOD
   F. END OF MAINTENANCE PERIOD, FINAL INSPECTION
3. IRRIGATION SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES, BY LICENSED CONTRACTORS AND EXPERIENCED WORKMEN. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND FEES RELATING TO HIS WORK.
4. CONTRACTOR IS TO VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO PERFORMING ANY EXCAVATIONS. CONTACT UNDERGROUND SERVICE ALERT (USA) AT 800/642-2444 FOR UTILITY MARKING. CONTRACTOR IS TO REPAIR ANY DAMAGE CAUSED BY, OR DURING THE PERFORMANCE OF, HIS WORK AT NO ADDITIONAL COST TO THE OWNER.
5. TRENCHING IS TO BE OF SUFFICIENT DEPTH TO PROVIDE 24" OF COVER OVER IRRIGATION MAIN LINES AND CONTROL WIRE AND 12" OF COVER OVER ALL LATERAL LINES. ALL LINES UNDER PAVING SHALL BE BURIED WITH 30" OF COVER. CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT AND CITY OF ELK GROVE REPRESENTATIVE WITH ANY DISCREPANCIES.
6. THE IRRIGATION PLAN IS DIAGRAMMATIC. ALL REQUIRED OFFSETS MAY NOT BE SHOWN. PARALLEL PIPES MAY BE INSTALLED IN A COMMON TRENCH. PIPES SHALL HAVE A MINIMUM 3" HORIZONTAL SEPARATION AND ARE NOT TO BE INSTALLED DIRECTLY ABOVE ONE ANOTHER. COORDINATE PLACEMENT OF IRRIGATION LINES TO INSURE THERE WILL BE NO CONFLICT WITH PLANTING LOCATIONS OF TREES SHOWN ON PLANTING PLAN.
7. INSTALL SPRINKLER HEADS 2" CLEAR OF CURBS, PAVING, OR UTILITY BOXES, 6'-8" CLEAR OF FENCES, WALLS AND PILASTERS, AND 12" CLEAR OF DECOMPOSED GRANITE PATH. CONTRACTOR TO MAKE MINOR ADJUSTMENTS TO NOZZLES AND HEAD LOCATIONS TO PROVIDE 100% HEAD TO HEAD COVERAGE AND TO MINIMIZE THE SPRAYING OF WATER ONTO PAVEMENT, INCLUDING STREET, WALLS, FENCES, PILASTERS AND DECOMPOSED GRANITE PATH.
8. FLUSH MAIN LINES PRIOR TO THE INSTALLATION OF REMOTE CONTROL VALVES OR QUICK COUPLERS VALVES. FLUSH LATERAL LINES PRIOR TO THE INSTALLATION OF IRRIGATION HEADS.
9. PRESSURE TEST IRRIGATION MAIN LINE IN THE PRESENCE OF THE LANDSCAPE ARCHITECT, COUNTY REPRESENTATIVE, AND CITY CONSTRUCTION SERVICES AS REQUIRED. PERFORM THE TEST AS FOLLOWS:
   A. HYDROSTATIC PRESSURE TESTING PROCEDURE SHALL CONFORM TO SECTION 22, AWWA STANDARD C600-54.
   B. PRIOR TO BACKFILLING, AND AFTER ALL REMOTE CONTROL VALVES HAVE BEEN INSTALLED, INSTALL TWO 0-200 PSI PRESSURE GAUGES ON MAIN LINE (AT BOTH ENDS).
   C. APPLY CONTINUOUS HYDROSTATIC PRESSURE OF 125 PSI FOR A TWO HOUR PERIOD. A PRESSURE DROP IS NOT ACCEPTABLE. REPAIR LEAKS AND RE-TEST AS REQUIRED UNTIL THE TEST HAS PASSED.
10. PRESSURE TEST LATERAL LINES UNDER OPERATING PRESSURE PRIOR TO BACKFILLING.
11. ALL WIRE SPLICES ARE TO BE MADE WITHIN A VALVE BOX. SPLICES ARE TO BE MADE WITH A COPPER CRIMP TYPE CONNECTOR AND INSTALLED WITHIN A "3-M" NO. DBY SEALING PACK.
12. REMOTE CONTROL VALVE BOXES ARE TO BE INSTALLED 1/2" ABOVE FINISH GRADE IN SHRUB AND GROUNDCOVER AREAS. ALIGN VALVE BOXES WITH ADJACENT PAVEMENT EDGES, ARCHITECTURAL FEATURES, OR ADJACENT VALVE BOXES, AS APPLICABLE FOR A NEAT APPEARANCE. VALVE BOXES ARE TO CONFORM WITH FINISH GRADES (NOT NECESSARILY LEVEL).
13. ALL EXCAVATIONS ARE TO BE BACKFILLED TO 85% COMPACTION (95% UNDER PAVING).
14. THERE ARE 2 POINTS OF CONNECTIONS ON THIS PROJECT WITH BOTH BEING CONTROLLED BY MOTOROLA SCORPIOS. THE SYSTEMS ARE DESIGNED FOR THE MINIMUM OPERATING PRESSURE OF 35 PSI AND A MAXIMUM FLOW SHOWN ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE EXISTING WATER PRESSURE OF 35 PSI AT EACH POINT OF CONNECTION PRIOR TO CONSTRUCTION. REPORT TO THE LANDSCAPE ARCHITECT ANY DIFFERENCE BETWEEN THE WATER PRESSURE SHOWN ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT EACH POINT OF CONNECTION. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY. BOTH CONTROLLERS ARE IRRIGATED FROM A POTABLE WATER SERVICE.
15. CONTRACTOR SHALL PROVIDE LANDSCAPE ARCHITECT WITH AN ACCURATE AS-BUILT SET OF DRAWINGS OF THE IRRIGATION SYSTEM PRIOR TO FINAL ACCEPTANCE OF THE WORK. AS-BUILT DRAWINGS SHALL BE DELINEATED ON A REPRODUCIBLE MYLAR TO BE SUPPLIED BY THE LANDSCAPE ARCHITECT.
16. PRIOR TO FINAL INSPECTION OF THE IRRIGATION SYSTEM, CONTRACTOR SHALL PROVIDE A CONTROLLER CHART FOR EACH CONTROLLER SUPPLIED. THE CHART SHALL BE A REDUCED COPY OF THE AS-BUILT DRAWING ON A BLACK LINE PRINT, WITH THE AREA OF THE CONTROLLER STATION COVERAGE IDENTIFIED IN A DIFFERENT COLOR. THE CHART SHALL BE REDUCED TO AN 11" X 17" SIZE THAT FITS ON THE ENCLOSURE DOOR, HERMETICALLY SEALED BETWEEN 2 PIECES OF 10 MIL. CLEAR PLASTIC AND SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
17. OPERATION OF THE IRRIGATION SYSTEM SHALL BE COMPLETED BETWEEN THE HOURS OF 10 PM TO 6 AM.
18. ALL REMOTE CONTROL VALVES SHALL HAVE A VALVE TAG (AS MANUFACTURED BY T. CHRISTY OR APPROVED EQUAL) ATTACHED TO THE VALVE INDICATING THE CONTROLLER STATION NUMBER.
19. INSTALL IN-LINE CHECK VALVES IN ALL LOCATIONS AS REQUIRED TO PREVENT LOW HEAD DRAINAGE.
20. THE CONTRACTOR SHALL INSTALL TWO (2) SPARE WIRES PLUS COMMON STARTING FROM THE CONTROLLER, LOOPED TO EACH VALVE BOX AND TO BOTH ENDS OF THE MAIN LINE, WITHOUT SPLICES. THE COLOR OF ALL SPARE WIRES SHALL BE YELLOW.
21. REFER TO IRRIGATION SPECIFICATIONS 02810 ON SHEETS SP-1 AND SP-2 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
22. ADJUST FINAL GRADE TO MATCH FLUSH WITH GRADE OF EXISTING UTILITY STRUCTURES AS REQUIRED.
23. INSTALL QUICK COUPLER VALVES WITHIN 10" ROUND PLASTIC VALVE BOX WITH BOLT-DOWN LID. TOP OF QUICK COUPLER VALVES SHALL BE 2" BELOW RIM OF BOX.
24. CONTRACTOR SHALL WARRANT THAT THE IRRIGATION SYSTEM WILL BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE WORK, AND SHALL REPAIR OR REPLACE ANY DEFECTIVE MATERIALS OR WORK AT NO ADDITIONAL COST TO THE OWNER. THE ABOVE MENTION WARRANTY SHALL BE IN WRITING.
25. CONTRACTOR MUST CONTACT CITY CONSTRUCTION SERVICES AT 916/681.3013 A MINIMUM OF 72 HOURS PRIOR TO BEGINNING WORK. NO EXCEPTIONS!
26. CONTRACTOR SHALL NOT PLANT ANY TREES WITHIN FIVE FEET (5') OF A WATER MAIN.
27. IRRIGATION CONTROL WIRE SHALL BE NO. 14-1 AWG UF (UL) APPROVED FOR DIRECT BURIAL. WIRE COLORS FOR THIS PHASE OF THE WORK SHALL BE AS FOLLOWS: COMMON WIRE - WHITE, PILOT WIRES - RED, ALL SPARE WIRES - YELLOW. NO EXCEPTIONS!
28. CONTRACTOR TO COORDINATE THIS PROJECT WITH LAGUNA RIDGE CIVIC CENTER DRIVE AND BIG HORN BOULEVARD LANDSCAPE CONSTRUCTION PLANS PREPARED BY CRAIG PARK ASSOCIATES.
29. THE CONTRACTOR SHALL INSTALL CONTROLLER ASSEMBLY IN METERED ENCLOSURE AND ELECTRIC SERVICE IN BACK OF ENCLOSURE. FOR COORDINATION OF THE SERVICE METER INSTALLATION, CONTACT CHUCK HAGER AT SMUD, TELEPHONE NUMBER: 916/732.5722. THE SMUD SERVICE ORDER NUMBERS ARE NOTED ON PLANS AT EACH CONTROLLER LOCATION.

REFER TO LANDSCAPE NOTES, SHEET LN-2, FOR PLANTING NOTES AND SOIL FERTILITY TEST RESULTS.

REFER TO LAYOUT AND CONSTRUCTION PLANS, SHEET LC-1, FOR LAYOUT AND CONSTRUCTION LEGEND.

REFER TO IRRIGATION PLAN, SHEET LI-1, FOR IRRIGATION LEGEND AND IRRIGATION PLAN, SHEET LI-4, FOR IRRIGATION SCHEDULE.

REFER TO PLANTING PLAN, SHEET LP-1, FOR PLANTING LEGEND, PLANT LIST, OAK TREE MITIGATION, AND WETLAND MITIGATION.

REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
Signature
Date
STATE OF CALIFORNIA

CRAIG PARK ASSOCIATES REVISIONS	BY

Craig Park
Associates
Landscape Architects & Planners
2717 Riverside Boulevard
Sacramento, California 95818
916/444-2020
FAX 916/444-1886

LANDSCAPE NOTES

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date	6-20-06
Scale	NONE
Drawn	
Job	
Sheet	2

LN-1

Of 22 Sheets

SOIL FERTILITY TEST

Sunland Analytical
11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 06/07/2006
Date Submitted 05/31/2006

To: Craig Park
Craig Park Associates
2747 Riverside Blvd.
Sacramento, CA 95818

From: Gene Oliphant, Ph.D. \ Randy Horner
General Manager \ Lab Manager

The reported analysis was requested for the following:
Location : LAGUNA RIDGE/GROVE Site ID : MITIGATION CHAN.
Thank you for your business.

* For future reference to this analysis please use SUN # 47727-94835.

SOIL ANALYSIS

Saturation Percent (SP)	31		Soil Texture Sandy Loam
pH	6.94		
E.C.	0.23	mmho/cm	
Tot.Dissolved Salts	147.2	ppm	
Infiltration Rate (0% Slope)	0.75	in/hr	
% Organic Matter	1.9		
C.E.C.	10.0	meq/100g	
Sodium Absorption Ratio (SAR)	1.8		
Exchangable Sodium Percent (ESP)	1.3		
Gypsum Req. (CaSO4*2H2O)	None Required		
est. Nitrogen Release	2.9	#/1000 sq.ft.	

Nitrate	8.55	ppm	****
Phosphorus	10.59	ppm	*********
Potassium	57.69	ppm	*********
Sulfur	2.39	ppm	****
Chloride	No Test		
Carbonates	No Test		
Sodium	30.70	ppm	
Calcium	1244.87	ppm	******************
Magnesium	427.82	ppm	************
Boron	0.15	ppm	****
Copper	No Test		
Iron	No Test		
Manganese	No Test		
Zinc	No Test		

Very Low	Low	Adequate	Excessive

SOIL RECOMMENDATIONS FOR LANDSCAPE GARDENING

SOIL pH (Acidity and Alkalinity)
The pH of this sample indicates the soil is in a range for normal growth of most plants. No modification is required.

DISSOLVED SALTS (Indicated by E.C. & TDS)
These conditions are in the normal range for plant growth.

SOIL TEXTURE AND RATE OF WATER INFILTRATION
The infiltration rate for all soil textures decreases with increasing ground slope. At 0 to 4%, 5 to 8%, 9 to 12%, 13 to 16% and above 16% the infiltration rate of this sample decreases from 0.75 to 0.60, 0.45, 0.30, 0.19, respectively. Infiltration rate also decreases with percent of ground cover and by compaction.

WATER PENETRATION OF SOIL DUE TO CHEMICAL CHARACTERISTICS
When exchangable Sodium increases in the soil, water penetration decreases. Based on SAR and ESP values this sample has no penetration problem due to soil Sodium. No Gypsum required.

ORGANIC MATTER
Organic matter provides a slow nitrogen release and aids water retention. This sample has a moderate Organic Matter content.
To maintain moisture and provide sustained nitrogen release a level of 10% organic matter is recommended. Use amending material that is approximately 75% organic matter (i.e. many ground fir barks). Based on the analysis of this soil sample apply 3 yards per 1000 sq.ft. Spread evenly and blend into the top six inches of soil. It is a reasonable practice to apply a top dressing of 3 inches of organic mulches to aid water penetration and retention.

SOIL BORON
Boron concenrations are in a range allowing normal plant growth.

SOIL MACRONUTRIENTS : NITROGEN-PHOSPHORUS-POTASSIUM (N-P-K)
GENERAL N-P-K RECOMMENDATION

Use ONE of these NPK preparations for the first fertilizer application.

Standard NPK Fertilizer Preparations	6-20-20	5-20-10	16-16-16	0-10-10	28-3-4	21-0-0	Customer Choice None
#/1000 sq.ft.	14	19	N/A	N/A	N/A	N/A	**

GRASS OR SOD PREPARATION
Till in organic matter, N,P,K and micro nutrients in addition to any lime gypsum or sulfur as directed above. Smooth soil surface and follow seed or sod producers direction for moisture and product application.

TREES AND SHRUBS
Excavate holes for planting shrubs and trees to at least twice the volume of the container. Prepare backfill for tree and shrub planting holes by mixing three parts of native soil (or imported top soil) with one part organic amendment (preferably nitrogen and iron fortified) and 2.5 pounds of 6-20-20 per yard of mix. For extended fertilization, place slow release fertilizer tablets in each hole per manufacturer's instructions. If 6-20-20 was not directly added to backfill mix, during backfill apply uniformly 1/2 oz of 6-20-20 per gallon containers, 2.5 oz per 5 gallons, 6 oz per 24 inch boxes.

Summary and Suggested Sequence of Soil Improvements (#/1000 Sq.Ft.)

Organic Amendment	3	Yd./1000 Sq.Ft. Bulk organic amendment (nitrofied).
N-P-K Fertilizer	See above chart	
Sulfate-Sulfur	1	# Ammonium Sulfate

Maintenance Fertilization
Apply 5 pounds of Ammonium sulfate (21-0-0) per 1000 sq.ft.every month until plants become established. After established, apply 28-3-4 (or similar preparation) to provide desired growth rate and color.

PLANTING NOTES

1. CONTRACTOR SHALL INSTALL PLANTING PER THE LATEST EDITION OF THE CITY OF ELK GROVE IMPROVEMENT STANDARDS AND STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT THE CITY INSPECTOR, CONSTRUCTION SERVICES AT 916/68T3Ø13 AND LANDSCAPE ARCHITECT, A MINIMUM OF 48 HOURS PRIOR TO THE FOLLOWING FOR INSPECTION AND APPROVAL:
   A. POST-GRADING INSPECTION
   B. PRE-PLANTING INSPECTION
   C. PLANT MATERIAL DELIVERY
3. INTENT: THE INTENT OF THE DRAWINGS IS TO INCLUDE ALL LABOR, MATERIALS, AND SERVICES NECESSARY FOR THE COMPLETION OF ALL WORK SHOWN, DESCRIBED OR REASONABLY IMPLIED BUT NOT LIMITED TO THAT EXPLICITLY INDICATED IN THE CONTRACT DOCUMENTS.
4. EXISTING CONDITIONS: THE LANDSCAPE CONTRACTOR IS TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS ON THE SITE PRIOR TO COMMENCING WORK.
5. DIMENSIONS: THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, QUANTITIES, AND COORDINATION OF HIS WORK WITH ALL OTHER TRADES.
6. COORDINATION: THE CONTRACTOR SHALL COORDINATE PLANTING WITH IRRIGATION INSTALLATION AS NECESSARY.
7. SUBSTITUTIONS: ANY AND ALL SUBSTITUTIONS OF PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT AND CITY CONSTRUCTION SERVICES.
8. DETAILS AND SPECIFICATIONS: REFER TO PLANTING DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. SPECIFICATIONS ARE IN SHEET/DRAWING FORMAT AND ARE INCLUDED AS PART OF THESE CONSTRUCTION DOCUMENTS AND REQUIREMENTS.
9. PRE-EMERGENCE WEED CONTROL: APPLY A PRE-EMERGENCE HERBICIDE AS APPROVED FOR USE IN THE STATE OF CALIFORNIA AND US ARMY CORPS OF ENGINEERS TO ALL PLANTING AREAS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED RATES. CONTRACTOR SHALL APPLY PRE-EMERGENT PRIOR TO PLACING MULCH LAYER. ANY PLANTING MATERIALS SHOWING LOSS OF VIGOR OR HEALTH OWING TO IMPROPER APPLICATION OF THE HERBICIDE SHALL BE REPLACED AT NO COST TO THE OWNER. IF THE MAINTENANCE OR CONSTRUCTION PERIOD IS LONGER THAN 6 MONTHS, THEN AN ADDITIONAL APPLICATION OF PRE-EMERGENT WILL BE REQUIRED.
10. TOPSOIL: CONTRACTOR SHALL PROVIDE TOPSOIL AS REQUIRED FOR PLANTING AREAS. TOPSOIL SHALL BE A NATURAL, FRIABLE SOIL, REPRESENTATIVE OF PRODUCTIVE SOILS IN THE VICINITY. IT SHALL BE OBTAINED FROM WELL DRAINED AREAS AND SHALL BE FREE OF ADMIXTURE OF SUBSOIL AND FOREIGN MATTER OR OBJECTS LARGER THAN ONE INCH (1") IN ANY DIMENSION, TOXIC SUBSTANCES, AND ANY MATERIAL OR SUBSTANCE THAT MAY BE HARMFUL TO PLANT GROWTH.
11. SOIL AMENDMENT: NITRIFIED REDWOOD COMPOST. MINOR PROPORTION OF QUARTER-INCH PARTICLES SHALL BE ACCEPTABLE. MATERIAL SHALL BE NITROGEN STABILIZED. SUBMIT SAMPLE TO LANDSCAPE ARCHITECT ACCOMPANIED BY LABORATORY ORGANIC AMENDMENT ANALYSIS. PH, SALINITY, PARTICLE SIZE RATIOS, NITROGEN CONTENT, IRON CONTENT AND OTHER INFORMATION CONSIDERED ESSENTIAL. SALINITY LEVEL SHALL NOT EXCEED 2Ø. REFER TO THE SPECIFICATIONS FOR RATIOS AND TOLERANCES ACCEPTABLE.
12. COMMERCIAL FERTILIZER: COMPLETE OF WHICH PART OF ELEMENTS IS DERIVED FROM ORGANIC SOURCES, CONTAINING AVAILABLE FORM BY WEIGHT, WITH ANALYSIS OF SIX PERCENT (6%) NITROGEN, TWENTY PERCENT (2Ø%) PHOSPHORUS AND TWENTY PERCENT (2Ø%) POTASH (6-2Ø-2Ø). FERTILIZER SHALL BE IN GRANULAR FORM, USE BEST CROP MAKER OR APPROVED EQUAL. APPLY TO ALL PLANTING AREAS AS DESCRIBED IN SOIL PREPARATION, NOTE 13. COMMERCIAL FERTILIZER FOR ALL TREES, SHRUBS, AND GROUNDCOVERS SHALL BE SUPPLIED IN TABLET FERTILIZER FORM. PLACE IN THE BACKFILLED PLANTING HOLES PER MANUFACTURER'S INSTRUCTIONS AND MIX THOROUGHLY. APPLY IN THE FOLLOWING RATES FOR EACH PLANT.

ONE (1) GALLON	2 TABLETS	FIFTEEN (15) GALLON	6 TABLETS
FIVE (5) GALLON	3 TABLETS	TWENTY FOUR INCH (24") BOX	8 TABLETS

13. SOIL PREPARATION:
   A. AMEND ALL TREE, SHRUB, AND GROUNDCOVER PLANTING AREAS WITH:
      1) ORGANIC AMENDMENT AT AN APPLICATION RATE OF THREE CUBIC YARDS PER ONE THOUSAND SQUARE FEET (3 C.Y./1,ØØØ S.F.)
      2) COMMERCIAL FERTILIZER (6-2Ø-2Ø) AT AN APPLICATION RATE OF FOURTEEN POUNDS PER ONE THOUSAND SQUARE FEET (14#/1,ØØØ S.F.)
      3) SULFATE-SULFUR AT AN APPLICATION RATE OF ONE POUND AMMONIUM SULFATE PER ONE THOUSAND SQUARE FEET (1# /1,ØØØ S.F.)
   B. BACKFILL ALL PLANTING HOLES AS SHOWN ON THE PLANTING DETAILS WITH A UNIFORM MIXTURE CONSISTING OF: 75% NATIVE SOIL AND 25% SOIL AMENDMENT. ADD COMMERCIAL FERTILIZER AS REQUIRED PER NOTE 12.
14. MULCH: RED FIR WALK-ON BARK, 3/4" TO 1-1/2" SIZE, WITH NOT OVER 1Ø% WOOD FIBERS. FREE OF SALT, FOREIGN MATERIALS SUCH AS CLODS, COARSE OBJECTS, STICKS, WEEDS OR WEED SEEDS, AND OTHER DEBRIS CONSIDERED UNDESIRABLE. THE PH SHALL NOT EXCEED 6.5. SUBMIT SAMPLES TO LANDSCAPE ARCHITECT AND CITY CONSTRUCTION SERVICES FOR APPROVAL PRIOR TO PURCHASE AND DELIVERY. CONTRACTOR AND SUPPLIER SHALL ENSURE BARK MULCH MEETS LOCAL FIRE DEPARTMENT STANDARDS. VERIFICATION SHALL BE SUBMITTED TO LANDSCAPE ARCHITECT ENSURING BARK MULCH IS NON-FLAMMABLE. ALL SHRUB PLANTING AREAS ADJACENT TO RESIDENCES AND ALONG STREET FRONTAGES ARE TO RECEIVE A THREE-INCH (3") LAYER OF MULCH.
15. TOP DRESS: ALL SHRUB PLANTING AREAS ADJACENT TO RESIDENCE LOTS 31, 32, AND 71 SIDE YARDS IN THE GROVE VILLAGE 6, RESIDENCE LOT 103 SIDE YARD IN THE GROVE VILLAGE 5, AND ALONG DENALI CIRCLE AND ALBACORE WAY FRONTAGE PARKWAY STRIPS SHALL RECEIVE A THREE-INCH (3") MULCH OF RED FIR WALK-ON BARK.
16. PLANT MATERIAL INSPECTION: NOTIFY THE LANDSCAPE ARCHITECT AND CITY CONSTRUCTION SERVICES OF THE DELIVERY SCHEDULE IN ADVANCE SO THAT PLANT MATERIAL MAY BE INSPECTED UPON ARRIVAL AT THE JOBSITE. UNACCEPTABLE PLANT MATERIAL SHALL BE REMOVED IMMEDIATELY.
17. MAINTENANCE: THE CONTRACTOR SHALL MAINTAIN THE PROJECT FOR NINETY (9Ø) DAYS FOLLOWING APPROVAL TO BEGIN MAINTENANCE PERIOD. DURING THE ENTIRE MAINTENANCE PERIOD, REGULAR WATERING, WEEDING, LITTER REMOVAL, REPAIR OF STAKES OR TIES, SPRAYING FOR INSECTS/PESTS, ADJUSTMENTS TO IRRIGATION SYSTEM, ETC. SHALL BE PERFORMED. ANY PLANT MATERIAL THAT HAS DIED AFTER THE MAINTENANCE PERIOD HAS BEGUN WILL BE SUBJECT TO AN ADDITIONAL 9Ø-DAY MAINTENANCE PERIOD. ADDITIONAL MAINTENANCE PERIOD MAY EXTEND BEYOND THE FINAL ACCEPTANCE OF THE PROJECT.
18. CONTRACTOR MUST BE PREPARED TO UPRAISE UP TO FIVE (5) EACH OF ALL TREES, SHRUBS, AND GROUNDCOVERS FOR INSPECTION BY THE LANDSCAPE ARCHITECT FOR BACKFILL MIX AND FERTILIZER COMPLIANCE.
19. FINAL INSPECTION AND ACCEPTANCE: FINAL INSPECTION SHALL BE MADE AT THE CONCLUSION OF THE MAINTENANCE PERIOD. PRIOR TO FINAL INSPECTION, ALL AREAS ARE TO BE WEED-FREE AND ALL PLANTING AREAS ARE TO BE IN A HEALTHY, THRIVING CONDITION. NOTIFY THE LANDSCAPE ARCHITECT SEVEN (7) DAYS PRIOR TO ANTICIPATED DATE OF FINAL INSPECTION.
20. GUARANTEE:
   A. ALL TREES AND PLANT MATERIALS SHALL BE GUARANTEED TO TAKE ROOT AND GROW AND THRIVE UNTIL THE END OF THE MAINTENANCE PERIOD OR BEYOND THAT TIME UNTIL ACTIVE GROWTH IS EVIDENT.
   B. ALL TREES AND OTHER PLANT MATERIALS THAT DIE BACK AND LOSE THE FORM AND SIZE ORIGINALLY SPECIFIED SHALL BE REPLACED, EVEN THOUGH THEY HAVE TAKEN ROOT AND ARE GROWING AFTER THE DIE BACK. ALL TREES SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR.
21. UTILITIES: CONTRACTOR TO VERIFY THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO EXCAVATING FOR PLANTING. CONTRACTOR SHALL REPAIR ANY DAMAGE TO UTILITIES CAUSED BY HIS WORK AT NO COST TO THE OWNER. CONTACT U.S.A. AT 8ØØ/642-2444, 48 HOURS PRIOR TO EXCAVATING.
22. SUBMITTALS: CONTRACTOR TO SUBMIT DELIVERY TAGS FOR SOIL AMENDMENT AND COMMERCIAL FERTILIZER AS REQUIRED UNDER NOTES 9, 1Ø, 11, 12, 13, AND 14 TO THE LANDSCAPE ARCHITECT.
23. ALL TREES OF EACH SPECIES ARE TO BE UNIFORM IN SIZE, STATURE, BRANCHING PATTERN, AND STRUCTURE WITH MAIN LEADERS INTACT. NO EXCEPTIONS.
24. CONTRACTOR SHALL BUTTERFLY ROOTBALLS OF ALL TREES AND SHRUBS DURING PLANTING TO ELIMINATE ANY ROOTBOUND CONDITIONS.
25. CONTRACTOR SHALL FOLLOW PLANTING DETAILS AS SHOWN ON CONSTRUCTION DETAILS. SET ROOTBALLS OF ALL TREES AND SHRUBS TWO (2") INCHES ABOVE FINAL FINISH GRADE. NO EXCEPTIONS.
26. ALL LANDSCAPED AREAS SHALL BE MAINTAINED IN A HEALTHY AND WEED-FREE CONDITION. DEAD PLANT MATERIAL SHALL BE REPLACED IMMEDIATELY. ALL TREES SHALL BE MAINTAINED AND PRUNED IN ACCORDANCE WITH THE ACCEPTED PRACTICES OF THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) AS DIRECTED BY THE LANDSCAPE ARCHITECT.
27. ALL PLANTS DELIVERED SHALL HAVE LABELS INCLUDING BOTANICAL NAME AND VARIETIES IF APPLICABLE. NO EXCEPTIONS.
28. THE CONTRACTOR SHALL REMOVE NURSERY LEADER STAKES FROM ALL TREES AT THE TIME OF PLANTING. REFER TO DETAIL ON SHEET CD-2.
29. THE CITY OF ELK GROVE WILL NOT ACCEPT GRADES EXCEEDING 5:1 IN TURF AREAS. IF GRADES EXCEED THESE SLOPE STANDARDS AT THE TIME OF POST-GRADING INSPECTION OR PRE-PLANTING INSPECTION, THEN IT SHALL BE THE OWNER'S SOLE RESPONSIBILITY AND COST TO CONSTRUCT A RETAINING WALL (I.E. CONCRETE OR "KEYSTONE" TYPE). IF DURING CONSTRUCTION IT IS DETERMINED THAT GRADES EXCEED CITY STANDARDS, THEN IT SHALL BE THE RESPONSIBILITY OF THE OWNER AND/OR CONTRACTOR TO FIELD VERIFY THESE CONDITIONS AND SUBMIT REVISED PLANS TO THE CITY FOR REVIEW AND APPROVAL. ANY APPROVED PLAN THAT DOES NOT INCLUDE THE INSTALLATION OF A RETAINING WALL IS STILL REQUIRED TO CONSTRUCT WALL(S) SHOULD FIELD CONDITIONS REQUIRE IT. ALSO, THE CITY RETAINS THE RIGHT TO REQUIRE RE-GRADING, DRAIN INSTALLATION, AND/OR TYPE 3 CURB INSTALLATIONS AS NECESSARY TO SATISFY GRADING AND DRAINAGE CONCERNS OF THE CITY SOLELY AT THE COST TO THE OWNER AND/OR CONTRACTOR.
30. NO TREES SHALL BE PLANTED WITHIN FIVE FEET (5') OF UNDERGROUND WATER MAINS.
31. HYDROSEEDED NATIVE GRASSES: REFER TO SPECIFICATIONS, SHEET SP-3, FOR CHANNEL BOTTOM, CHANNEL BANKS, AND NEIGHBORHOOD POCKET PARK REQUIREMENTS AND ADDITIONAL INFORMATION. ALL WEEDS SHALL BE SPRAYED WITH HERBICIDE AND DEAD PRIOR TO PROCEEDING WITH HYDROSEEDING APPLICATIONS.
32. REFER TO "THE GROVE @ LAGUNA RIDGE - MITIGATION CHANNEL" IMPROVEMENT PLANS PREPARED BY WOOD RODGERS, INC., CIVIL ENGINEERS, FOR ALL GRADING, WALKS, TYPE 3 CURBS, DECOMPOSED GRANITE TRAILS, PEDESTRIAN FOOTBRIDGES, ADA RAMPS, IRRIGATION SLEEVES, POTABLE WATER SERVICE, METER, AND BACKFLOW PREVENTER LOCATIONS, OVERLAND RELEASE COBBLE AREAS, ETC.
33. PLANT MATERIAL SOURCE: THE CONTRACTOR SHALL SUBMIT A MINIMUM OF THREE (3) NURSERY SOURCES OF PLANT MATERIALS FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT WITHIN THIRTY (3Ø) DAYS FOLLOWING AWARD OF CONTRACT. CONTRACTOR SHALL PROVIDE PHOTOGRAPHS OF EACH SPECIES AVAILABLE FROM ALL NURSERIES CONSIDERED. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO SELECT THE NURSERY SOURCE(S) AND PLANT MATERIALS PURCHASED FROM EACH NURSERY.
34. CONTRACTOR SHALL CONTACT CITY CONSTRUCTION SERVICES, TELEPHONE NUMBER: 916/68T3Ø13, AND THE LANDSCAPE ARCHITECT AND/OR OWNER'S REPRESENTATIVE A MINIMUM OF 72 HOURS PRIOR TO BEGINNING WORK.
35. ALL LANDSCAPE AND IRRIGATION SHALL COMPLY WITH THE LAGUNA RIDGE SPECIFIC PLAN SUPPLEMENTAL DESIGN GUIDELINES, APPROVED AUGUST 3, 2ØØ5, WHERE REQUIRED OR APPROPRIATE OR NOT IN CONFLICT WITH THE US ARMY CORPS OF ENGINEERS' REQUIREMENTS FOR THE WETLAND MITIGATION REQUIREMENTS FOR LANDSCAPING.
36. ROOT BARRIERS: WHERE STREET TREES ARE WITHIN FIVE FEET OF THE SIDEWALK AND/OR CURB, PROVIDE ROOT CONTROL BARRIER PANELS ALONG THE BACK OF CURB/FACE OF SIDEWALK. PANELS SHALL BE TWELVE INCHES (12") DEEP ALONG SIDEWALK AND EIGHTEEN INCHES (18") DEEP ALONG CURB. CENTER PANELS AT EACH TREE TRUNK AND EXTEND TEN FEET (1Ø') IN EACH DIRECTION. REFER TO DETAIL 6, SHEET CD-2 FOR ADDITIONAL INFORMATION.
37. CONTRACTOR SHALL SPRAY SPOTRETE TURF FUNGICIDE AND ANIMAL REPELLENT OR PROVIDE REPELLEX SYSTEMIC TABLETS (14-2-2) TO ALL SHRUB PLANTS FOR PROTECTION AGAINST DEER AND RABBITS AS REQUIRED.
38. NO TREES ON THIS PROJECT ARE PLANTED UNDER POWER LINES.
39. PROTECTION OF EXISTING TREES AND LANDSCAPING:
   A. CONTRACTOR SHALL REPLACE ANY EXISTING PLANT MATERIALS DAMAGED DUE TO INSTALLATION OF IRRIGATION EQUIPMENT AND PLANT MATERIALS. ALL PLANT MATERIALS SHALL BE REPLACED WITH THE SAME KIND AND SIZE DAMAGED BY CONTRACTOR AS DIRECTED BY THE OWNER OR LANDSCAPE ARCHITECT. NO EXCEPTIONS)
   B. CONTRACTOR SHALL VERIFY EXISTING TREE DRIPLINES WITH THESE PLANS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. WHERE THERE ARE CONFLICTS, LANDSCAPE ARCHITECT SHALL MAKE ON SITE MODIFICATIONS AS NECESSARY.
   C. THE CONTRACTOR SHALL OBSERVE CAUTION AROUND THE EXISTING TREES, THE FOLLOWING CRITERIA SHALL BE MET DURING CONSTRUCTION:
      1. ANY DAMAGE TO EXISTING TREES DURING CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY. ANY TREE THAT DIES DURING CONSTRUCTION OR MAINTENANCE PERIOD SHALL BE REPLACED WITH A TREE OF MATCHED SPECIFICATIONS.
      2. DURING CONSTRUCTION, NO STORAGE OF MATERIALS, PARKING OF CARS, JOB SHACKS, ETC. SHALL BE PLACED BENEATH THE DRIPLINE OF THE TREES.
40. TREES, PLANTS, UTILITIES, AND EXISTING IMPROVEMENTS THAT ARE NOT TO BE REMOVED SHALL BE PROTECTED FROM INJURY OR DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATION. THE CONTRACTOR SHALL REPLACE DAMAGED LANDSCAPING, IMPROVEMENTS, OR UTILITIES IN KIND OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
41. REFER TO LAGUNA RIDGE - CIVIC CENTER DRIVE AND BIG HORN BOULEVARD LANDSCAPE CONSTRUCTION PLANS PREPARED BY CRAIG PARK ASSOCIATES FOR EXISTING STREET TREES AND LANDSCAPE CORRIDOR LANDSCAPING ADJACENT TO BIG HORN BOULEVARD AND COORDINATE AS REQUIRED.
42. SALIX LAEVIGATA (RED WILLOW) AND SALIX SPECIES (WILLOW CUTTINGS) TREES HAVE BEEN ALREADY PURCHASED FROM HARTLAND NURSERY. CONTRACTOR SHALL CONTACT TONI HART AT TELEPHONE NUMBER: 916/775.4021 FOR ADDITIONAL INFORMATION.
43. EXACT LIMITS OF CHANNEL BOTTOM LOCATION SHALL BE IDENTIFIED IN THE FIELD BY THE OWNER'S REPRESENTATIVE, US ARMY CORPS OF ENGINEERS, AND HYDROSEEDER PRIOR TO HYDROSEEDING.

REFER TO LANDSCAPE NOTES, SHEET LN-1, FOR SACRAMENTO COUNTY WATER AGENCY IRRIGATION/LANDSCAPING PLAN WATER NOTES (MARCH 2ØØ5) FOR POTABLE WATER, CITY OF ELK GROVE - LANDSCAPE CONSTRUCTION PROCEDURES, CITY OF ELK GROVE GENERAL NOTES, CITY OF ELK GROVE EROSION AND SEDIMENT CONTROL NOTES, AND IRRIGATION NOTES.

REFER TO IRRIGATION PLAN, SHEET LI-1, FOR IRRIGATION LEGEND AND IRRIGATION PLAN, SHEET LI-4, FOR IRRIGATION SCHEDULE.

REFER TO PLANTING PLAN, SHEET LP-1, FOR PLANTING LEGEND, PLANT LIST, OAK TREE MITIGATION, AND WETLAND MITIGATION.

REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
Signature
Date
STATE OF CALIFORNIA

No.	Description	Engr Init	CITY APPROVAL By	Date

CRAIG PARK ASSOCIATES REVISIONS	BY

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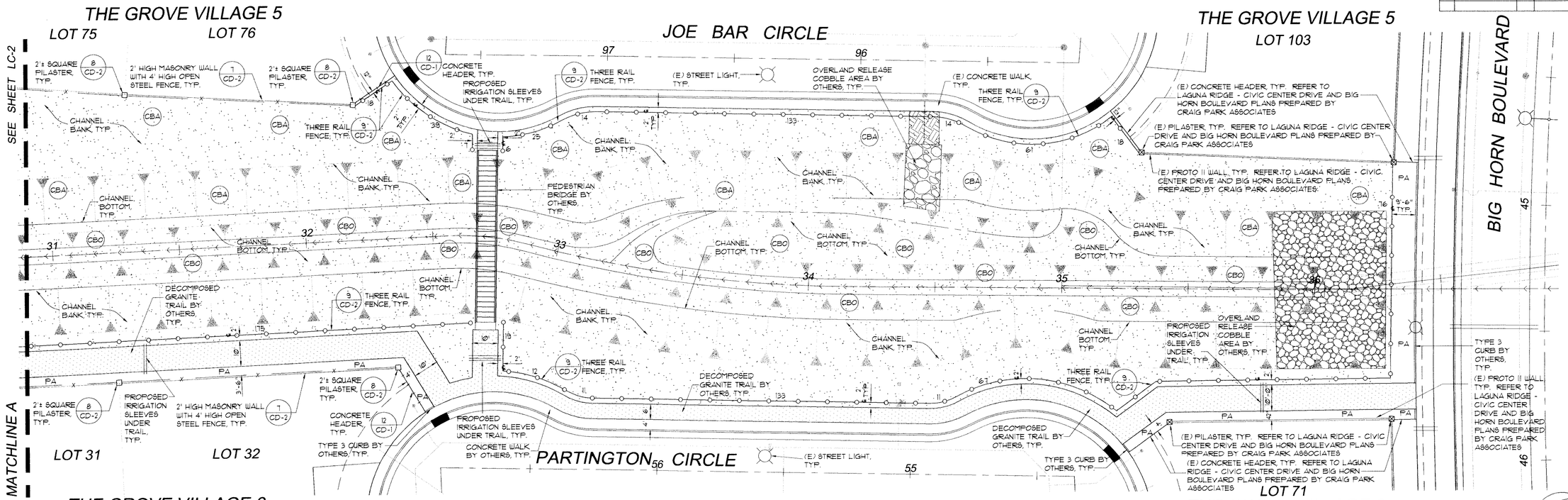
916/444-2026
FAX 916/444-1686

LANDSCAPE NOTES

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYMEN & BARDIS DEVELOPMENT, LLC

Date 6-20-06
Scale NONE
Drawn
Job
Sheet 3
LN-2
Of 22 Sheets

No.	Description	Engr Init	CITY APPROVAL By	Date



LAYOUT AND CONSTRUCTION NOTES

1. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL CONDITIONS PRIOR TO COMMENCING WORK. ANY INACCURACIES, DEVIATIONS, OR OMISSIONS WHICH AFFECT THE SCOPE OF WORK SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER/LANDSCAPE ARCHITECT PRIOR TO COMMENCING WORK.
2. REFER TO "THE GROVE @ LAGUNA RIDGE - MITIGATION CHANNEL" IMPROVEMENT PLANS PREPARED BY WOOD RODGERS, INC., CIVIL ENGINEERS FOR ALL GRADING, IRRIGATION PVC PIPING SLEEVES UNDER ROADS, WALKS, AND DRIVEWAYS, POTABLE WATER SERVICE, METER, AND BACKFLOW PREVENTER LOCATIONS, CONCRETE WALK AND TYPE 3 CURB DETAILS, DECOMPOSED GRANITE TRAILS, PEDESTRIAN FOOTBRIDGES, STREET LIGHT LOCATIONS, OVERLAND RELEASE COBBLE AREAS, AND OTHER ADDITIONAL INFORMATION.
3. CONTRACTOR SHALL LAYOUT FORMS FOR CONCRETE HEADERS, CONCRETE PAVING, AND CONCRETE BENCH PADS FOR APPROVAL BY LANDSCAPE ARCHITECT, OWNER'S REPRESENTATIVE, AND CITY CONSTRUCTION SERVICES PRIOR TO INSTALLATION. ANY UNACCEPTABLE INSTALLATION PRIOR TO APPROVAL MAY RESULT IN REPLACEMENT AT THE EXPENSE OF THE CONTRACTOR.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR MATCHING AND ALIGNING FLUSH ALL NEW CONCRETE WITH EXISTING ITEMS, INCLUDING SIDEWALKS, ACCESSIBLE RAMPS, CURB RETURNS, DECOMPOSED GRANITE TRAILS, VAULTS, AND MANHOLES.
5. ALL NEW CONCRETE WALKS SHALL BE BUILT ACCORDING TO CITY OF ELK GROVE STANDARDS. ALL WALKS SHALL HAVE A CROSS SLOPE OF TWO PERCENT (2%) AND A LONGITUDINAL SLOPE OF FIVE PERCENT (5%) MAXIMUM.
6. TYPE 3 CURBS ARE BY OTHERS AND WILL BE INSTALLED AT BACK OF WALK WHERE PLANTING AREAS ABUT CONCRETE WALKS. REFER TO THE GROVE @ LAGUNA RIDGE - MITIGATION CHANNEL IMPROVEMENT PLANS PREPARED BY WOOD RODGERS, INC. FOR ADDITIONAL INFORMATION.
7. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN ON THESE DRAWINGS WITH IRRIGATION AND PLANTING WORK AS NECESSARY.
8. CALL U.S.A. TWENTY FOUR HOURS (24 HRS.) BEFORE DIGGING AT 800/642-2444 FOR LOCATIONS OF ALL EXISTING UTILITIES WITHIN THE PROJECT CONSTRUCTION SITE.
9. THE CITY OF ELK GROVE WILL NOT ACCEPT GRADES EXCEEDING 5:1 IN TURF AREAS OR 4:1 IN SHRUB AREAS. IF GRADES EXCEED THESE SLOPE STANDARDS AT THE TIME OF POST-GRADING INSPECTION OR PRE-PLANTING INSPECTION, THEN IT SHALL BE THE OWNER'S SOLE RESPONSIBILITY AND COST TO CONSTRUCT A RETAINING WALL (I.E.: CONCRETE OR 'KEYSTONE' TYPE). IF DURING CONSTRUCTION IT IS DETERMINED THAT GRADES EXCEED CITY STANDARDS, THEN IT SHALL BE THE RESPONSIBILITY OF THE OWNER AND/OR CONTRACTOR TO FIELD VERIFY THESE CONDITIONS AND SUBMIT REVISED PLANS TO THE CITY FOR REVIEW AND APPROVAL. ANY APPROVED PLAN THAT DOES NOT INCLUDE THE INSTALLATION OF A RETAINING WALL IS STILL REQUIRED TO CONSTRUCT WALL(S) SHOULD FIELD CONDITIONS REQUIRE IT. ALSO, THE CITY RETAINS THE RIGHT TO REQUIRE RE-GRADING, DRAIN INSTALLATION, AND/OR TYPE 3 CURB INSTALLATIONS AS NECESSARY TO SATISFY GRADING AND DRAINAGE CONCERNS OF THE CITY SOLELY AT THE COST TO THE OWNER AND/OR CONTRACTOR.
10. ALL SMALL FLUSH MOUNT ELECTRICAL STREETLIGHT AND SERVICE BOXES MUST BE ADJUSTED TO FINAL LANDSCAPE GRADE BY THE DEVELOPER'S CONTRACTOR. ALL PRIMARY JUNCTION BOXES, PAD VAULTS, SPLICE BOXES, TRANSFORMER PADS, AND STREETLIGHT CONTROLLER LOCATIONS MUST HAVE LANDSCAPE GRADE ADJUSTMENTS TO MEET THE GRADE OF THESE EXISTING FACILITIES.
11. ALL GRADING INFORMATION, INCLUDING EXISTING AND PROPOSED GRADES, EROSION CONTROL NOTES, BMPs FOR EROSION AND SEDIMENT CONTROL, WATTLES, BENCHMARKS, ETC. ARE AS PER WOOD RODGERS, INC. IMPROVEMENT PLANS. WDID NUMBER FOR THIS PROJECT IS 5S34C332428.
12. PUBLIC SAFETY AND TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 6-13 OF THE STANDARD CONSTRUCTION SPECIFICATIONS AND AS DIRECTED BY CITY CONSTRUCTION SERVICES. SAFE VEHICULAR AND PEDESTRIAN ACCESS SHALL BE PROVIDED AT ALL TIMES DURING CONSTRUCTION.
13. CONTRACTOR SHALL CONTACT CITY INSPECTOR, CONSTRUCTION SERVICES, TELEPHONE NUMBER: 916/681.3013, AND THE LANDSCAPE ARCHITECT AND/OR OWNER'S REPRESENTATIVE A MINIMUM OF 72 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION IMPACTING CITY MAINTAINED AREAS TO ARRANGE AN ON-SITE PRE-CONSTRUCTION MEETING.
14. ALL LANDSCAPE AND IRRIGATION SHALL COMPLY WITH THE LAGUNA RIDGE SPECIFIC PLAN SUPPLEMENTAL DESIGN GUIDELINES, APPROVED AUGUST 3, 2005, WHERE REQUIRED OR APPROPRIATE OR NOT IN CONFLICT WITH THE US ARMY CORPS OF ENGINEERS' REQUIREMENTS FOR THE WETLAND MITIGATION REQUIREMENTS FOR LANDSCAPING FOR THIS PROJECT.
15. CONTRACTOR SHALL REPLACE ANY EXISTING PLANT MATERIALS DAMAGED DUE TO INSTALLATION OF CONCRETE HEADERS, IRRIGATION EQUIPMENT, AND PLANT MATERIALS. ALL PLANT MATERIALS SHALL BE REPLACED WITH THE SAME KIND AND SIZE DAMAGED BY CONTRACTOR AS DIRECTED BY THE OWNER OR LANDSCAPE ARCHITECT. NO EXCEPTIONS!
16. CONTRACTOR SHALL VERIFY EXISTING TREE DRIPLINES WITH THESE PLANS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. WHERE THERE ARE CONFLICTS, LANDSCAPE ARCHITECT SHALL MAKE ON SITE MODIFICATIONS AS NECESSARY.
17. THE CONTRACTOR SHALL OBSERVE CAUTION AROUND THE EXISTING TREES, THE FOLLOWING CRITERIA SHALL BE MET DURING CONSTRUCTION:
    A. ANY DAMAGE TO EXISTING TREES DURING CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY. ANY TREE THAT DIES DURING CONSTRUCTION OR MAINTENANCE PERIOD SHALL BE REPLACED WITH A TREE OF MATCHED SPECIFICATIONS.
    B. DURING CONSTRUCTION, NO STORAGE OF MATERIALS, PARKING OF CARS, JOB SHACKS, ETC. SHALL BE PLACED BENEATH THE DRIPLINE OF THE TREES.
18. TREES, PLANTS, UTILITIES, AND EXISTING IMPROVEMENTS THAT ARE NOT TO BE REMOVED SHALL BE PROTECTED FROM INJURY OR DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATION. THE CONTRACTOR SHALL REPLACE DAMAGED LANDSCAPING, IMPROVEMENTS, OR UTILITIES IN KIND.
19. THE INTENT OF THE 2' HIGH MASONRY WALL AND 4' HIGH OPEN STEEL FENCE DETAIL (DETAIL 7, SHEET CD-2) IS TO SHOW AN ELEVATION OF THE FENCE. REFER TO BASALITE STRUCTURAL DRAWINGS, SHEET S-1, FOR ADDITIONAL INFORMATION.
20. EXACT LIMITS OF CHANNEL BOTTOM LOCATION SHALL BE IDENTIFIED IN THE FIELD BY THE OWNER'S REPRESENTATIVE, US ARMY CORPS OF ENGINEERS, AND HYDROSEEDER PRIOR TO HYDROSEEDING.
21. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

LEGEND

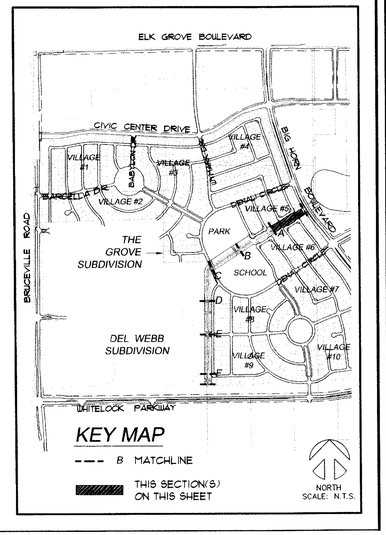
- PROPOSED HYDROSEEDED CHANNEL BOTTOM, CHANNEL BANKS, AND NEIGHBORHOOD POCKET PARK AREAS. REFER TO PLANTING NOTE 31 AND SPECIFICATIONS.
- EXISTING PROTO II WALL
- EXISTING PILASTER
- THREE RAIL FENCE (9 / CD-2)
- 93 LENGTH OF THREE RAIL FENCE IN FEET
- 2' HIGH MASONRY WALL AND 4' HIGH OPEN STEEL FENCE (7 / CD-2)
- 2'± SQUARE PILASTER (8 / CD-2)
- 12" CONCRETE HEADER (12 / CD-1)
- RECYCLED PLASTIC HEADER (13 / CD-1)
- THREE RAIL FENCE BY OTHERS
- PROPOSED SCORELINE
- CONCRETE PAVING (14 / CD-1)
- PROPOSED EXPANSION JOINT
- PEDESTRIAN FOOT BRIDGE BY OTHERS
- DECOMPOSED GRANITE TRAIL BY OTHERS
- TYPE 3 CURB BY OTHERS
- CONCRETE WALK BY OTHERS
- (10) RADIUS OF CURVE IN FEET
- FIRE HYDRANT BY OTHERS
- LIGHT STANDARD BY OTHERS
- # / S1 PLANT QUANTITY / PLANT KEY (SEE PLANT LIST)
- 1 / CD-1 DETAIL NUMBER / SHEET NUMBER
- CBA HYDROSEEDING MIX FOR CHANNEL BANKS
- CBO HYDROSEEDING MIX FOR CHANNEL BOTTOM
- NP HYDROSEEDING MIX FOR NEIGHBORHOOD POCKET PARK
- IRRIGATION SLEEVE. REFER TO IRRIGATION PLANS FOR ADDITIONAL INFORMATION.

℄	CENTERLINE
CLR.	CLEAR
CJ	COLD JOINT
(E)	EXISTING
EJ	EXPANSION JOINT
MAX.	MAXIMUM
MIN.	MINIMUM
N.I.C.	NOT IN CONTRACT
O.C.	ON CENTER
PA	PLANTING AREA
PT	POINT OF TANGENCY
R	RADIUS
SL	SCORELINE
SQ.	SQUARE
TYP.	TYPICAL

REGISTERED LANDSCAPE ARCHITECT — CRAIG D. PARK — No. 1719 — Exp. May 31, 2008 — Signature — Date — STATE OF CALIFORNIA

NORTH

SCALE: 1" = 20'



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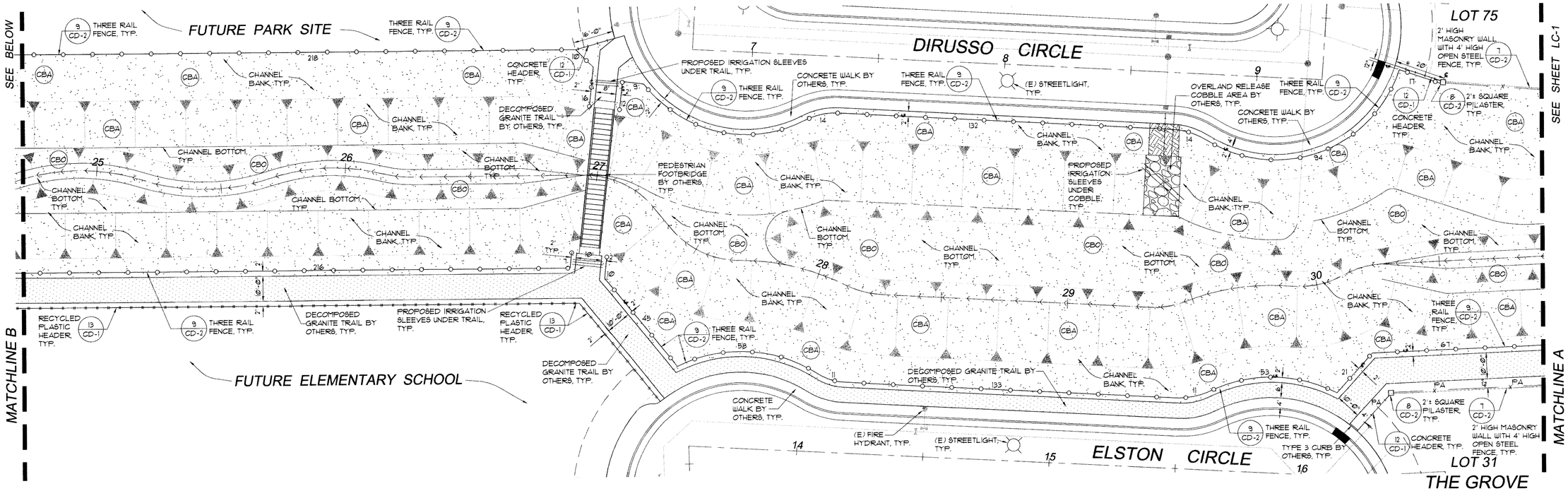
LAYOUT AND CONSTRUCTION PLAN

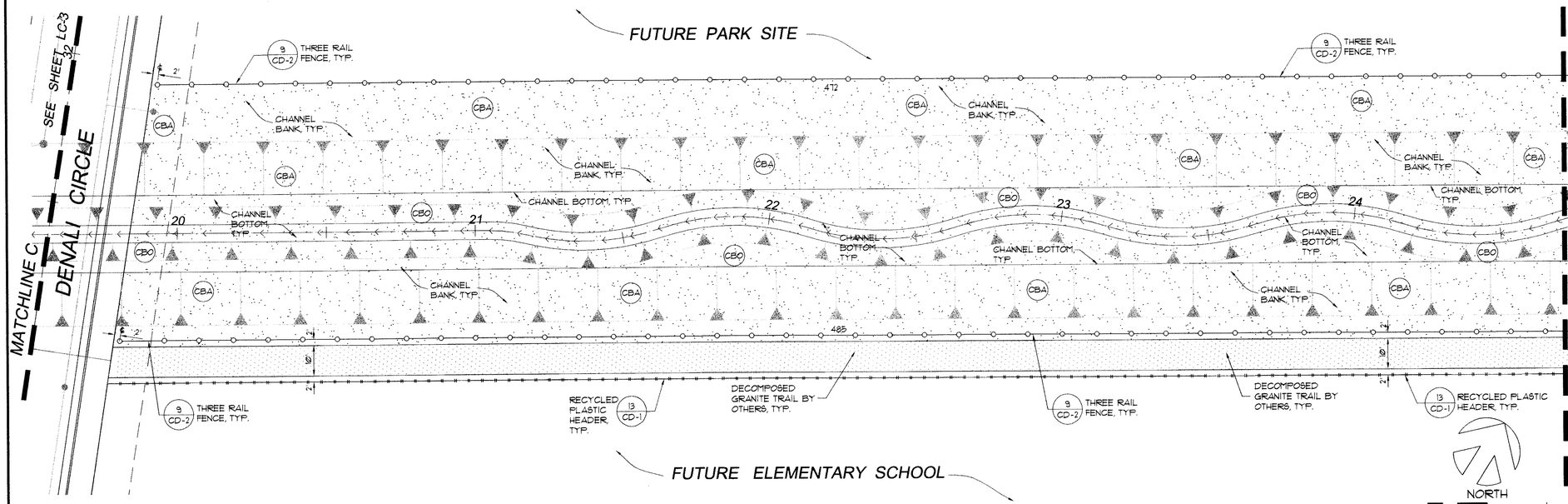
PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date	6-20-06
Scale	1" = 20'
Drawn	
Job	
Sheet #	LC-1
Of	22 Sheets

No.	Description	Engr Init	CITY APPROVAL By	Date

THE GROVE VILLAGE 5





REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
Signature
Date
STATE OF CALIFORNIA

NORTH
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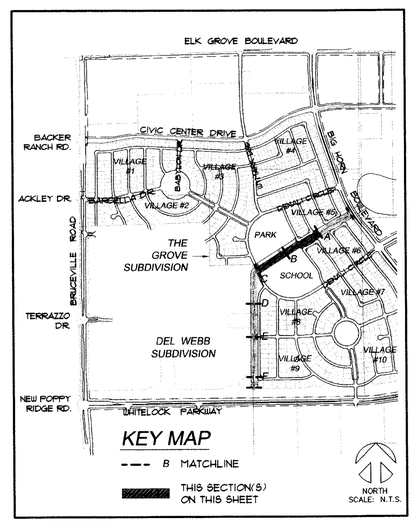
SCALE: 1" = 20'



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LAYOUT AND CONSTRUCTION PLAN

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date	6-20-06
Scale	1" = 20'
Drawn	
Job	
Sheet	5

LC-2

Of 22 Sheets

REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
Signature
Date
STATE OF CALIFORNIA

No.	Description	Engr Init	CITY APPROVAL By	Date

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LAYOUT AND CONSTRUCTION PLAN

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

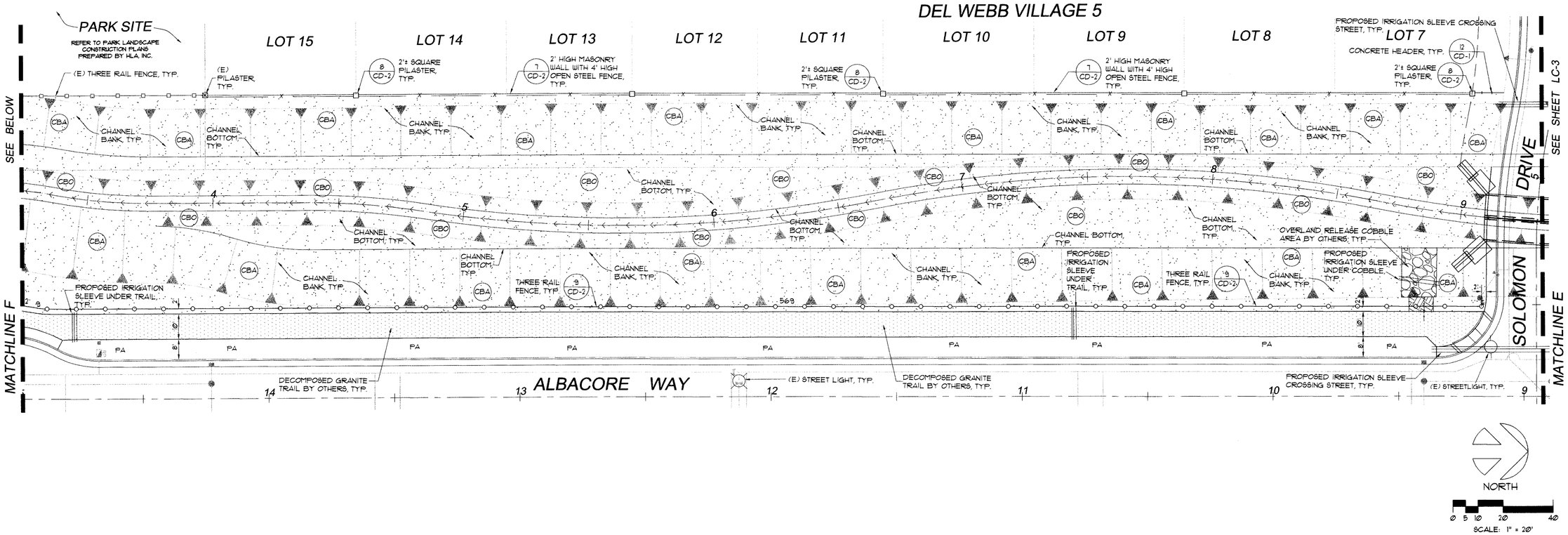
DEL WEBB VILLAGE 4
LOT 59 LOT 60 LOT 61 LOT 62 LOT 63 LOT 64 LOT 65 LOT 66 LOT 67 LOT 68
SEE BELOW
MATCHLINE D
ALBACORE WAY
DENALI CIRCLE
MATCHLINE C
SEE SHEET LC-2
LOT 7 LOT 8 LOT 9
THE GROVE VILLAGE 8
NORTH
SCALE: 1" = 20'

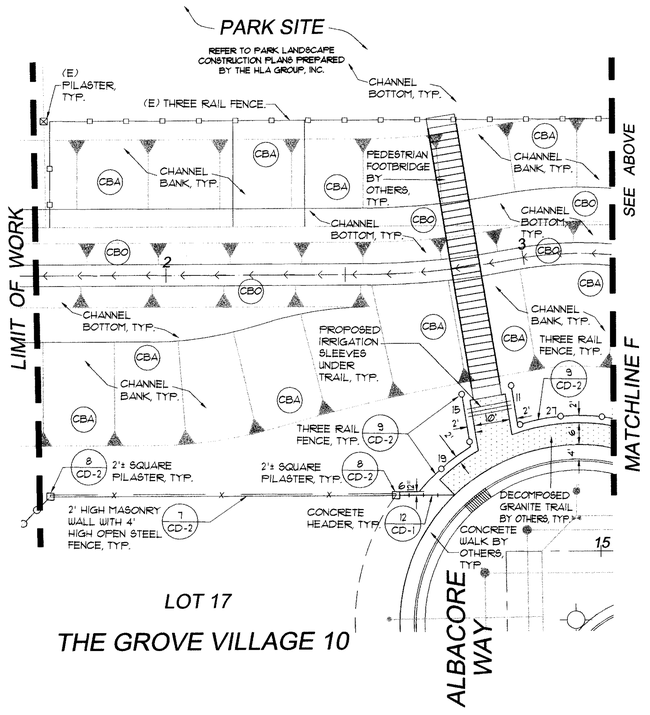
DEL WEBB VILLAGE 5
LOT 6
DEL WEBB VILLAGE 4
LOT 57 LOT 58
SEE SHEET LC-4
SOLOMON DRIVE
MATCHLINE E
PARK SITE
REFER TO PARK LANDSCAPE CONSTRUCTION PLANS PREPARED BY THE HLA GROUP, INC.
ALBACORE WAY
SEE ABOVE
MATCHLINE D
SCALE: 1" = 20'

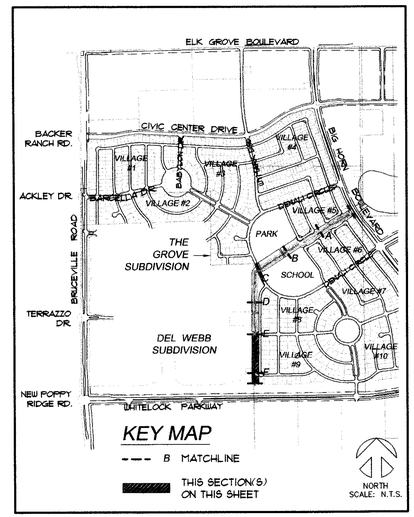
KEY MAP
B MATCHLINE
THIS SECTION(S) ON THIS SHEET
NORTH
SCALE: N.T.S.

Date	6-20-06
Scale	1" = 20'
Drawn	
Job	
Sheet 6	LC-3
Of	22 Sheets

No.	Description	Engr Init	CITY APPROVAL By	Date







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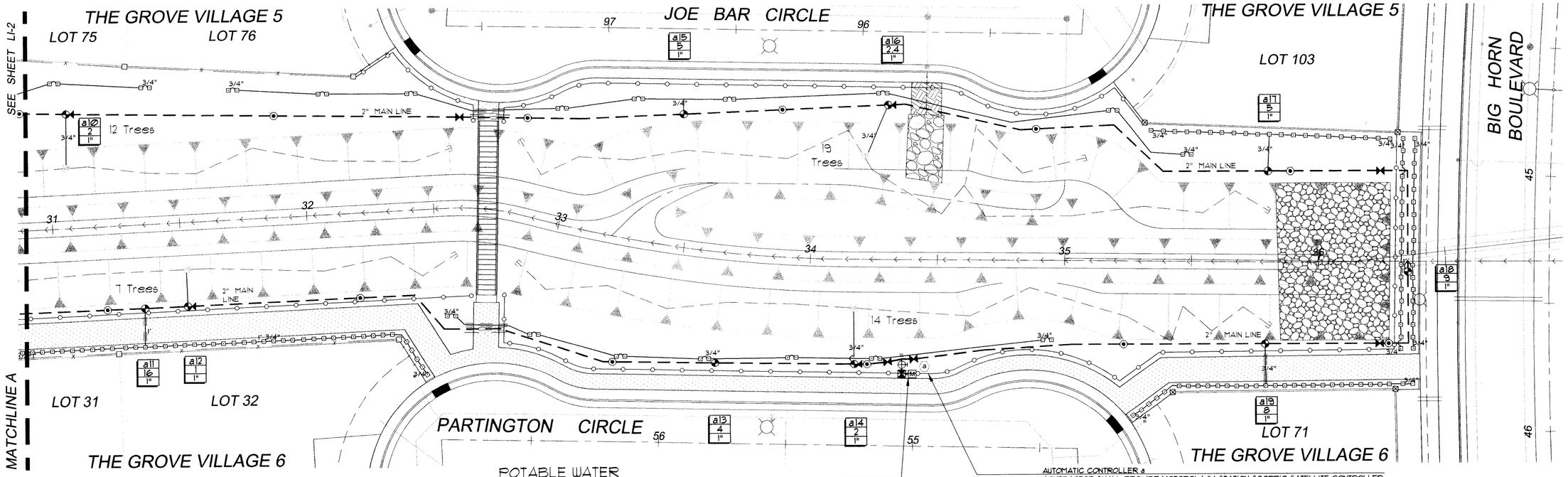
LAYOUT AND CONSTRUCTION PLAN

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date 6-20-06
Scale 1" = 20'
Drawn
Job
Sheet 7
LC-4
Of 22 Sheets

No.	Description	Engr Init	CITY APPROVAL By	Date



POTABLE WATER

POINT OF CONNECTION:
CONTRACTOR SHALL CONNECT TO EXISTING 1-½" POTABLE IRRIGATION METER AND EXISTING 1-½" BACKFLOW PREVENTER. INSTALL ARAD HYDROMETER PER LEGEND AND CONNECT TO IRRIGATION SYSTEM. REFER TO 'THE GROVE AT LAGUNA RIDGE - MITIGATION CHANNEL' IMPROVEMENT PLANS PREPARED BY WOOD RODGERS, INC. FOR LOCATIONS OF SERVICE, METER, AND BACKFLOW PREVENTER. VERIFY LOCATIONS IN THE FIELD.

EXISTING STATIC PRESSURE	35 PSI
TOTAL MINIMUM PRESSURE REQUIREMENT FOR THIS SYSTEM	35 PSI
MAXIMUM DEMAND FLOW	16 GPM

AUTOMATIC CONTROLLER a
CONTRACTOR SHALL PROVIDE MOTOROLA 24 STATION SCORPIO SATELLITE CONTROLLER ASSEMBLY, MODEL NO. SX-24-RX-S24M-AHB-15BMU, WITH UHF RADIO AND KEYBOARD TERMINAL, AS PACKAGED BY CENTRAL CONTROL SYSTEMS. MOUNT CONTROLLER IN STRONG BOX ENCLOSURE, MODEL SB-2486/120V, LOCATED AS INDICATED ON PLAN. REFER TO DETAIL ON SHEET CD-1 FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL CONTACT PHIL GIEBEL OF CENTRAL CONTROL SYSTEMS, TELEPHONE NUMBER: 530/662-6841. FINAL LOCATION OF CONTROLLER ENCLOSURE SHALL BE APPROVED BY LANDSCAPE ARCHITECT, OWNER'S REPRESENTATIVE, AND CITY CONSTRUCTION SERVICES IN THE FIELD PRIOR TO INSTALLATION.
SMUD SERVICE NOTIFICATION NUMBER IS 3013980G.

NORTH
0 5 10 20 40
SCALE: 1" = 20'

REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
Signature
Date
STATE OF CALIFORNIA

IRRIGATION LEGEND

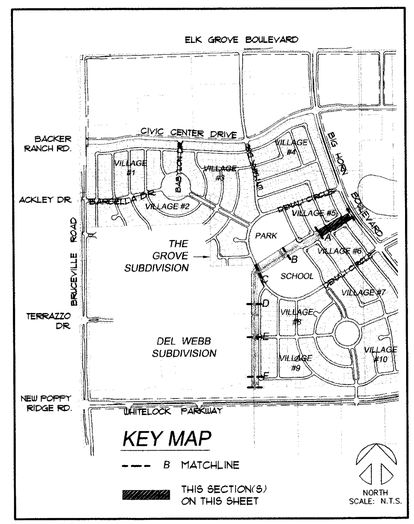
SYMBOL	MANUFACTURER	PSI	GPM	RADIUS	PRECIP. RATE
	'RAIN BIRD' 1806-SAM-12H/12Q, 6" POP-UP SPRAY HEAD 'RAIN BIRD' 1806-SAM-12VAN-H/12VAN-Q, 6" POP-UP SPRAY HEAD	15 PSI 15 PSI	0.90/10.45 0.90/10.45	9' 9'	2.14 2.14
	'RAIN BIRD' 1806-SAM-8H-FLT/8Q-FLT 6" POP-UP SPRAY HEAD	15 PSI	0.56/10.29	7'	2.28
	1401 PRESSURE COMP. BUBBLER BY RAIN BIRD. INSTALL BUBBLER HEAD 1" ABOVE GRADE ON A RISER. INSTALL KBI CHECK VALVE. INSTALL TWO PER TREE AND ONE PER SHRUB PLANT.	20 PSI	0.25	3'	2.07
(NOT SHOWN)	EMISSION DEVICE-RAINBIRD XERI-BUG EMITTER. INSTALL MODEL XB-20 (2 GPH) WITH BARBED FITTINGS BOTH ENDS. PROVIDE SIX EMITTERS FOR EACH 15 GALLON TREE, PROVIDE FOUR EMITTERS FOR EACH 5 GALLON TREE ON FOUR SIDES OF ROOT BALL, SPACED EVENLY AROUND BASE OF TREE.	25 PSI 25 PSI	4 X 1 (GPH) 4 X 1 (GPH)	N/A N/A	

SYMBOL	MANUFACTURER
(NOT SHOWN)	POLYETHYLENE DISTRIBUTION TUBING - 1/4" (.250" O.D.) WITH BARBED FITTINGS BY RAINBIRD.
— — —	POLYETHYLENE SUPPLY TUBING - 3/4" (.940" O.D.) WITH COMPRESSION FITTINGS BY RAINBIRD.
	INDICATES RAINBIRD FLUSHING END CAP, MODEL 700 CF-21. PLACE AT THE END OF EACH DRIP SUPPLY TUBE IN A ROUND 6" PLASTIC VALVE BOX WITH LID.
	INDICATES VALVE BOX WITH PVC TO POLY TUBING CONNECTOR TO BE INSTALLED IN TREE PLANTING AREA.
	PVC CLASS 200, SIZE AS NOTED ON PLAN.
— — —	PVC CLASS 315 FOR PRESSURE MAIN SIZED 2" AND LARGER AND PVC SCHEDULE 40 FOR PRESSURE MAIN SIZED 1-1/2" AND SMALLER. SIZE AS NOTED ON PLAN.
— — —	EXISTING OR PROPOSED SCHEDULE 40 SLEEVE. REFER TO 'THE GROVE AT LAGUNA RIDGE - MITIGATION CHANNEL' IMPROVEMENT PLANS PREPARED BY WOOD RODGERS, INC. FOR LOCATION OF SLEEVES CROSSING UNDER STREETS AND OVERLAND RELEASE COBBLE AREAS. CONTRACTOR SHALL INSTALL ALL OTHER SLEEVES UNDER PAVED WALKWAYS AND DECOMPOSED GRANITE TRAILS WHETHER SHOWN OR NOT. ALL IRRIGATION SLEEVES SHALL BE TWICE THE DIAMETER THE PIPE BEING SLEEVED.
— — —	EXISTING OR PROPOSED CONDUIT FOR CONTROL WIRES, BMU-CIR HYDROMETER WIRES, OR SERVICE METER WIRES: SCHEDULE 40 PVC ELECTRICAL CONDUIT. REFER TO 'THE GROVE AT LAGUNA RIDGE - MITIGATION CHANNEL' IMPROVEMENT PLANS PREPARED BY WOOD RODGERS, INC. FOR LOCATIONS. VERIFY LOCATIONS IN THE FIELD.
	T-111, THREADED GATE VALVE BY NIBCO FOR VALVE 2" AND SMALLER (LINE SIZE). F-619-RW FLANGED GATE VALVE BY NIBCO FOR VALVES 2-½" SIZE AND LARGER (LINE SIZE). INSTALL IN A VALVE BOX. REFER TO DETAIL ON SHEET CD-1.
	44RC, 1" QUICK COUPLER VALVE BY RAINBIRD. INSTALL IN LOCKING VALVE BOX PER DETAIL ON SHEET CD-1.
	RAIN BIRD EFB-CP-PRS-D SERIES, REMOTE CONTROL VALVE. CONTRACTOR SHALL INSTALL A MATCO PVC BALL VALVE UPSTREAM OF RCV. BOTH ARE TO BE SIZED AS NOTED ON PLAN. INSTALL T. CHRISTY IDENTIFICATION TAGS CORRESPONDING TO CONTROLLER STATION NUMBER ON ALL VALVES. INSTALL ALL VALVES IN VALVE BOX. REFER TO DETAIL ON SHEET CD-1.

SYMBOL	MANUFACTURER
	RAIN BIRD EFB-CP-PRS-D SERIES REMOTE CONTROL VALVE WITH PRESSURE REGULATOR. INSTALL WITH AMIAD 112-0059-100/OR 115-0059-100 (COMPACT) SCREEN FILTER WITH 155 MESH. SIZE OF VALVE AND FILTER AS NOTED ON PLAN. SET THE PRESSURE REGULATOR FOR THE REQUIRED PRESSURE OF THE FARTHEST HEAD. REFER TO DETAIL ON CD-1.
	BMU-CIR HYDROMETER, 1-½" SIZE BY ARAD LTD. CONTRACTOR SHALL INSTALL BMU-CIR HYDROMETER AFTER THE BACKFLOW PREVENTER AS SHOWN AND PER DETAIL. PROVIDE BLACK VARIABLE 18 GAUGE/3 STRAND IRRIGATION LOOM WIRE FROM THE ARAD ASSEMBLY TO THE IRRIGATION CONTROLLER. HYDROMETER SHALL BE CONNECTED TO THE LAST STATION ON EACH CONTROLLER PER MANUFACTURER'S SPECIFICATIONS. INSTALLATION PROCEDURES SHALL CONFORM WITH THE SACRAMENTO COUNTY AND THE CITY OF ELK GROVE STANDARDS. REFER TO DETAIL ON SHEET CD-1.
M	EXISTING 1-½" WATER METERS. REFER TO 'THE GROVE AT LAGUNA RIDGE - MITIGATION CHANNEL' IMPROVEMENT PLANS PREPARED BY WOOD RODGERS, INC. FOR EXACT LOCATIONS OF IRRIGATION SERVICES AND METERS.
(a)	MOTOROLA 24 STATION SCORPIO SATELLITE CONTROLLER ASSEMBLY, PART NO. SX-24-RX-S24M-AHB-15BMU, CONSISTING OF A F2848A CONTROLLER ASSEMBLY AND UHF RADIO, MOUNTED IN A STRONG BOX METERED ENCLOSURE, MODEL NUMBER: SB-2486/120V AS PACKAGED BY CENTRAL CONTROL SYSTEMS. CONTACT PHIL GIEBEL AT 530/662-6841. ELECTRIC SERVICE IS INSTALLED IN THE BACK OF STRONG BOX ENCLOSURE. FOLLOW SMUD ELECTRIC SERVICE REQUIREMENTS FOR METER INSTALLATION.
(b)	MOTOROLA 32 STATION SCORPIO SATELLITE CONTROLLER ASSEMBLY, PART NO. SX-32-RX-S24M-AHB-15BMU, CONSISTING OF A F2848A CONTROLLER ASSEMBLY AND UHF RADIO, MOUNTED IN A STRONG BOX METERED ENCLOSURE, MODEL NUMBER: SB-2486/120V AS PACKAGED BY CENTRAL CONTROL SYSTEMS. CONTACT PHIL GIEBEL AT 530/662-6841. ELECTRIC SERVICE IS INSTALLED IN THE BACK OF STRONG BOX ENCLOSURE. FOLLOW SMUD ELECTRIC SERVICE REQUIREMENTS FOR METER INSTALLATION
J	SMUD 'J' BOX ELECTRIC SERVICE POINT PROVIDED BY OTHERS. VERIFY LOCATION IN THE FIELD.
	EXISTING REDUCED PRESSURE BACKFLOW ASSEMBLY BY OTHERS, 1-½" SIZE. INSTALL IN A CUSTOM STAINLESS STEEL INSULATED TYPE CAGE ENCLOSURE, MODEL NO. PW/E1AW, BY PLACER WATER WORKS, INC. TELEPHONE NUMBER: 916/773-2959. REFER TO 'THE GROVE AT LAGUNA RIDGE - MITIGATION CHANNEL' IMPROVEMENT PLANS PREPARED BY WOOD RODGERS, INC. FOR LOCATIONS OF SERVICES AND BACKFLOW PREVENTERS.
a9 / 16 / 1"	INDICATES VALVE NUMBER INDICATES NUMBER OF GPM ON A VALVE INDICATES SIZE OF VALVE

REFER TO LANDSCAPE NOTES, SHEET LN-1, FOR IRRIGATION NOTES.

REFER TO IRRIGATION PLAN, SHEET LI-4, FOR IRRIGATION SCHEDULE.



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IRRIGATION PLAN

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date	6-20-06
Scale	1" = 20'
Drawn	
Job	
Sheet	8
	LI-1
Of	22 Sheets

REFER TO LANDSCAPE NOTES, SHEET LN-1, FOR IRRIGATION NOTES.

REFER TO IRRIGATION PLAN, SHEET LI-1, FOR IRRIGATION LEGEND AND IRRIGATION PLAN, SHEET LI-4, FOR IRRIGATION SCHEDULE.

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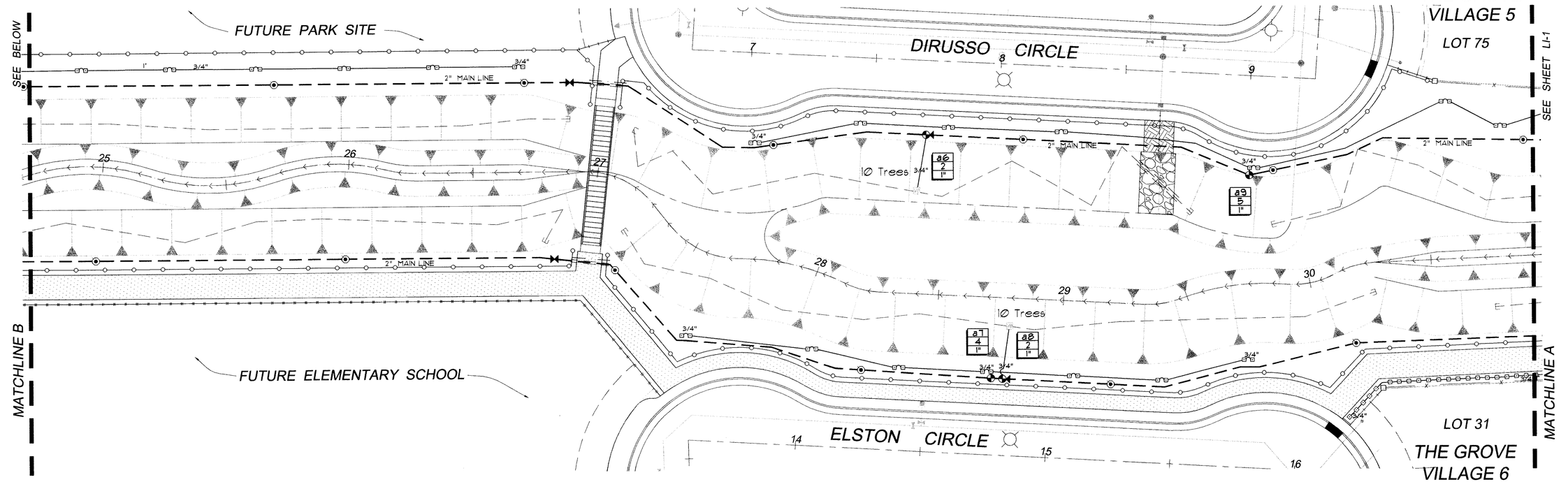

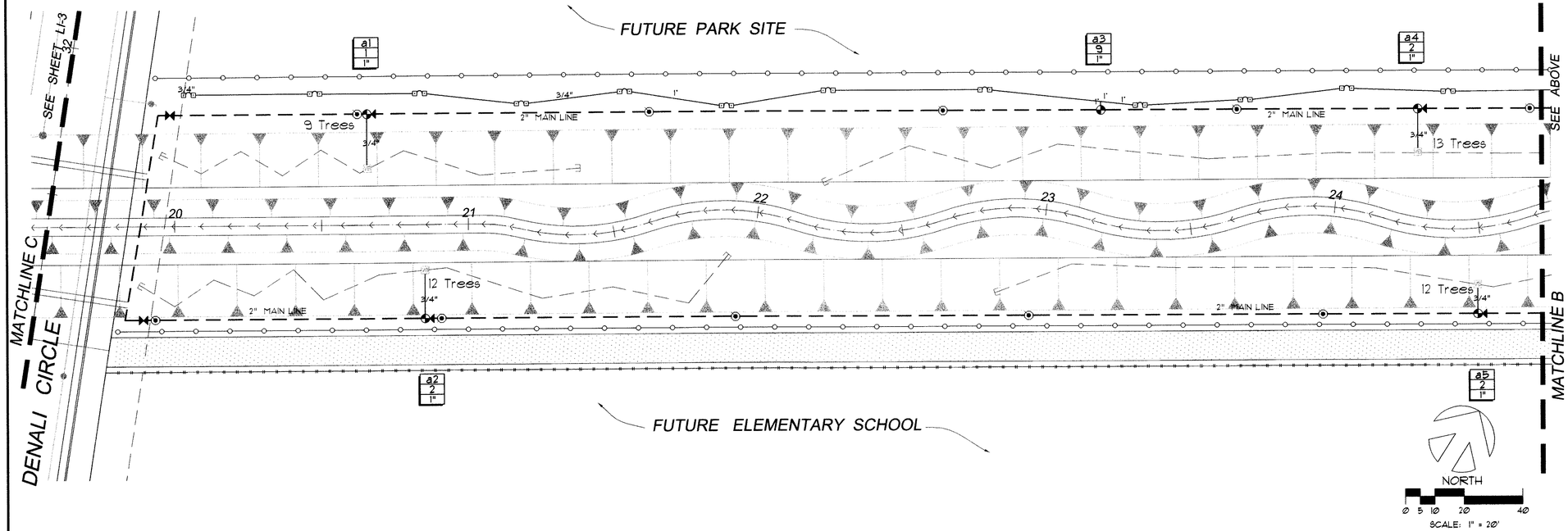

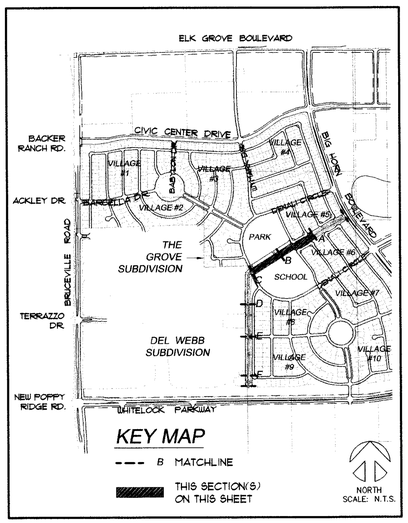

REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
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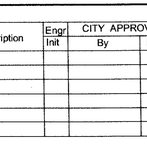

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IRRIGATION PLAN

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LAGUNA RIDGE - DRAINAGE PARKWAY
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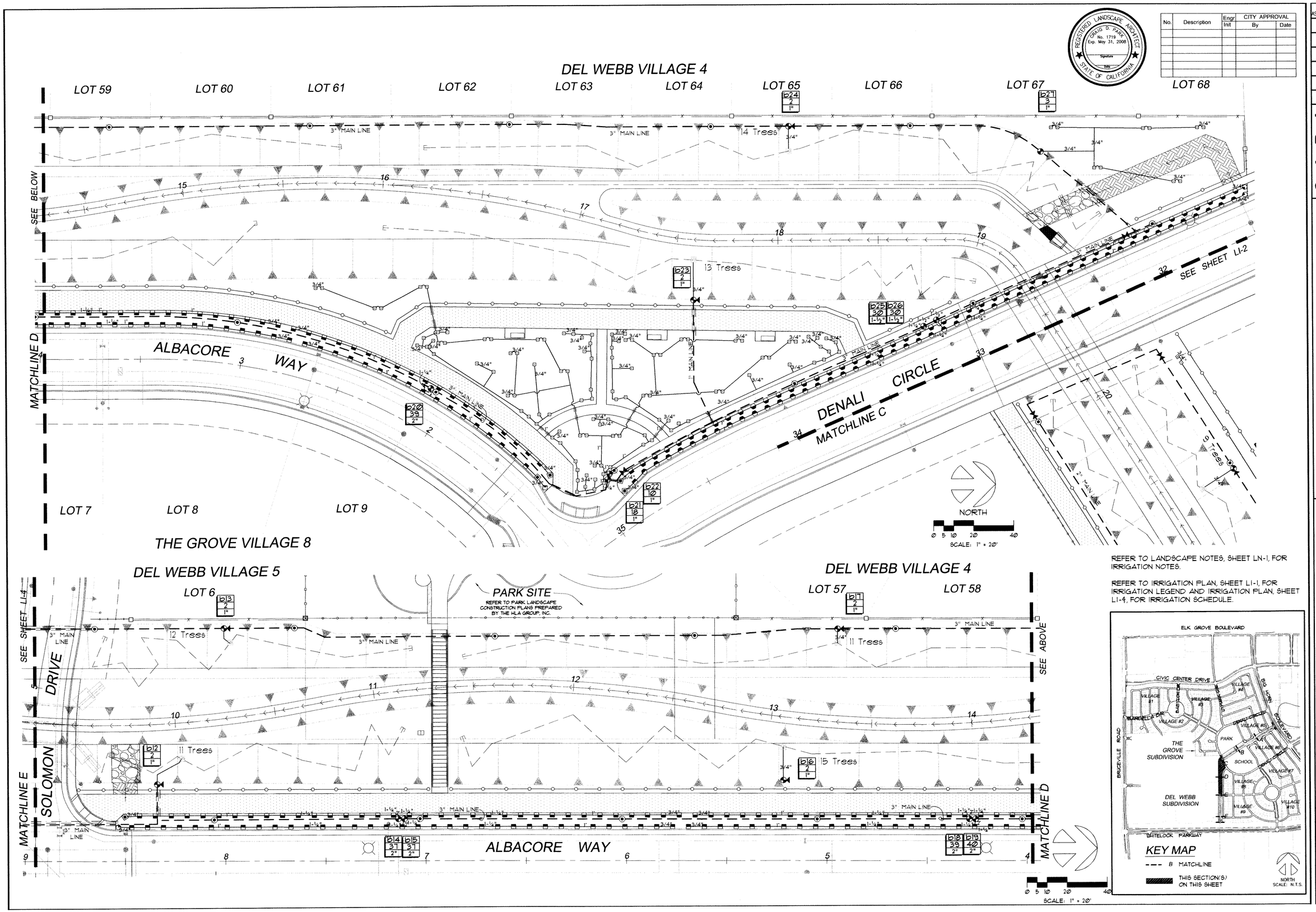
Job	
Sheet 9	LI-2
Of	22 Sheets



REFER TO LANDSCAPE NOTES, SHEET LN-1, FOR IRRIGATION NOTES.

REFER TO IRRIGATION PLAN, SHEET LI-1, FOR IRRIGATION LEGEND AND IRRIGATION PLAN, SHEET LI-4, FOR IRRIGATION SCHEDULE.

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IRRIGATION PLAN

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LI-3
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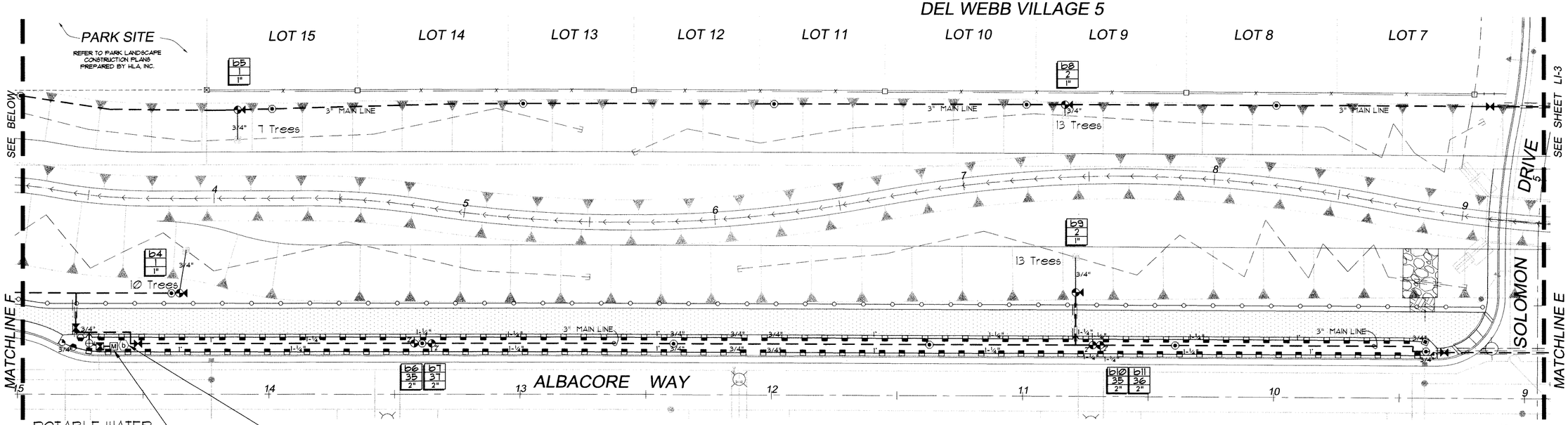
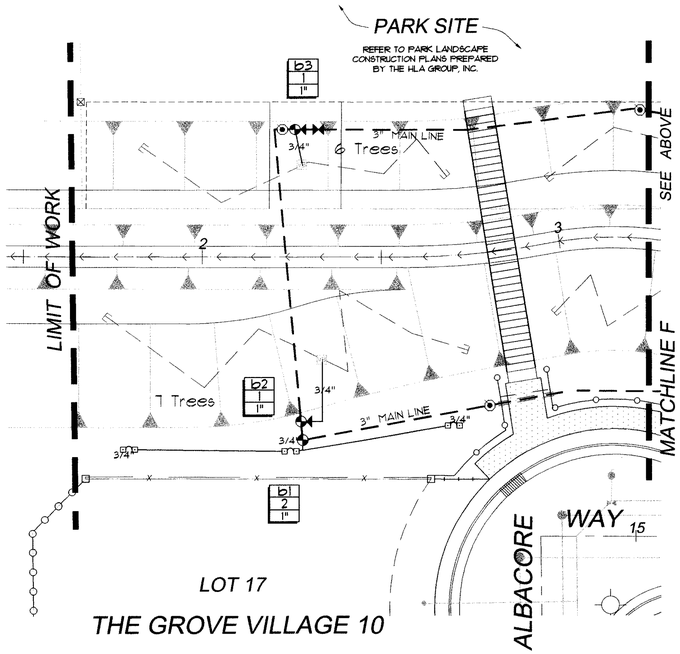


POTABLE WATER

POINT OF CONNECTION:
CONTRACTOR SHALL CONNECT TO EXISTING 1-½" POTABLE IRRIGATION METER AND EXISTING 1-½" BACKFLOW PREVENTER. INSTALL ARAD HYDROMETER PER LEGEND AND CONNECT TO IRRIGATION SYSTEM. REFER TO 'THE GROVE AT LAGUNA RIDGE - MITIGATION CHANNEL' IMPROVEMENT PLANS PREPARED BY WOOD RODGERS, INC. FOR LOCATIONS OF SERVICE, METER, AND BACKFLOW PREVENTER. VERIFY LOCATIONS IN THE FIELD.

EXISTING STATIC PRESSURE	35 PSI
TOTAL MINIMUM PRESSURE REQUIREMENT FOR THIS SYSTEM	35 PSI
MAXIMUM DEMAND FLOW	40 GPM

AUTOMATIC CONTROLLER b
CONTRACTOR SHALL PROVIDE MOTOROLA 32 STATION SCORPIO SATELLITE CONTROLLER ASSEMBLY, MODEL NO. SX-32-RX-824M-AHB-15BMU, WITH UHF RADIO AND KEYBOARD TERMINAL, AS PACKAGED BY CENTRAL CONTROL SYSTEMS. MOUNT CONTROLLER IN STRONG BOX ENCLOSURE, MODEL SB-2468/120V, LOCATED AS INDICATED ON PLAN. REFER TO DETAIL ON SHEET CD-1 FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL CONTACT PHIL GIEBEL OF CENTRAL CONTROL SYSTEMS, TELEPHONE NUMBER: 530/662.6841. FINAL LOCATION OF CONTROLLER ENCLOSURE SHALL BE APPROVED BY LANDSCAPE ARCHITECT, OWNER'S REPRESENTATIVE, AND CITY CONSTRUCTION SERVICES IN THE FIELD PRIOR TO INSTALLATION.
SMUD SERVICE NOTIFICATION NUMBER IS 30139792.



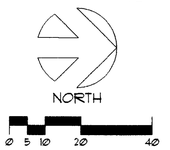
IRRIGATION SCHEDULE (Controllers a & b)

STATION NUMBER	FLOW RATE (GPM)	IRRIG. TYPE	PRECIPITATION RATE INCHES/HOUR	ESTABLISHMENT PERIOD IN MINUTES / WEEK WINTER	SPRING	SUMMER	FALL	POST ESTABLISHMENT PERIOD IN MINUTES / WEEK WINTER	SPRING	SUMMER	FALL
CONTROLLER a											
a1	1	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
a2	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
a3	9	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
a4	5	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
a5	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
a6	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
a7	4	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
a8	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
a9	5	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
a10	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
a11	16	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
a12	1	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
a13	4	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
a14	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
a15	5	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
a16	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
a17	5	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
a18	9	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
a19	8	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
CONTROLLER b											
b1	2	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
b2	1	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
b3	1	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
b4	1	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
b5	1	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
b6	35	SS	1.85	1@:1	1@:2	1@:4	1@:3	8:2	8:3	8:4	8:3
b7	37	SS	1.85	1@:1	1@:2	1@:4	1@:3	8:2	8:3	8:4	8:3
b8	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
b9	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
b10	35	SS	1.85	1@:1	1@:2	1@:4	1@:3	8:2	8:3	8:4	8:3
b11	36	SS	1.85	1@:1	1@:2	1@:4	1@:3	8:2	8:3	8:4	8:3
b12	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
b13	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
b14	37	SS	1.85	1@:1	1@:2	1@:4	1@:3	8:2	8:3	8:4	8:3
b15	37	SS	1.85	1@:1	1@:2	1@:4	1@:3	8:2	8:3	8:4	8:3
b16	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
b17	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
b18	39	SS	1.85	1@:1	1@:2	1@:4	1@:3	8:2	8:3	8:4	8:3
b19	40	SS	1.85	1@:1	1@:2	1@:4	1@:3	8:2	8:3	8:4	8:3
b20	39	SS	1.85	1@:1	1@:2	1@:4	1@:3	8:2	8:3	8:4	8:3
b21	18	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
b22	10	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2
b23	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
b24	2	DRIP	N/A	4@:2	4@:4	6@:4	4@:4	2@:3	3@:4	4@:3	3@:3
b25	30	SS	1.85	1@:1	1@:2	1@:4	1@:3	8:2	8:3	8:4	8:3
b26	30	SS	1.85	1@:1	1@:2	1@:4	1@:3	8:2	8:3	8:4	8:3
b27	3	BUB	N/A	12:1	12:2	16:3	18:2	10:1	10:2	20:2	15:2

NOTE:
10:2 — 10 INDICATES OPERATING TIME IN MINUTES PER DAY; 2 INDICATES DAYS OF OPERATION PER WEEK

WATER CONSUMPTION TABLE / WATER SCHEDULE

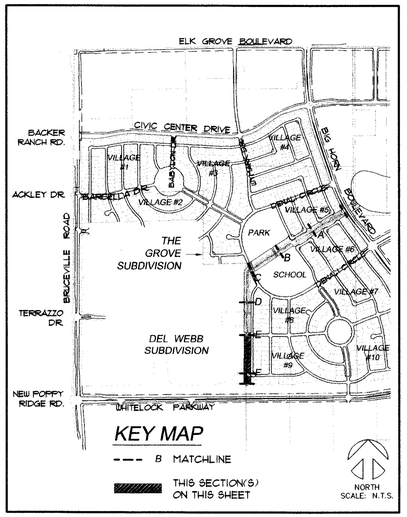
IRRIGATION TYPE	DESCRIPTION	REQUIRED PRECIPITATION (INCHES PER WEEK) WINTER	SPRING	SUMMER	FALL
BUB	TREE BUBBLER HEADS	10 MIN/WEEK	20 MIN/WEEK	40 MIN/WEEK	30 MIN/WEEK
DRIP	DRIP EMITTERS	20 MIN/WEEK	40 MIN/WEEK	60 MIN/WEEK	50 MIN/WEEK
SS	SPRAY FOR SHRUBS & GROUND COVER	.3"	.75"	1.5"	1.13"



REFER TO LANDSCAPE NOTES, SHEET LN-1, FOR IRRIGATION NOTES.

REFER TO IRRIGATION PLAN, SHEET LI-1, FOR IRRIGATION LEGEND.

REGISTERED LANDSCAPE ARCHITECT — CRAIG D. PARK — No. 1719 — Exp. May 31, 2008 — Signature — Date — STATE OF CALIFORNIA



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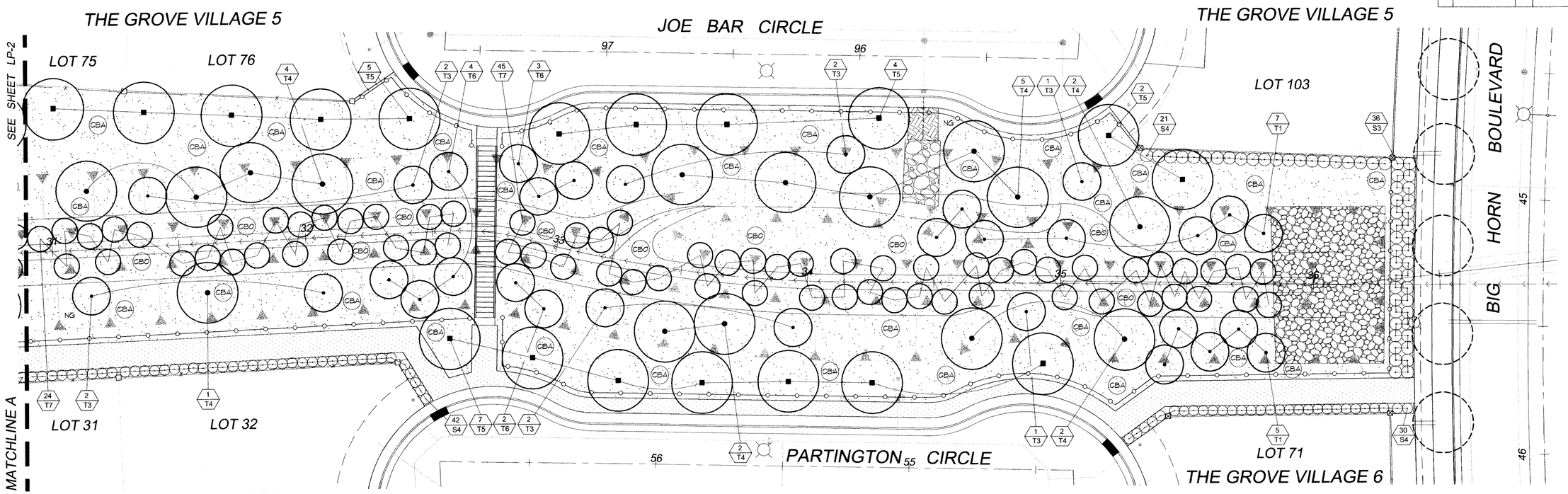
IRRIGATION PLAN

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date	6-20-06
Scale	1" = 20'
Drawn	
Job	
Sheet 11	LI-4
Of	22 Sheets

No.	Description	Engr Init	CITY APPROVAL By	Date

CRAIG PARK ASSOCIATES REVISIONS	BY



PLANT LIST

QUANTITIES LISTED ARE FOR CONTRACTOR'S REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL QUANTITIES AND ITEMS AS REQUIRED ON THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR ALL INCONSISTENCIES AND INCORRECT QUANTITIES.

KEY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	QUANTITY	** WATER USE
	TREES					
T1	ALNUS RHOMBIFOLIA	WHITE ALDER	15 GALLON	8-9' X 2-3'	60	H
T2	CERCIS OCCIDENTALIS	WESTERN REDBUD - MULTI	24" BOX	4-5' X 3-4'	12	L
T3	PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	15 GALLON	7-9' X 2-3'	60	M
T4	QUERCUS LOBATA	VALLEY OAK	15 GALLON	7-8' X 2-3'	95	L
T5	QUERCUS WISLIZENII	INTERIOR LIVE OAK	24" BOX	8-10' X 3-4'	110	L
T6	* SALIX LAEVIGATA	RED WILLOW	5 GALLON	3-6' HEIGHT	35	H
T7	* SALIX SPECIES PER THE U.S. ARMY CORPS OF ENGINEERS	VARIOUS SPECIES OF WILLOWS	CUTTINGS	3-6' HEIGHT	400	H
	SHRUBS					
S1	BUDDLEIA DAVIDII	BUTTERFLY BUSH	5 GALLON	16" X 16"	16	L
S2	CEANOTHUS 'JOYCE COULTER'	WILD LILAC	5 GALLON	16" X 16"	16	L
S3	CISTUS PURPUREUS	ORCHID ROCKROSE	5 GALLON	16" X 16"	36	L
S4	ELAEAGNUS PUNGENS 'FRUITLANDII'	FRUITLAND SILVERBERRY	5 GALLON	16" X 16"	113	L
S5	ESCALLONIA 'FRADESII'	ESCALLONIA	5 GALLON	16" X 16"	70	M
S6	FREMONTODENDRON 'CALIFORNIA GLORY'	FLANNEL BUSH	5 GALLON	16" X 16"	6	L
S7	RAPHIOLEPIS INDICA 'CLARA'	INDIA HAWTHORN	5 GALLON	16" X 16"	341	L
S8	RHAMNUS CALIFORNICA 'EVE CASE'	COFFEEBERRY	5 GALLON	16" X 16"	9	L
S9	ROMNEYA COULTERI	MATILIJA POPPY	5 GALLON	16" X 16"	23	L
	GROUNDCOVER					
G1	MYOPORUM PARVIFOLIUM 'PUTAH CREEK'	TRAILING MYOPORUM	1 GALLON	12" X 12"	813	L

NOTES:

* SALIX SPECIES TREES AND CUTTINGS HAVE BEEN PURCHASED AND ARE AVAILABLE FROM HARTLAND NURSERY. CONTACT TONI HART AT TELEPHONE NUMBER: 916/775.4021.

** FOR WATER USE, H = HIGH, M = MEDIUM, AND L = LOW

WETLAND MITIGATION

THE NATIVE TREES BEING PLANTED ON THIS PROJECT QUALIFY FOR REPLACEMENT CREDIT OF 'THE GROVE' WETLAND MITIGATION FOR REYNEN AND BARDIS COMMUNITIES. THE TABLE BELOW CORRELATES WITH THE TYPE, QUANTITY, AND SIZES OF NATIVE TREES PLANTED. REFER TO PLANT LIST FOR ADDITIONAL INFORMATION.

TREE	SIZE	QUANTITY
ALNUS RHOMBIFOLIA (WHITE ALDER)	15 GALLON	60
PLATANUS RACEMOSA (CALIFORNIA SYCAMORE)	15 GALLON	60
QUERCUS LOBATA (VALLEY OAK)	15 GALLON	95
SALIX LAEVIGATA (RED WILLOW)	5 GALLON	35
SALIX SPECIES (WILLOW CUTTINGS)	CUTTINGS	400

LEGEND

- PROPOSED 24" BOX TREE (1 CD-2) (2 CD-2)
- PROPOSED 15 GALLON TREE (1 CD-2) (2 CD-2)
- PROPOSED WILLOW CUTTING
- PROPOSED SHRUB (3 CD-2)
- PROPOSED HYDROSEEDED CHANNEL BOTTOM, CHANNEL BANKS, AND NEIGHBORHOOD POCKET PARK AREAS. REFER TO NOTE 31 AND SPECIFICATIONS.
- PROPOSED GROUNDCOVER AREA (4 CD-2) (5 CD-2)
- TREE ROOT BARRIER. REFER TO NOTE 36 AND SPECIFICATIONS. (6 CD-2)
- EXISTING PROTO II WALL
- EXISTING PILASTER
- THREE RAIL FENCE (9 CD-2)
- 2' HIGH MASONRY WALL AND 4' HIGH OPEN STEEL FENCE (7 CD-2)
- 2'± SQUARE PILASTER (8 CD-2)
- CONCRETE HEADER (12 CD-1)
- RECYCLED PLASTIC HEADER (13 CD-1)
- THREE RAIL FENCE BY OTHERS
- PEDESTRIAN FOOT BRIDGE BY OTHERS
- DECOMPOSED GRANITE TRAIL BY OTHERS
- TYPE 3 CURB BY OTHERS
- CONCRETE WALK BY OTHERS
- FIRE HYDRANT BY OTHERS
- LIGHT STANDARD BY OTHERS
- # S1 PLANT QUANTITY / PLANT KEY (SEE PLANT LIST)
- 1 CD-1 DETAIL NUMBER / SHEET NUMBER
- CBA HYDROSEEDING MIX FOR CHANNEL BANKS
- CBO HYDROSEEDING MIX FOR CHANNEL BOTTOM
- NP HYDROSEEDING MIX FOR NEIGHBORHOOD POCKET PARK

OAK TREE MITIGATION

THE NATIVE OAK TREES (QUERCUS WISLIZENII) BEING PLANTED ON THIS PROJECT QUALIFY FOR REPLACEMENT CREDIT OF 'THE GROVE' OAK TREE MITIGATION FOR REYNEN AND BARDIS COMMUNITIES. THE TABLE BELOW CORRELATES WITH THE QUANTITY AND SIZES OF OAK TREES PLANTED. REFER TO PLANT LIST FOR ADDITIONAL INFORMATION.

SIZE	QUANTITY	EQUIVALENT MITIGATION
24" BOX	110	2" X 110 = 220 INCHES
		TOTAL: 220 INCHES

THERE ARE ADDITIONAL OAK TREES PLANTED WITHIN THE WHITELOCK PARKWAY DRAINAGE CHANNEL THAT QUALIFY FOR REPLACEMENT CREDIT OF 'THE GROVE' OAK TREE MITIGATION FOR REYNEN AND BARDIS COMMUNITIES. THE TABLE BELOW CORRELATES WITH THE QUANTITY AND SIZES OF OAK TREES PLANTED ON THE WHITELOCK PARKWAY DRAINAGE CHANNEL PLANS. REFER TO LANDSCAPE CONSTRUCTION PLANS PREPARED BY THE HLA GROUP FOR ADDITIONAL INFORMATION.

SIZE	QUANTITY	EQUIVALENT MITIGATION
24" BOX	205	2" X 205 = 410 INCHES
60" BOX	1	12" x 1 = 12 INCHES
		TOTAL: 422 INCHES

COMBINED OAK TREE MITIGATION TOTALS FOR THE LAGUNA RIDGE - DRAINAGE PARKWAY PROJECT PREPARED BY CRAIG PARK ASSOCIATES AND THE WHITELOCK PARKWAY DRAINAGE CHANNEL PREPARED BY THE HLA GROUP EQUAL 642 INCHES.

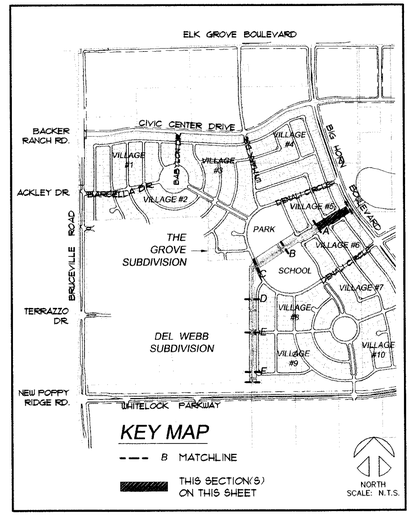
REGISTERED LANDSCAPE ARCHITECT — CRAIG D. PARK — No. 1719 — Exp. May 31, 2008 — Signature — Date — STATE OF CALIFORNIA

NORTH

0 5 10 20 40

SCALE: 1" = 20'

REFER TO LANDSCAPE NOTES, SHEET LN-2, FOR PLANTING NOTES AND SOIL FERTILITY TEST.



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PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA

LAGUNA RIDGE - DRAINAGE PARKWAY

CITY OF ELK GROVE, CALIFORNIA

DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

PLANTING PLAN

Date 6-20-06

Scale 1" = 20'

Drawn

Job

Sheet 12

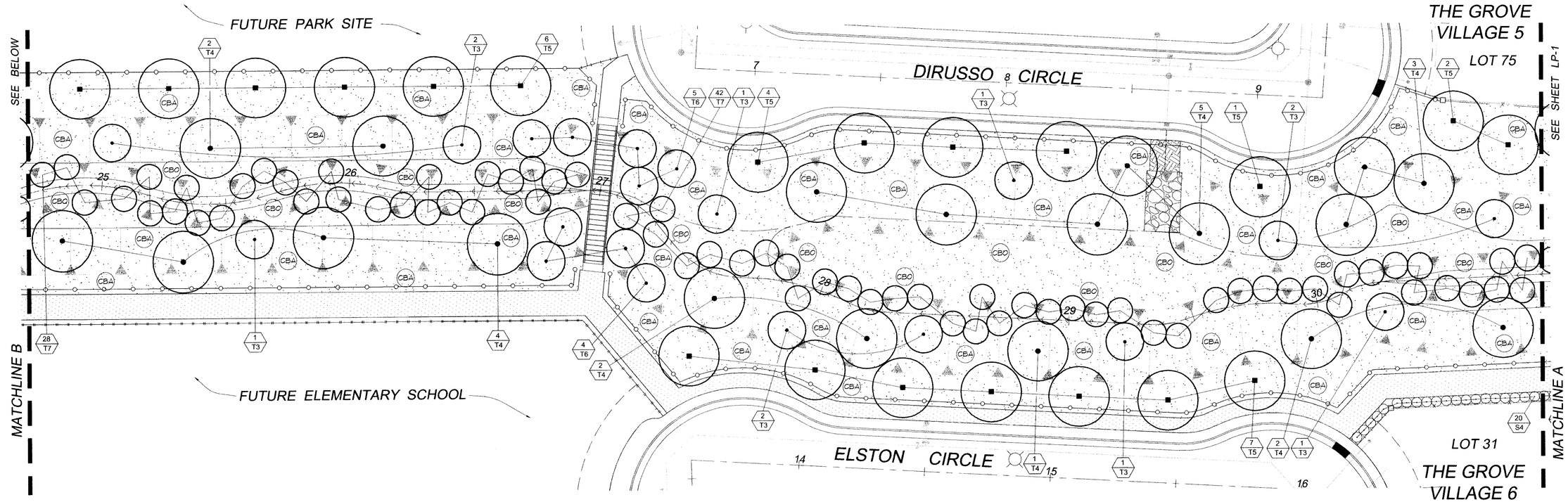
LP-1

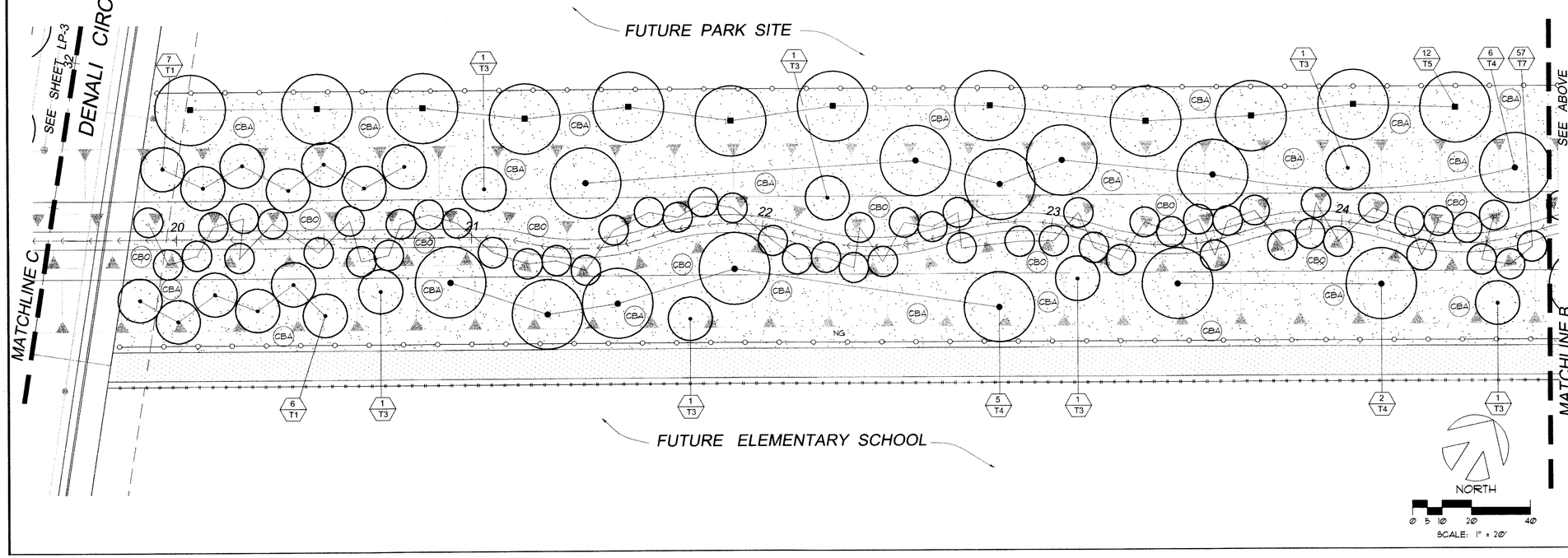
Of 22 Sheets

REFER TO LANDSCAPE NOTES, SHEET LN-2, FOR PLANTING NOTES AND SOIL FERTILITY TEST.

REFER TO PLANTING PLAN, SHEET LP-1, FOR PLANT LIST, PLANT LEGEND, WETLAND MITIGATION, AND OAK TREE MITIGATION.

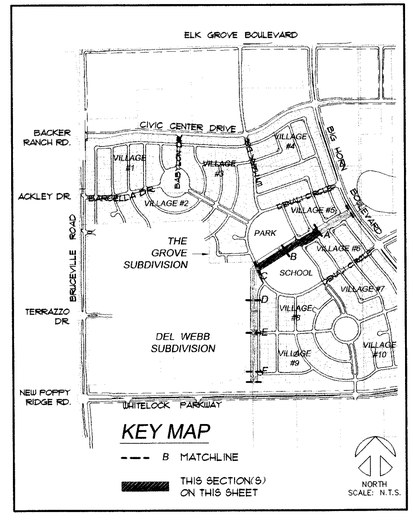
No.	Description	Engr Init	CITY APPROVAL By	Date





REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
Signature
Date
STATE OF CALIFORNIA

NORTH
SCALE: 1" = 20'



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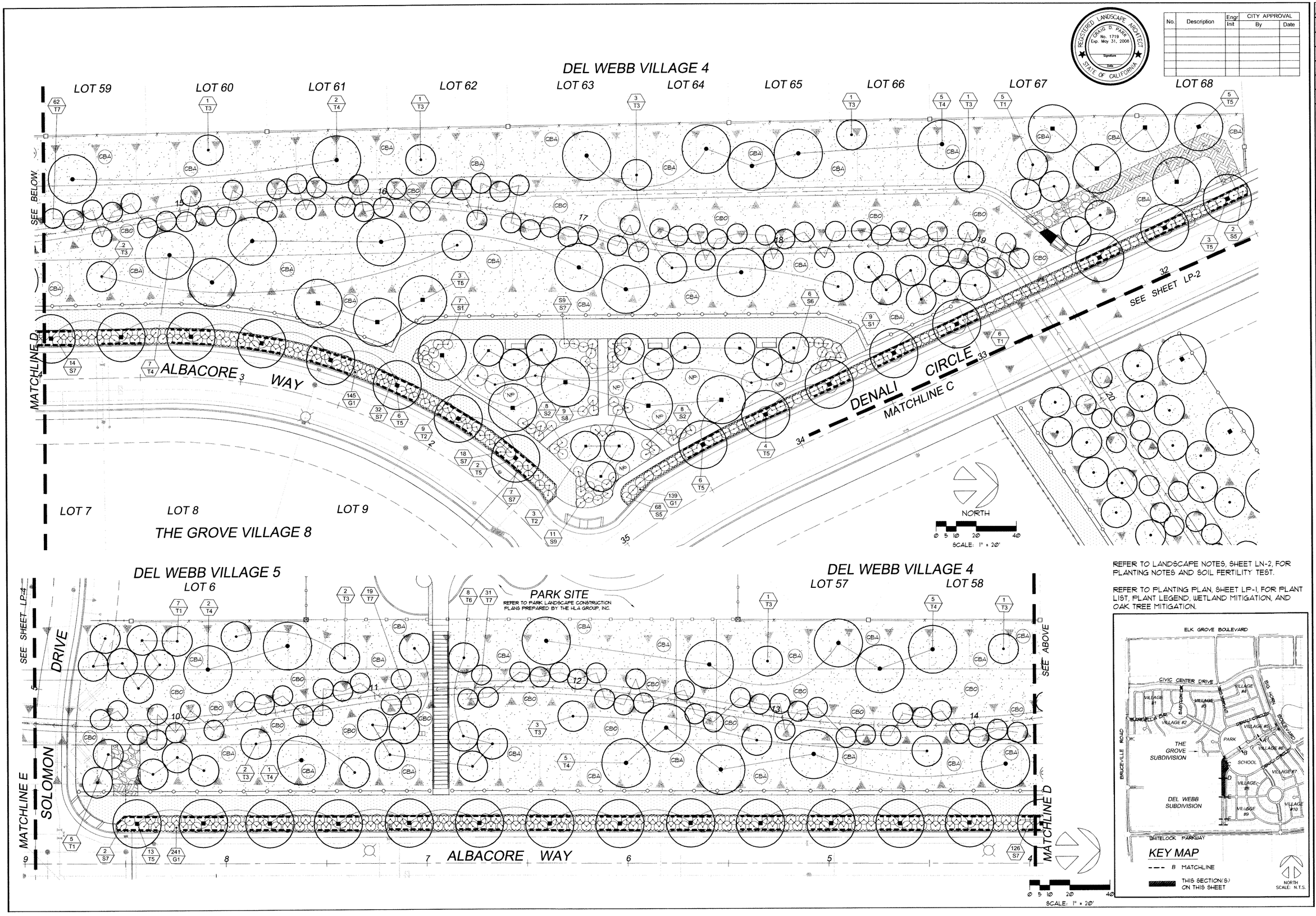
PLANTING PLAN

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date 6-20-06
Scale 1" = 20'
Drawn
Job
Sheet 13
LP-2
Of 22 Sheets



REFER TO LANDSCAPE NOTES, SHEET LN-2, FOR PLANTING NOTES AND SOIL FERTILITY TEST.

REFER TO PLANTING PLAN, SHEET LP-1, FOR PLANT LIST, PLANT LEGEND, WETLAND MITIGATION, AND OAK TREE MITIGATION.

No.	Description	Engr Init	CITY APPROVAL By	Date

REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
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Signature
Date
STATE OF CALIFORNIA

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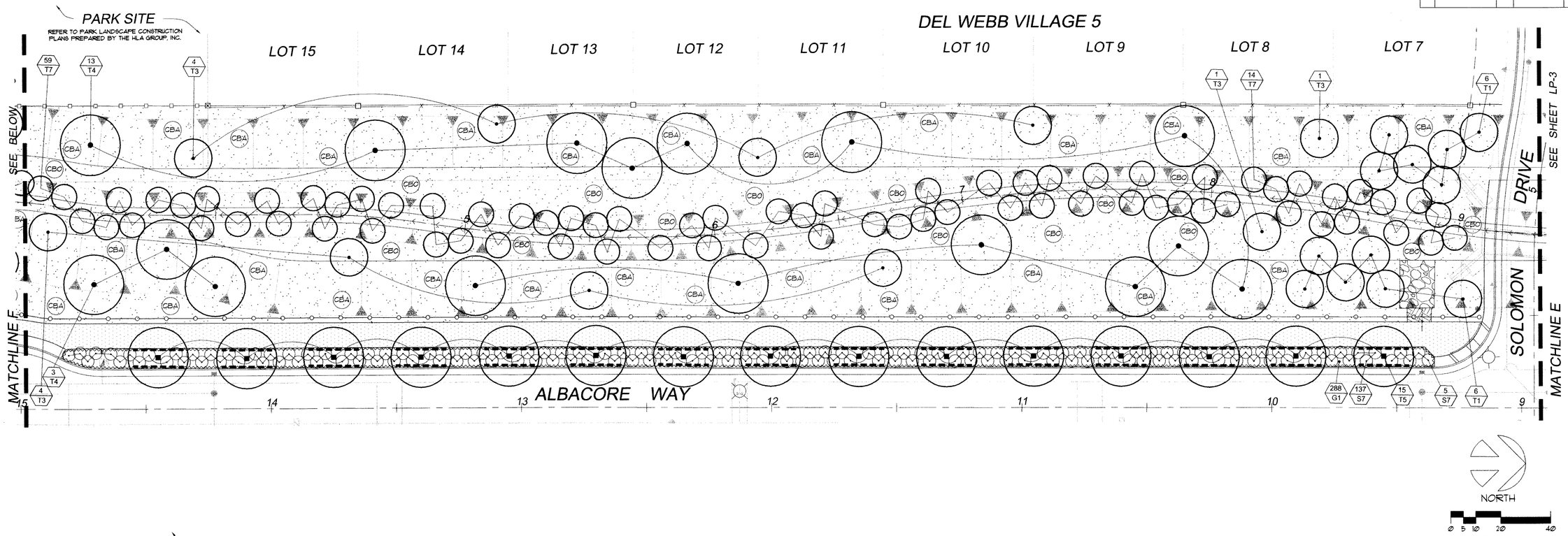
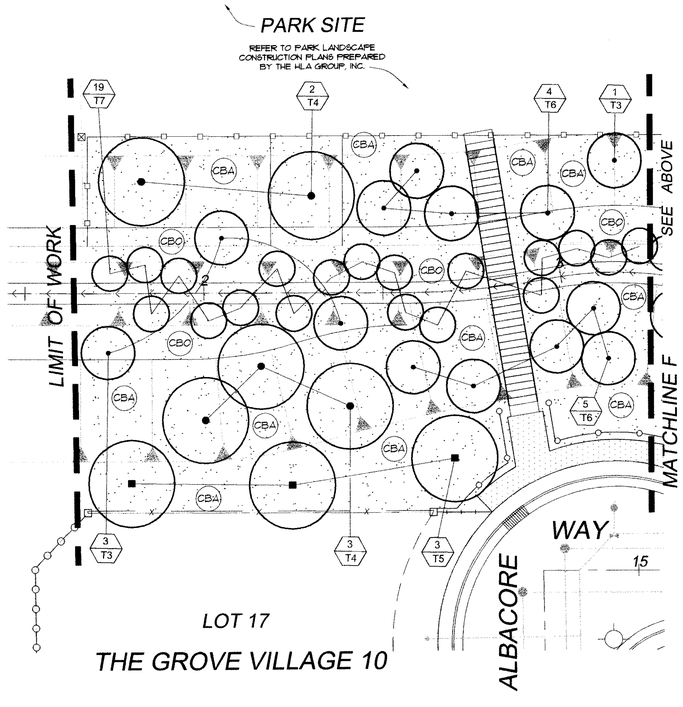
PLANTING PLAN

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date 6-20-06
Scale 1" = 20'
Drawn
Job
Sheet 14
LP-3
Of 22 Sheets

No.	Description	Engr Init	CITY APPROVAL By	Date





REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
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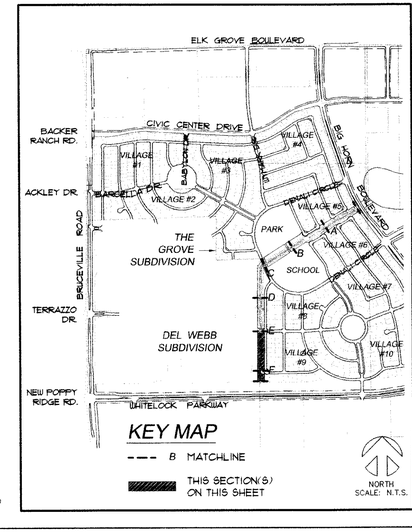

REFER TO LANDSCAPE NOTES, SHEET LN-2, FOR PLANTING NOTES AND SOIL FERTILITY TEST.

REFER TO PLANTING PLAN, SHEET LP-1, FOR PLANT LIST, PLANT LEGEND, WETLAND MITIGATION, AND OAK TREE MITIGATION.

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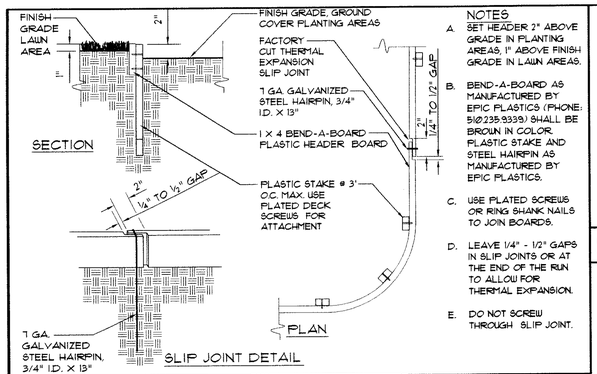
PLANTING PLAN

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date	6-20-06
Scale	1" = 20'
Drawn	
Job	
Sheet 15	LP-4
Of	22 Sheets



NOTES

A. SET HEADER 2" ABOVE GRADE IN PLANTING AREAS, 1" ABOVE FINISH GRADE IN LAWN AREAS.

B. BEND-A-BOARD AS MANUFACTURED BY EPIC PLASTICS (PHONE: 510/235-9339) SHALL BE BROWN IN COLOR. PLASTIC STAKE AND STEEL HAIRPIN AS MANUFACTURED BY EPIC PLASTICS.

C. USE PLATED SCREWS OR RING SHANK NAILS TO JOIN BOARDS.

D. LEAVE 1/4" - 1/2" GAPS IN SLIP JOINTS OR AT THE END OF THE RUN TO ALLOW FOR THERMAL EXPANSION.

E. DO NOT SCREW THROUGH SLIP JOINT.

13 RECYCLED PLASTIC HEADER

SCALE: NONE

KEY

1. CONCRETE WALK/PAVING. COLOR TO BE NATURAL GREY.
2. 1/2" X 1" TOOLED SCORELINE @ FIVE FEET ON CENTER (5' O.C.) FOR CONCRETE WALKS.
3. 1/2" FELT EXPANSION JOINT @ TWENTY FEET ON CENTER (20' O.C.).
4. 95% COMPACTED SUBGRADE.
5. CLASS II AGGREGATE BASE. COMPACT TO 95% RELATIVE DENSITY.
6. 1/2" RADIUS, TYPICAL.
7. THICKENED EDGE REQUIRED FOR ALL CONCRETE WALKS.
8. FINISH GRADE OF NATIVE GRASS AREA.

NOTES

A. PROVIDE 1/2" ASPHALT-IMPREGNATED FELT EXPANSION JOINT EVERY 20' OR AS SHOWN ON PLANS. PROVIDE 1" DEEP SCORE LINES EVERY 5' BETWEEN EXPANSION JOINTS OR AS SHOWN ON PLANS. REFER TO LAYOUT AND CONSTRUCTION PLANS, SHEETS LC-1 THROUGH LC-4, FOR LOCATIONS.

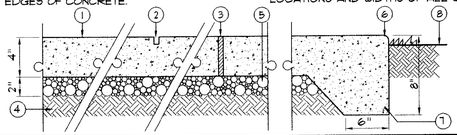
B. SURFACE OF CONCRETE SHALL BE BROOM-FINISHED, PERPENDICULAR TO EDGES OF CONCRETE.

C. FINISH GRADE OF NATIVE GRASS AREA ADJACENT TO CONCRETE WORK SHALL BE 1" BELOW FINISH GRADE OF CONCRETE.

D. ALL CONCRETE SHALL BE CLASS 'A'.

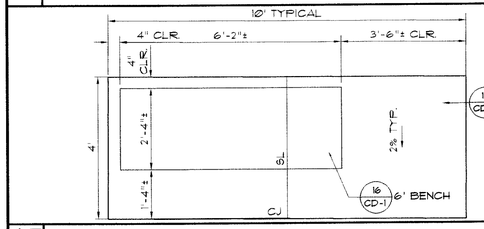
E. ALL CONCRETE WALKS TO HAVE THICKENED EDGE AS SHOWN.

F. REFER TO LAYOUT AND CONSTRUCTION PLANS FOR LOCATIONS AND WIDTHS OF ALL CONCRETE WALKS.



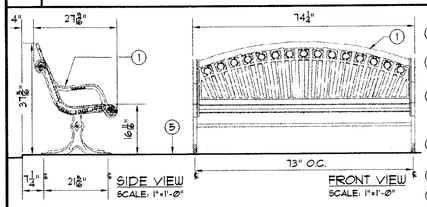
14 CONCRETE WALK/PAVING

SCALE: NONE



15 BENCH ENLARGEMENT

SCALE: 1/2"=1'-0"



KEY

1. 6' STEEL BENCH AS MANUFACTURED BY DU MOR INC.
2. CAST IRON END SUPPORT WITH 9/16" DIAMETER ANCHOR HOLES
3. 1/2" X 10" ANCHOR BOLT W/ WASHER AND NUT, BLACK FINISH TO MATCH BENCH (NOT INCLUDED).
4. 24"L X 12"W X 10"H CONCRETE FOOTING
5. FINISH GRADE
6. CONCRETE PAVING. REFER TO DETAIL 14, SHEET CD-1, FOR ADDITIONAL INFORMATION.
7. COMPACTED SUBGRADE

NOTES

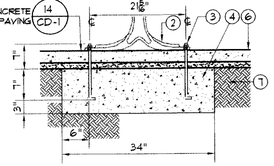
A. BENCH SHALL BE 6' STEEL BENCH WITH BACKREST, MODEL #52-60 AS MANUFACTURED BY DU MOR INC., TELEPHONE NUMBER: 800/558-4018. BENCH IS AVAILABLE FROM ROSS RECREATION EQUIPMENT COMPANY, P.O. BOX 861, FOLSOM, CALIFORNIA 95763. TELEPHONE NUMBER: 916/985-6349. CONTACT REPRESENTATIVE: CHRIS TAIT. COLOR OF BENCH SHALL BE BLACK.

B. CONTRACTOR SHALL FORM CONCRETE FOOTING FOR ANCHOR BOLT INSTALLATION AND FASTEN TO BENCH LEG AS REQUIRED.

C. INSTALL AS PER MANUFACTURER'S REQUIREMENTS.

D. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.

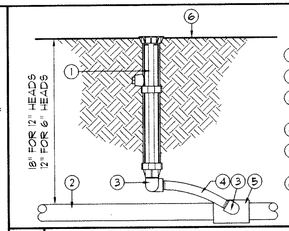
E. REFER TO LAYOUT AND CONSTRUCTION PLANS, SHEETS LC-1 THROUGH LC-4, FOR LOCATIONS, LAYOUT OF BENCHES, AND ADDITIONAL INFORMATION.



ANCHORING SECTION
SCALE: NOT TO SCALE

16 BENCH

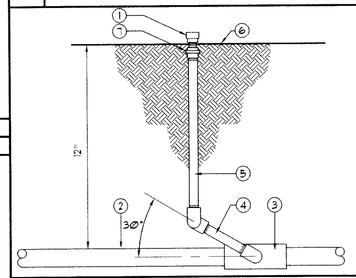
SCALE: NONE



1. POP-UP SPRAY HEAD, SEE LEGEND
2. LATERAL LINE
3. SBE-050, 1/2" MALE NPT X 1/2" SPIRAL BARBED ELBOW AS MANUFACTURED BY 'RAIN BIRD'.
4. SP-100 SWING PIPE AS MANUFACTURED BY 'RAIN BIRD'.
5. LATERAL LINE FITTING WITH THREADED OUTLET HORIZONTAL
6. FINISH GRADE

9 POP-UP SPRAY HEAD

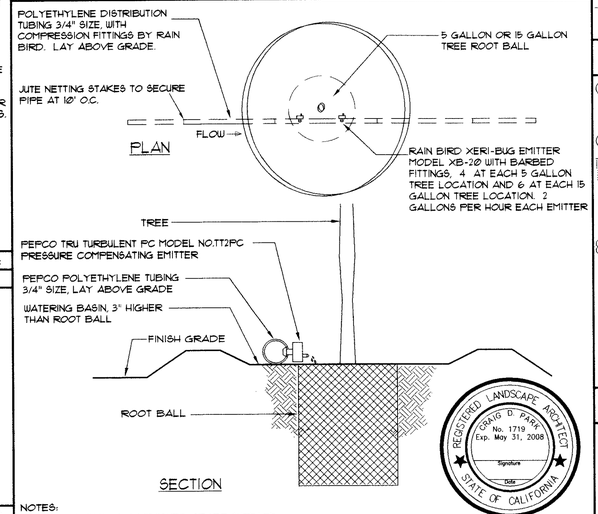
SCALE: NONE



1. BUBBLER HEAD. INSTALL 1" ABOVE FINISH GRADE WITHIN TREE OR SHRUB WATERING BASIN ON HIGH SIDE OF ROOT BALL.
2. LATERAL LINE
3. LATERAL LINE FITTING WITH THREADED OUTLET HORIZONTAL
4. FACTORY-FABRICATED 3 PLANE PVC SWING JOINT, 150 PSI MIN. RATING, AS MANUFACTURED BY 'DURA', 'KBI', 'LASCO', OR EQUAL
5. SCHEDULE 80 PVC NIPPLE
6. FINISH GRADE
7. PVC CHECK VALVE WITH 5# SPRING

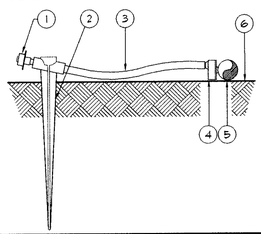
10 ON-GRADE BUBBLER HEAD

SCALE: NONE



NOTES:

1. INSTALL EMITTERS ON FINISHED GRADE SURFACE.
2. REGULATE EMITTER OUTLET FLOW RATES BASED ON CONTAINER SIZE (SEE PLANS).
3. INSTALL FOUR (4) EMITTERS AT EACH 5 GALLON TREE LOCATION AND SIX (6) EMITTERS AT EACH 15 GALLON TREE LOCATION.
4. REFER TO PLANTING PLANS FOR LOCATIONS AND QUANTITIES OF PLANTS.



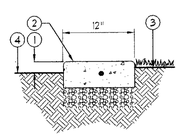
1. DIFFUSER BUG CAP: RAIN BIRD DBC-025
2. 1/4-INCH TUBING STAKE: RAIN BIRD TS-025
3. 1/4-INCH VINYL DISTRIBUTION TUBING: RAIN BIRD DT-025
4. SINGLE-OUTLET EMITTER: RAIN BIRD XERI-BUG EMITTERS XB-20
5. PE PIPE: RAIN BIRD XERI-TUBE XT-050-200
6. FINISH GRADE

NOTE:

A. USE RAIN BIRD BUG GUN MODEL EMA-BG TO INSERT EMITTER DIRECTLY INTO XERI-TUBE OR RAIN TUBE TUBING.

11 ON GRADE DRIP DETAILS

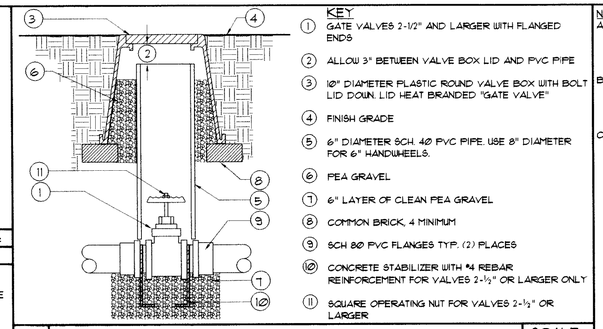
SCALE: NONE



1. SET HEADER 2" ABOVE GRADE IN SHRUB OR GROUNDCOVER AREAS, 1" ABOVE FINISH GRADE IN TURF AREAS
2. 12" WIDE X 4" DEEP CONCRETE HEADER. TOOL EDGES WITH 1/2" RADIUS. PROVIDE DEEP SCORE LINE AT 10' ON CENTER AND ONE #4 BAR CONTINUOUS AT MIDPOINT OF BAND. CONCRETE TO BE NATURAL COLORED CONCRETE.
3. FINISH GRADE (TURF, DECOMPOSED GRANITE, OR PAVING)
4. FINISH GRADE OF SOIL IN GROUNDCOVER OR SHRUB AREA

12 12" CONCRETE HEADER

SCALE: NONE

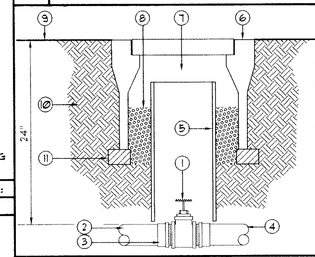


KEY

1. GATE VALVES 2-1/2" AND LARGER WITH FLANGED ENDS
2. ALLOW 3" BETWEEN VALVE BOX LID AND PVC PIPE
3. 10" DIAMETER PLASTIC ROUND VALVE BOX WITH BOLT LID DOWN. LID HEAT BRANDED "GATE VALVE"
4. FINISH GRADE
5. 6" DIAMETER SCH. 40 PVC PIPE. USE 8" DIAMETER FOR 6" HANDWHEELS.
6. PEA GRAVEL
7. 6" LAYER OF CLEAN PEA GRAVEL
8. COMMON BRICK, 4 MINIMUM
9. SCH 80 PVC FLANGES TYP. (2) PLACES
10. CONCRETE STABILIZER WITH #4 REBAR REINFORCEMENT FOR VALVES 2-1/2" OR LARGER ONLY
11. SQUARE OPERATING NUT FOR VALVES 2-1/2" OR LARGER

4 GATE VALVE - 2-1/2" OR LARGER

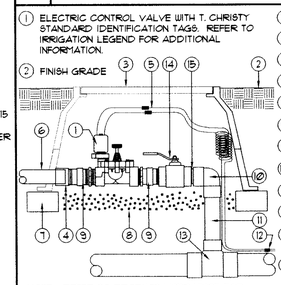
SCALE: NONE



1. GATE VALVE
2. MAIN LINE
3. PVC FEMALE ADAPTER WITH SCHEDULE 80 NIPPLES
4. GATE VALVE IS AT MAIN LINE BURIAL DEPTH
5. 6" DIAMETER SCH. 40 PVC
6. VALVE BOX
7. ALLOW 2" CLEAR BETWEEN VALVE BOX LID ACCESS SLEEVE
8. PEA GRAVEL
9. FINISH GRADE
10. COMPACTED BACKFILL
11. COMMON BRICK, 2 MINIMUM

5 GATE VALVE - 2" OR SMALLER

SCALE: NONE

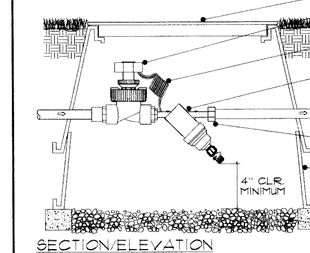


1. ELECTRIC CONTROL VALVE WITH T. CHRISTY STANDARD IDENTIFICATION TAGS. REFER TO IRRIGATION LEGEND FOR ADDITIONAL INFORMATION.
2. FINISH GRADE
3. VALVE BOX (HEIGHT ABOVE GRADE AS REQUIRED)
4. PVC COUPLING
5. WATERPROOF WIRE CONNECTORS
6. PVC LATERAL LINE-ANGLE TO PROPER DEPTH WITH 45° ELLS
7. COMMON RED BRICK (4 REQUIRED)
8. PEA GRAVEL - 12" DEPTH
9. PVC SCHEDULE 80 NIPPLE AND UNION (6" TOTAL LENGTH)
10. PVC SCHEDULE 80 90 S X S
11. PVC SCHEDULE 80 PIPE
12. COMMON AND CONTROL WIRES TO CONTROLLER LOCATION
13. PRESSURE MAIN LINE PIPING WITH MAIN LINE FITTING (DEPTH AS REQUIRED)
14. PVC SCHEDULE 80 FULL PORT BALL VALVE (UPSTREAM OF RC VALVE).
15. PVC SCHEDULE 80 S X T CLOSE NIPPLE TO BALL VALVE.

NOTE: REFER TO PRODUCT LITERATURE FOR ADDITIONAL INSTALLATION AND ADJUSTMENT INFORMATION.

6 REMOTE CONTROL VALVE

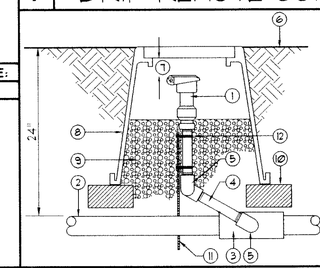
SCALE: NONE



VALVE BOX
CONTROL VALVE
FINISHED GRADE
SERVICE EXPANSION COIL
AMIAD FILTER, MODEL NO. 115-0059-100-COMPACT FILTER OR MODEL NO. 112-0059-100. REFER TO PLAN FOR SIZE.
PVC LATERAL
SCH. 80 UNION
VALVE BOX EXTENSION
BRICK SUPPORTS
1 CU. FT. PEA GRAVEL SUMP

7 DRIP REMOTE CONTROL VALVE

SCALE: NONE



1. QUICK COUPLING VALVE
2. MAIN LINE
3. MAIN LINE FITTING WITH THREADED OUTLET HORIZONTAL
4. BRASS SWING JOINT OR RAIN BRID TSJ-12 SWING JOINT.
5. 90 DEGREE THREADED ELLS. PROVIDE 3" OFFSET BETWEEN ELLS. ALL ELLS AND NIPPLES SHALL BE BRASS.
6. FINISH GRADE
7. ALLOW 2" BETWEEN VALVE BOX LID AND PVC PIPE
8. 10" DIAMETER PLASTIC VALVE BOX WITH BOLT DOWN LID
9. PEA GRAVEL
10. COMMON BRICK, 2 MINIMUM
11. #4 X 24" REBAR STAKES, SECURE TO QUICK COUPLER RISER WITH CLAMPS.
12. STAINLESS STEEL ADJUSTABLE CLAMPS, TWO (2) REQUIRED

8 QUICK COUPLER

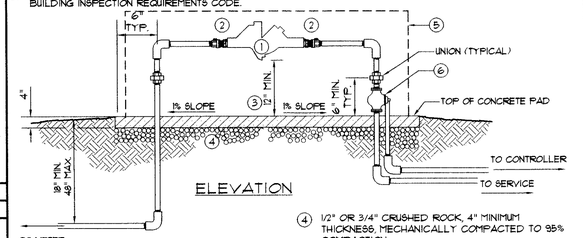
SCALE: NONE

NOTES

A. REDUCED PRESSURE BACKFLOW PREVENTER SHALL BE LISTED ON THE STATE OF CALIFORNIA'S DEPT. OF HEALTH SERVICES MOST RECENT LIST OF APPROVED REDUCED PRESSURE BACKFLOW PREVENTERS.

B. ALL PIPES SHALL BE GALVANIZED SCHEDULE 40 STEEL, TYPE K COPPER, OR BRONZE. ALL BURIED PIPES SHALL BE WRAPPED WITH 6 MIL POLYETHYLENE ENCASEMENT OR 10 MIL POLYETHYLENE TAPE.

C. GALVANIZED PIPE SHALL HAVE ANODE BAG PER COUNTY BUILDING INSPECTION REQUIREMENTS CODE.



1. REDUCED PRESSURE BACKFLOW PREVENTER.
2. BRONZE BODY, RESILIENT SEATED BALL VALVE MINIMUM WORKING PRESSURE OF 175 PSI.
3. 4" SLAB - 18" WIDE WITH VARYING LENGTH
4. 1/2" OR 3/4" CRUSHED ROCK, 4" MINIMUM THICKNESS. MECHANICALLY COMPACTED TO 95% COMPACTION.
5. STAINLESS STEEL INSULATED CAGE ENCLOSURE. REFER TO IRRIGATION LEGEND FOR MODEL NUMBER AND ADDITIONAL INFORMATION.
6. ARAD HYDROMETER, MODEL BMU-CIR. REFER TO IRRIGATION PLAN FOR SIZE.

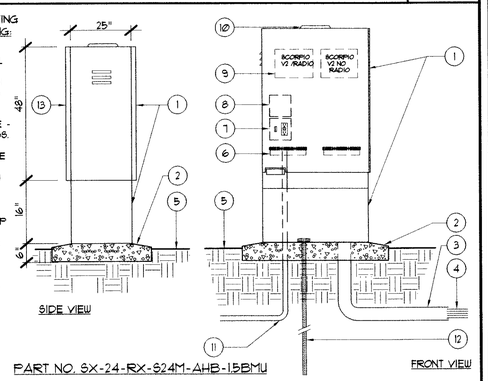
1 ARAD HYDROMETER

SCALE: NONE

LEGEND CONSISTING OF THE FOLLOWING:

1. SB-2466/120V STAINLESS STEEL CONTROLLER ENCLOSURE WITH PEDESTAL, 2466.
2. POURED CONCRETE BASE - 6" MIN. THICKNESS. EXTEND 6" BEYOND OUTSIDE DIMENSIONS OF ENCLOSURE WITH 1/2% SLOPE FOR DRAINAGE.
3. PVC LONG SWEEP ELL - USE ONE SWEEP ELL PER CONTROLLER.
4. DIRECT BURIAL CONTROL WIRES TO CONTROL VALVES.
5. FINISH GRADE.
6. 8 STATIONS/ 2 INPUT SWITCH BOARDS.
7. GFI OUTLET AND POWER SWITCH RSOA-12 12 VOLT DC POWER SUPPLY FOR AC SCORPIO
8. TCS-HW 100 VOLT SURGE PROTECTION
9. SCORPIO V2, 24 STATION CONTROLLER W/ HT-150 RADIO, 4-V314.
10. AP-4000 MILLENIUM LO-PROFILE 450-470 MHz UHF ANTENNA KIT.
11. 120-VOLT SERVICE IN CONDUIT.
12. 3/4" X 96" COPPER GROUND ROD. CONNECT AS PER MANUFACTURER.
13. ELECTRIC SERVICE IS ON BACK OF DOUBLE DOOR STRONG BOX ENCLOSURE

NOTE: CONNECT FLOW METER TO SCORPIO PER MANUFACTURER'S SPECIFICATIONS.



PART NO. SX-24-RX-624M-AHB-1.5BMU

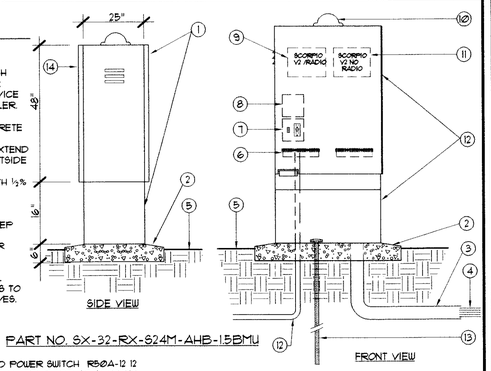
2 24 STATION SCORPIO CONTROLLER - CONTROLLER a

SCALE: NONE

LEGEND

1. SB-2466/120V CONTROLLER ENCLOSURE WITH PEDESTAL FOR ELECTRIC SERVICE AND CONTROLLER.
2. POURED CONCRETE BASE - 6" MIN. THICKNESS - EXTEND 6" BEYOND OUTSIDE DIMENSIONS OF ENCLOSURE WITH 1/2% SLOPE FOR DRAINAGE.
3. PVC LONG SWEEP ELL - USE ONE SWEEP ELL PER CONTROLLER.
4. DIRECT BURIAL CONTROL WIRES TO CONTROL VALVES.
5. FINISH GRADE.
6. TERMINALS.
7. GFI OUTLET AND POWER SWITCH RSOA-12 12 VOLT DC POWER SUPPLY FOR AC SCORPIO.
8. TCS-HW 100 VOLT SURGE PROTECTION.
9. F2848A SCORPIO V2, 8 STATION CONTROLLER W/HT-150 RADIO, 2-V314, 8 STATION 2 - INPUT AC EXPANSION FOR 32 STATIONS.
10. AP-4000 MILLENIUM LO-PROFILE 450-470 MHz ANTENNA KIT.
11. F2805, SCORPIO V2, 8 STATION CONTROLLER, V314.
12. 120-VOLT SERVICE IN CONDUIT.
13. 3/4" X 96" COPPER GROUND ROD CONNECT AS PER MANUFACTURER.
14. ELECTRIC SERVICE IS ON BACK OF DOUBLE DOOR STRONG BOX ENCLOSURE.

NOTE: CONNECT FLOW METER TO SCORPIO PER MANUFACTURER'S SPECIFICATIONS.



PART NO. SX-32-RX-624M-AHB-1.5BMU

3 32 STATION SCORPIO CONTROLLER - CONTROLLER b

SCALE: NONE

No.	Description	Engr Init	CITY APPROVAL By	Date

CRAIG PARK ASSOCIATES REVISIONS	BY

Craig Park
Associates
Landscape Architects ▲ Planners
2747 Riverside Boulevard
Sacramento, California 95818
916/444-2026
FAX 916/444-1886

CONSTRUCTION DETAILS

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date	6-20-06
Scale	AS NOTED
Drawn	
Job	
Sheet	16
	CD-1
Of	22 Sheets

REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
Signature
Date
STATE OF CALIFORNIA

KEY

1. PILASTER CAP SHALL BE 28" SQUARE 'CLASSIC PEAKED CAP' FROM STEPSTONE, INC. COLOR TO BE CAFE BROWN #507. ATTACH USING THINSET WITH LATEX ADDITIVE.
2. 6 X 8 X 16 SPLIT-FACE CONCRETE MASONRY UNIT BLOCK. GROUT ALL CELLS SOLID. BLOCK IS MANUFACTURED BY BASALITE. COLOR SHALL BE #345 TAN.
3. 2' HIGH MASONRY WALL WITH 4' HIGH OPEN STEEL FENCE. REFER TO DETAIL AND ENGINEERED STRUCTURAL PLANS FOR ADDITIONAL INFORMATION.
4. #4 HORIZONTAL REBAR AT 16" ON CENTER.
5. #4 VERTICAL BAR AT 16" ON CENTER. BEND INTO FOOTING.
6. 3/8" MORTAR JOINT, TYPICAL.
7. EXTEND CONCRETE MASONRY UNIT BLOCK THREE INCHES MINIMUM (3" MIN.) BELOW FINISH GRADE.
8. FINISH GRADE.
9. COMPACTED SUBGRADE.
10. CONCRETE FOOTING.
11. #4 REBAR BOTH WAYS, CONTINUOUS, TYP.
12. 3" MULCH
13. ALIGN BACK OF 2' HIGH MASONRY WALL WITH 4' HIGH OPEN STEEL FENCE WITH PROPERTY LINE, TYPICAL.

NOTES

A. CONTRACTOR SHALL VERIFY ALL DIMENSION PRIOR TO CONSTRUCTION.

B. PILASTER CAP SHALL BE MANUFACTURED BY STEPSTONE INC., 17025 S. MAIN STREET, GARDENA, CALIFORNIA 90248. TELEPHONE NUMBER: 800/578.9029. CAPS ARE AVAILABLE FROM SILVERADO BUILDING MATERIALS, 9297 JACKSON HIGHWAY, SACRAMENTO, CALIFORNIA 95826. TELEPHONE NUMBER: 916/361.1374. CONTACT JODI HOLMES.

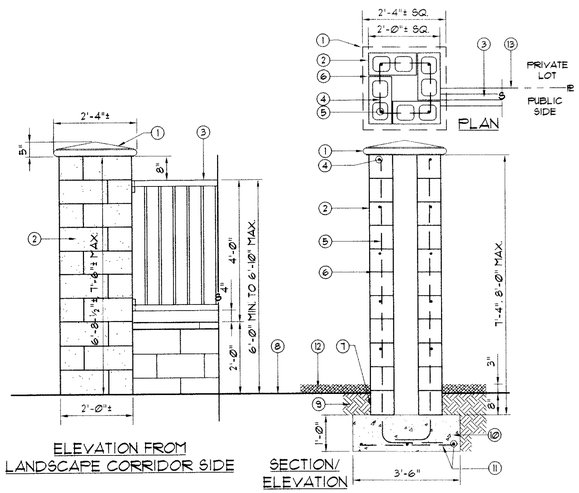
C. ALL PILASTER CONCRETE BLOCK SHALL BE MANUFACTURED AND AVAILABLE FROM BASALITE CONCRETE PRODUCTS, LLC. CONTACT REPRESENTATIVE: RAMONA KOEHLER-LEAMY, TELEPHONE NUMBER: 916/393.2033. COLOR OF BLOCK SHALL BE #345 (TAN). ALL BLOCK SHALL BE SPLIT FACE TEXTURE ON ALL SIDES.

D. CONTRACTOR SHALL APPLY TWO (2) COATS OF NON-SACRIFICIAL GRAFFITI COATING TO PUBLIC SIDE OF PILASTER. GRAFFITI COATING SHALL BE MONOCHEM PERMA SHIELD AS AVAILABLE FROM VISTA PAINT, TELEPHONE NUMBER: 916/858.1818. UPON COMPLETION OF GRAFFITI COATING APPLICATION, CONTRACTOR SHALL SEND GUARANTEE LETTER TO LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE STATING COATING APPLICATION HAS BEEN COMPLETED PER MANUFACTURER'S RECOMMENDATIONS AND THE COUNTY'S SPECIFICATIONS.

E. FOOTINGS AND REBAR SHOWN ARE DIAGRAMMATIC ONLY. ENGINEERED STRUCTURAL CALCULATIONS ARE INCLUDED IN THIS SET OF PLANS. REFER TO PILASTER STRUCTURAL DETAILS, SHEET S-2.

F. GROUT ALL CONCRETE BLOCKS SOLID.

G. REFER TO LAYOUT AND CONSTRUCTION PLANS, SHEETS LC-1 THROUGH LC-4, FOR LOCATIONS OF CONCRETE MASONRY UNIT BLOCK PILASTERS AND 2' HIGH MASONRY WALL WITH 4' HIGH OPEN STEEL FENCES AND ADDITIONAL INFORMATION.

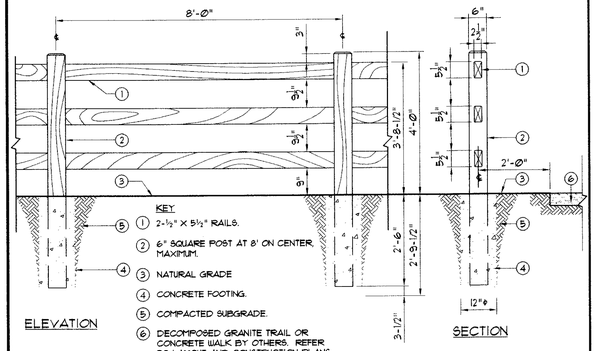


ELEVATION FROM LANDSCAPE CORRIDOR SIDE

SECTION/ ELEVATION

8 2'± SQUARE PILASTER

SCALE: 1½"=1'-0"



ELEVATION

SECTION

KEY

1. 2-½" X 5½" RAILS.
2. 6" SQUARE POST AT 8' ON CENTER, MAXIMUM.
3. NATURAL GRADE
4. CONCRETE FOOTING.
5. COMPACTED SUBGRADE.
6. DECOMPOSED GRANITE TRAIL OR CONCRETE WALK BY OTHERS. REFER TO LAYOUT AND CONSTRUCTION PLANS FOR LOCATIONS.

NOTES

A. CONCRETE POST AND RAIL FENCE SHALL BE WOODCRETE 3-RAIL SYSTEM AS MANUFACTURED BY DESIGNER CONCRETE FENCES, 4925 SEPULVEDA BLVD. SHERMAN OAKS, CALIFORNIA 91403. TELEPHONE NUMBER 800.990.3362 OR 818.990.3362, WEB SITE: WWW.DESIGNERCONCRETE.COM, OR APPROVED EQUAL.

B. COLOR OF POST AND RAIL FENCE SHALL BE DAVIS INTEGRAL COLOR 'SANDSTONE'.

C. INSTALL POST AND RAIL FENCE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

D. WHERE APPLICABLE, INSTALL ALL POSTS PLUMB AND 6" CLEAR FROM PILASTERS.

E. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.

F. FIBER REINFORCEMENT IN ALL POSTS, PANELS AND CAPS.

G. ALL PIER FOUNDATIONS ARE TO BE LOCATED IN UNDISTURBED SOIL.

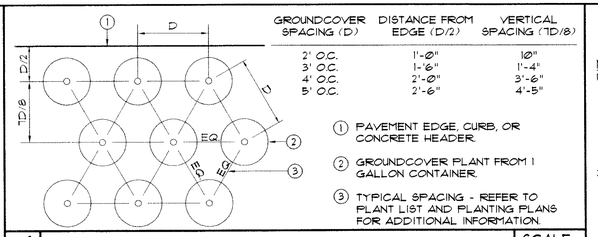
H. POSTS AND RAIL ARE MADE OF CONCRETE ATTAINING A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI @ 28 DAYS AND MANUFACTURED BY AN AMERICAN TECHNOCRETE LICENSED MANUFACTURER.

I. DEEP NATURAL WOOD GRAIN TEXTURE ON ALL POSTS AND RAILS.

J. CONTRACTOR SHALL SUBMIT FENCE SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL.

9 THREE RAIL FENCE

SCALE: ½"=1'-0"

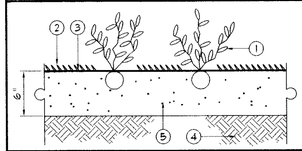


GROUNDCOVER SPACING (D)	DISTANCE FROM EDGE (D/2)	VERTICAL SPACING (T/D/8)
2' O.C.	1'-0"	10"
3' O.C.	1'-6"	1'-4"
4' O.C.	2'-0"	3'-6"
5' O.C.	2'-6"	4'-5"

1. PAVEMENT EDGE, CURB, OR CONCRETE HEADER.
2. GROUNDCOVER PLANT FROM 1 GALLON CONTAINER.
3. TYPICAL SPACING - REFER TO PLANT LIST AND PLANTING PLANS FOR ADDITIONAL INFORMATION.

4 GROUNDCOVER SPACING

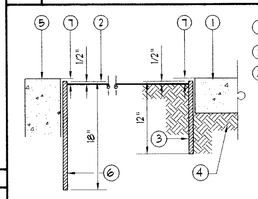
SCALE: NONE



1. GROUNDCOVER PLANT FROM ONE (1) GALLON CONTAINER.
2. THREE INCH (3") LAYER OF BARK MULCH. REFER TO PLANTING NOTES FOR ADDITIONAL INFORMATION.
3. FINISH GRADE.
4. COMPACTED SUBGRADE.
5. AMENDED SOIL, INCLUDING FERTILIZER TABLETS. REFER TO PLANTING NOTES/SPECIFICATIONS.

5 GROUNDCOVER PLANTING

SCALE: NONE



KEY

1. CONCRETE WALK
2. FINISH GRADE
3. TEN (10') - TWO LINEAL FEET (2 L.F.) SECTIONS OF RS-12 ROOT DEFLECTOR ADJACENT TO CONCRETE PAVING FOR A TOTAL OF TWENTY LINEAL FEET (20 L.F.) AT EACH TREE. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS WITH DEFLECTORS POINTING TOWARD TREE TRUNK.
4. COMPACTED SUBGRADE
5. STREET CURB
6. TEN (10') - TWO LINEAL FEET (2 L.F.) SECTIONS OF RS-18 ROOT DEFLECTOR ADJACENT TO CONCRETE CURB FOR A TOTAL OF TWENTY LINEAL FEET (20 L.F.) AT EACH TREE. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS WITH DEFLECTORS POINTING TOWARD TREE TRUNK.
7. 1" CLEAR ADJACENT TO LAWN AREAS, 2" CLEAR ADJACENT TO PLANTING AREAS, TYPICAL.

NOTES:

A. REFER TO PLANTING PLANS FOR LOCATION OF ROOT BARRIERS.

B. ROOT BARRIER PANELS SHALL BE 12" DEEP ALONG SIDEWALK AND 18" DEEP ALONG CURB.

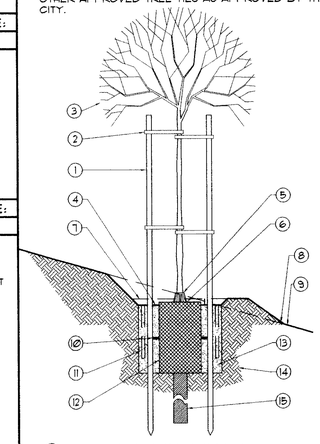
C. ROOT DEFLECTORS (RS-12 AND RS-18) ARE AVAILABLE FROM ROOT SOLUTIONS, 40 BELVEDERE, SUITE 2, SAN RAFAEL, CALIFORNIA 94901, TELEPHONE NUMBER: 415/459.7311.

6 ROOT BARRIER

SCALE: NONE

NOTES

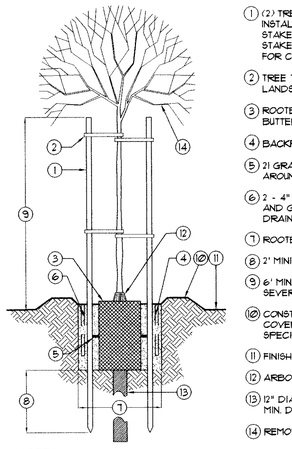
1. FOR 5 GALLON, 15 GALLON, AND 24" BOX TREES, USE TWO LODGEPOLE PINE TREE STAKES, PEELED AND TREATED WITH COPPER NAPTHANATE. TREE STAKES SHALL BE 2" DIAMETER BY 10' LENGTH MINIMUM FOR TREES UP TO 2" CALIFER AND 3" DIAMETER BY 10' LENGTH MINIMUM FOR LARGER TREES. SECURE TREE TO STAKES WITH (4) CINCH TIE TREE TIES AND NAIL TO EACH SIDE OF STAKE WITH GALVANIZED ROOFING NAIL.
2. FOR 36" BOX TREES, STAKE WITH TWO 2" X 12' LONG SCHEDULE 40 GALVANIZED STEEL PIPES, PAINTED WITH TWO COATS OF DARK GREEN PAINT. TIE TREE WITH A METAL TWIST BRACE BOLTED TO THE STAKES OR OTHER APPROVED TREE TIES AS APPROVED BY THE CITY.



1. (2) TREE STAKES, SEE NOTES FOR DESCRIPTION AND SIZES. INSTALL IN LINE PERPENDICULAR WITH PREVAILING WINDS. STAKES ARE BELOW FIRST MAJOR TREE BRANCHING. PLACE STAKES OUTSIDE OF ROOTBALL. USE ONLY ONE SINGLE STAKE FOR CONIFERS, (TYPICAL).
2. TREE TIES, SEE NOTES FOR DESCRIPTION. SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL.
3. REMOVE NURSERY STAKES, LEAVE LOWER BRANCHES.
4. FINISH GRADE
5. ARBOR GUARD IN LAWN AREAS ONLY.
6. SET ROOTBALL 2" ABOVE FINISH GRADE.
7. 4" WATER BASIN IN PLANTING AREAS ONLY. COVER WITH 3" LAYER OF MULCH. SEE PLANTING NOTES.
8. BLEND INTO EXISTING SLOPE.
9. EXISTING SLOPE @ 2:1 MAX.
10. SLOW RELEASE FERTILIZER TABLETS, TYP. PLACE REQUIRED NUMBER AROUND ROOTBALL WITH BACKFILL. TABLETS TO BE PLACED 2-3" BELOW FINISH GRADE.
11. TWO (2) 4" DIA. X 3' RIGID PERFORATED DRAIN PIPE WITH 3/4" DRAIN ROCK AND GREEN PVC SLOT DRAIN GRATE. SECURE GRATE TO DRAIN PIPE WITH SET SCREWS.
12. BUTTERFLY ROOTBALL. SPECIMENS WITH CIRCLING ROOTS, HOOKED ROOT OR SPECIMENS THAT ARE ROOTBOUND WILL NOT BE ACCEPTED.
13. BACKFILL MIX OF 75% NATIVE SOIL, 25% SOIL AMENDMENT.
14. COMPACTED SUBGRADE.
15. 12" AUGERED HOLE THROUGH HARDPAN AS REQUIRED 10'-0" MIN. DEPTH, BACKFILL WITH DRAIN ROCK.

1 TREE PLANTING ON A SLOPE

SCALE: NONE



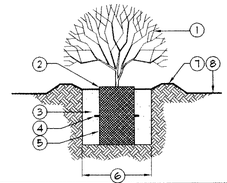
1. (2) TREE STAKES, SEE NOTES FOR DESCRIPTION AND SIZES. INSTALL IN LINE PERPENDICULAR WITH PREVAILING WINDS. STAKES ARE BELOW FIRST MAJOR TREE BRANCHING. PLACE STAKES OUTSIDE OF ROOTBALL. USE ONLY ONE SINGLE STAKE FOR CONIFERS, (TYPICAL).
2. TREE TIES, SEE NOTES FOR DESCRIPTION. SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL.
3. ROOTBALL IS SET 2" HIGHER THAN SURROUNDING GRADE. BUTTERFLY ROOTBALL. NO ROOT BOUND TREES ACCEPTED.
4. BACKFILL MIX, 75% NATIVE SOIL AND 25% SOIL AMENDMENT.
5. 21 GRAM FERTILIZER TABLETS (20-10-5) EQUALLY SPACED AROUND ROOTBALL. SEE NOTES OR SPECIFICATIONS.
6. 2 - 4" DIA. X 3' RIGID PERF. DRAIN PIPE W/ 3/4" DRAIN ROCK AND GREEN PVC SLOT DRAIN GRATE. SECURE GRATE TO DRAIN PIPE WITH SET SCREWS.
7. ROOTBALL DIMENSION PLUS 8" ON ALL SIDES.
8. 2" MINIMUM.
9. 6" MINIMUM, AND AS REQUIRED FOR LARGE TREE HEIGHTS OR SEVERE CONDITIONS.
10. CONSTRUCT WATERING BASIN, 4" HIGHER THAN ROOTBALL. COVER WITH 3" MULCH OF BARK. SEE NOTES OR SPECIFICATIONS.
11. FINISH GRADE.
12. ARBOR GUARD IN LAWN AREA.
13. 12" DIA. AUGURED HOLE THROUGH HARDPAN, AS REQUIRED. 10' MIN. DEPTH. BACKFILL WITH DRAIN ROCK.
14. REMOVE NURSERY STAKES. LEAVE LOWER BRANCHES.

NOTES

1. FOR 5 GALLON, 15 GALLON, AND 24" BOX TREES, USE TWO LODGEPOLE PINE TREE STAKES, PEELED AND TREATED WITH COPPER NAPTHANATE. TREE STAKES SHALL BE 2" DIAMETER BY 10' LENGTH MINIMUM FOR TREES UP TO 2" CALIFER AND 3" DIAMETER BY 10' LENGTH MINIMUM FOR LARGER TREES. SECURE TREE TO STAKES WITH (4) CINCH TIE TREE TIES AND NAIL TO EACH SIDE OF STAKE WITH GALVANIZED ROOFING NAIL.
2. FOR 36" BOX TREES, STAKE WITH TWO 2" X 12' LONG SCHEDULE 40 GALVANIZED STEEL PIPES, PAINTED WITH TWO COATS OF DARK GREEN PAINT. TIE TREE WITH A METAL TWIST BRACE BOLTED TO THE STAKES OR OTHER APPROVED TREE TIES AS APPROVED BY THE CITY.

2 TREE PLANTING

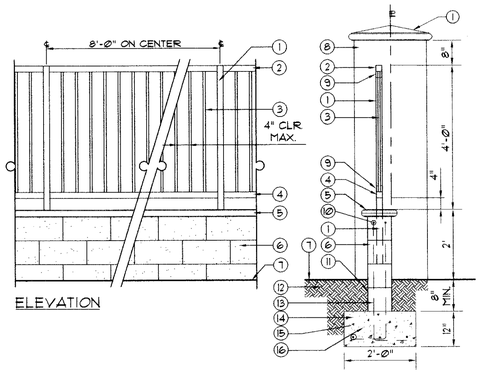
SCALE: NONE



1. 1 GALLON OR 5 GALLON SHRUB
2. ROOTBALL IS SET 2" HIGHER THAN SURROUNDING GRADE
3. PREPARED BACKFILL MIX OF 75% NATIVE SOIL AND 25% SOIL AMENDMENT.
4. SLOW RELEASE FERTILIZER TABLETS, TYP.
5. ROOTBALL
6. 2 TIMES ROOTBALL DIAMETER
7. 4" WATER BASIN WITH 3" MULCH OR BARK. REFER TO PLANTING NOTES FOR ADDITIONAL INFORMATION.
8. COMPACTED SUBGRADE

3 SHRUB PLANTING

SCALE: NONE



ELEVATION

SECTION/ELEVATION

KEY

1. 2" SQUARE TUBULAR STEEL VERTICAL SUPPORT POST. EMBED POSTS IN CONCRETE MASONRY UNIT BLOCK 16" MINIMUM. SPACE POSTS AT 8'-0" ON CENTER.
2. 2" SQUARE 14 GAUGE TUBULAR STEEL TOP RAIL.
3. 3/4" SQUARE 16 GAUGE TUBULAR STEEL VERTICAL BARS. FILET WELD AND GRIND SMOOTH ALL AROUND AT EACH HORIZONTAL RAIL, TYPICAL. SPACE BARS AT 4" MAXIMUM CLEAR.
4. 2" SQUARE 14 GAUGE TUBULAR STEEL BOTTOM RAIL.
5. 12" PRECAST CONCRETE WALL CAP. CAP SHALL BE 'CLASSIC' STRAIGHT PIECES AS MANUFACTURED BY STEPSTONE, INC. SIZE OF STRAIGHT PIECES ARE 12" X 24" X 2-1/2" AND CENTER CAP ON CMU WALL WITH 2" OVERHANG ON EACH SIDE. COLOR OF CAP SHALL BE CAFE BROWN, #507.
6. 8 X 8 X 16 CONCRETE MASONRY UNIT BLOCK. ALL BLOCKS SHALL BE SPLIT FACE TEXTURE ON THE PUBLIC SIDE AND COMB FACE TEXTURE ON THE PRIVATE GROUT ALL CELLS SOLID. ALIGN BACK OF WALL ON PROPERTY LINE.
7. FINISH GRADE.
8. 2'± SQUARE CONCRETE MASONRY UNIT BLOCK PILASTER. REFER TO DETAIL AND ENGINEERED STRUCTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. WELDED BRACKET. ATTACH TO PILASTER WITH MASONRY ANCHOR WHERE REQUIRED AT EACH RAIL TO PILASTER CONNECTION POINT.
10. 2 - #4 HORIZONTAL REBAR CONTINUOUS @ TOP COURSE.
11. EXTEND CONCRETE MASONRY UNIT BLOCK THREE INCHES MINIMUM (3" MIN.) BELOW FINISH GRADE.
12. COMPACTED SUBGRADE.
13. #4 VERTICAL REBAR @ 16" ON CENTER. BEND INTO COTING.
14. CONCRETE FOOTING. REFER TO CONCRETE FOOTING ON STRUCTURAL DETAIL 1, SHEET S-2, FOR ADDITIONAL INFORMATION.
15. 2 - #4 LONGIT.
16. #4 TRANS @ 16" ON CENTER.

NOTES

A. CONTRACTOR SHALL VERIFY ALL DIMENSION PRIOR TO CONSTRUCTION.

B. ALL TUBULAR STEEL SHALL BE POWDERCOATED BLACK. CONTRACTOR SHALL SUBMIT SAMPLE FOR APPROVAL BY OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.

C. ALL VERTICAL TUBULAR STEEL POSTS SHALL BE PROVIDED WITH TOP METAL CAPS. COLOR SHALL MATCH COLOR OF STEEL VERTICAL POSTS/BARS.

D. FILET WELD AND GRIND SMOOTH ALL JOINTS FOR TUBULAR STEEL MEMBERS.

E. PRECAST CONCRETE WALL CAP SHALL BE MANUFACTURED BY: STEPSTONE INC., 17025 S. MAIN STREET, GARDENA, CALIFORNIA 90248. TELEPHONE NUMBER: 800/578.9029. CAPS ARE AVAILABLE FROM SILVERADO BUILDING MATERIALS, 9297 JACKSON HIGHWAY, SACRAMENTO, CALIFORNIA 95826. TELEPHONE NUMBER: 916/361.1374. CONTACT JODI HOLMES.

F. ALL CONCRETE MASONRY UNIT BLOCK SHALL BE MANUFACTURED AND AVAILABLE FROM BASALITE CONCRETE PRODUCTS, LLC. CONTACT REPRESENTATIVE: RAMONA KOEHLER-LEAMY, TELEPHONE NUMBER: 916/393.2033. COLOR OF BLOCK SHALL BE #345 (TAN). ALL BLOCK SHALL BE SPLIT FACE TEXTURE ON ONE SIDE, COMB FACE TEXTURE THE OTHER SIDE.

G. CONTRACTOR SHALL APPLY TWO (2) COATS OF NON-SACRIFICIAL GRAFFITI COATING TO PUBLIC SIDE OF PILASTER. GRAFFITI COATING SHALL BE MONOCHEM PERMA SHIELD AS AVAILABLE FROM VISTA PAINT, TELEPHONE NUMBER: 916/858.1818. UPON COMPLETION OF GRAFFITI COATING APPLICATION, CONTRACTOR SHALL SEND GUARANTEE LETTER TO LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE STATING COATING APPLICATION HAS BEEN COMPLETED PER MANUFACTURER'S RECOMMENDATIONS AND THE COUNTY'S SPECIFICATIONS.

H. FOOTING AND REBAR SHOWN ARE DIAGRAMMATIC ONLY. ENGINEERED STRUCTURAL CALCULATIONS ARE INCLUDED IN THIS SET OF PLANS. REFER TO STRUCTURAL DETAILS, SHEET S-1, AND STRUCTURAL DETAIL 1, SHEET S-2 FOR ADDITIONAL INFORMATION.

I. GROUT ALL CONCRETE BLOCKS SOLID.

J. REFER TO LAYOUT AND CONSTRUCTION PLANS, SHEETS LC-1 THROUGH LC-4, FOR LOCATIONS OF CONCRETE MASONRY UNIT BLOCK PILASTERS AND 2' HIGH MASONRY WALL WITH 4' HIGH OPEN STEEL FENCES AND ADDITIONAL INFORMATION.

7 2' HIGH MASONRY WALL WITH 4' HIGH OPEN STEEL FENCE

SCALE: ½"=1'-0"

No.	Description	Engr Init	CITY APPROVAL By	Date

REGISTERED LANDSCAPE ARCHITECT — CRAIG D. PARK — No. 1719 — Exp. May 31, 2008 — Signature — Date — STATE OF CALIFORNIA

CRAIG PARK ASSOCIATES REVISIONS | BY

Craig Park
Associates
Landscape Architects ★ Planners
2747 Riverside Boulevard
Sacramento, California 95818
916/444-2026
FAX 916/444-1886

CONSTRUCTION DETAILS

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date 6-20-06
Scale AS NOTED
Drawn
Job
Sheet 17
CD-2
Of 22 Sheets

SECTION 02810
IRRIGATION SYSTEM

1.01 RELATED DOCUMENTS

A. The requirements of the General Conditions, Supplementary Conditions, and Division 1, General Requirements, apply to work of this Section.

1.02 SCOPE OF WORK

A. Provide all labor, materials, equipment, and services necessary to furnish and install the recycled and potable water irrigation systems as shown on the drawings and described herein.

B. Installation of 120 volt controller enclosure.

C. Connection of system to potable water supply.

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Planting – Section 02900

1.04 QUALITY ASSURANCE & REQUIREMENTS

A. Permits and Fees

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

B. Manufacturer's Directions

Manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of articles used in this contract 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 this 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 shall not be construed to conflict with any of the above rules and regulations or requirements of the same. However, when these specifications and drawings call for or describe materials, workmaship, or onstruction 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. All offsets, fittings, sleeves, etc., which may be required, are not indicated. Carefully investigate the structural and finished conditions affecting all of the work and plan the 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 system and planting or architectural features.
2. Discrepancy in drawings shall be brought to the attention of the Landscape Architect. Contractor assumes full responsibility for work installed without clarification.

1.05 SUBMITTALS

A. Material List

1. Furnish the articles, equipment, materials, or processes specified by name in th drawings and specifications per requirements of Division 1. No substitution will be allowed without prior written approval by the Landscape Architect.
2. Complete material list shall be submitted prior to performing any work. Material list shall include the manufacturer, model number, and description of all materials to be used.
3. Equipment or materials installed or furnished without prior approval of the Landscape Architect may be rejected and the Contractor required to remove such materials from the site at his own expense.
4. Approval of any item, alternate or substitute, indicates only that the product or products apparently meet the requirements of the drawings and specifications on the basis of the information or samples submitted.
5. All proposed substitutions shall be accompanied with the items it is intended to replace.

B. Record Drawings

1. The Contractor shall dimension from 2 permanent points of reference, building corners, sidewalk, or road intersections, etc., the location of the following items:
   a. Connection to existing potable water lines.
   b. Connection to existing electrical power and installation of 120 volt controller enclosure.
   c. Gate valves
   d. Routing of irrigation main lines (dimensioned maximum one hundred feet along routing).
   e. Sprinkler control valves.
   f. Routing of control wiring.
   g. Quick–coupling valves.
   h. Sleeves under paving.
   i. Other related equipment as directed by the Landscape Architect.
2. Before the date of the final inspection, the Contractor shall deliver the corrected and completed mylars to the Landscape Architect. 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 Chart

1. Record drawings shall be approved by the Landscape Architect before controller charts are prepared.
2. Provide one (1) 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 blueline 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 (2) pieces of plastic, each piece being a minimum of ten (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 operation and maintenance manuals as follows:
   a. Catalog and parts sheets on every material and equipment installed under this contract.
   b. Guarantee statement.
   c. Complete operating and maintenance manuals.
2. In addition to the above–mentioned maintenance manuals, provide the Owner's maintenance personnel with instructions for operation of major equipment and show evidence in writing to the Landscape Architect at the conclusion of the project that this service has been rendered.

E. Equipment to be Furnished

1. Supply as a part of the contract the following tools:
   a. Two (2) sets of special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied on this project.
   b. Two (2) keys for each automatic controller.
   c. One (1) quick–coupling key and matching hose swivel for every six, or fraction of, quick–coupling valves shown on the drawing.
2. The above–mentioned equipment shall be turned over to the Owner at the conclusion of the project. Before final inspection may occur, evidence that the Owner has received material must be shown to the Landscape Architect.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

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 shall be transported in a vehicle which allows the length of 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.

1.07 JOB CONDITIONS

A. Protection:

1. Avoid trenching under the drip line of existing trees and shrubs where possible. IF it is absolutely necessary to install irrigation lines within the dripline of the tree, the irrigation line shall be bored or drilled under the direct supervision of a certified arborist. Trees or shrubs killed or severely damaged as a result of negligence under work of this Section shall be replaced in kind and size.

B. Paving and landscape headers shall be in place prior to installation of sprinkler heads.

C. Scarifying and/or loosening of soil in planting areas specified under another Section shall be done prior to installation of any pipe.

D. Obtain Landscape Architect's approval of rough grades prior to the installation of any pipe.

1.08 GUARANTEE

The guarantee for the sprinkler irrigation system shall be made in accordance with the form shown below. A copy of the guarantee form shall be included in the operations and maintenance manual. The guarantee form shall be retyped on 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 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 Owner. We shall make such repairs or replacements within a reasonable time, as determined by the Owner, after receipt of written notice. In the event of our failure to make such repairs or replacements within a reasonable time after receipt of written notice from the Owner, we authorize the Owner to proceed to have said repairs or replacements made at our expense and we will pay the costs or charges therefore upon demand.

PROJECT: Laguna Ridge Drainage Parkway – Paseo Greenbelt and Wetlands Riparian Habitat Mitigation Area

LOCATION: City of Elk Grove, California

SIGNED: _____
Contractor

ADDRESS: _____

_____

TELEPHONE NUMBER: _____

DATE OF ACCEPTANCE: _____

1.09 VERIFICATION OF LINES AND LEVELS

A. All scaled dimensions are approximate.

B. Spacing of sprinkler heads and locations of valves and quick couplers shall be indicated on the drawings and specified herein. Above items shall be staked out and any deviation from drawings or specifications shall have the written approval of Architect prior to installation.

PART 2 – PRODUCTS

2.01 MATERIALS

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

B. PVC Pressure Main Line Pipe and Fittings (FOR POTABLE WATER SYSTEMS)

1. Main line shall be no. 1120 Class 315 PVC for all main line two inches or larger (2" <), and Schedule 40 PVC for all pressure main line one–and–a–half inches or smaller (1–1/2" >).
2. PVC solvent–weld fittings shall be schedule 40, 1–2, II–I NSF approved conforming to ASTM test procedure D2466.
3. Solvent cement and primer for PVC solvent–weld pipe and fittings shall be of type and installation methods prescribed by the manufacturer.
4. All PVC pipe shall bear the following markings:
   a. Manufacturer's name.
   b. Nominal pipe size.
   c. Schedule or class.
   d. Pressure rating in psi.
   e. National Sanitation Foundation (NSF) approval.
   f. Date of extrusion.
5. All fittings shall bear the manufacturer's name or trademark, material designation, size applicable, psi, schedule, and NSF seal of approval.

C. PVC Non–Pressure Lateral Line Piping (FOR POTABLE WATER SYSTEMS)

1. Non–pressure buried lateral line piping shall be no. 1120 class 200 PVC.
2. Pipe shall be made from NSF approved Type I, Grade II PVC compound conforming to ASTM resin specification D1784. All pipe shall meet requirements set forth in Federal Specification PS–22–70, with an appropriate standard dimension ratio (SDR).
3. Except as noted in paragraphs 1 and 2 of Section 2.01B, 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 Section 2.01B of these specifications.

D. Gate Valves (FOR POTABLE WATER SYSTEMS)

1. Gates valves shall be one hundred twenty–five psi rated, SWP bronze, with screw–in bonnet, non–rising stem, solid wedge disc, threaded connections, and bronze handwheel.
2. Gate valves two inches and smaller (2">) shall be a solid wedge type, one hundred fifty psi, brass or bronze body, screwed ends. Valve boxes shall have a locking cover. Set box flush to grade.
3. Gate valves 2–1/2" and larger (> 2–1/2") shall have a 2" square operating nut and shall be provided with a tee handle per each two gate valves. Valve box shall have a locking cover. Set box flush to grade.

E. Quick–Coupling Valves (FOR POTABLE WATER SYSTEMS)

Quick–coupling valves shall have a brass or bronze two–piece body designed for a working or static pressure of one hundred fifty psi operable with quick coupler key and yellow colored tops. Quick coupling keys shall be of a type designed to operate quick coupling valve.

F. Control Wiring

1. Connections between the automatic controllers and the electric control valves shall be made with direct burial copper wire 14–1 AWG–UF 600 volt. Pilot wires shall be a different color for each automatic controller. Common wires shall be white in color, with a different color stripe for each controller (stripe to match pilot wire color for each controller). Size of wire to conform with remote control valve manufacturer's specifications and wire chart. In no case shall wire size be less than no. 14.
2. Wire shall occupy the same trench and shall be installed along the same route as pressure main line 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 feet (10').
4. An expansion coil shall be provided within three feet (3') of each wire connection. Expansion coil shall be of sufficient length at each splice connection at each remote control valve, so that in case of repair, the valve bonnet may be to the surface without disconnection of the control control valve wires. Control wires shall be laid loosely in trench without stress or stretching of control wire conductors.
5. All splices shall be made with a copper crimp–type connector and a 3–M no. DBY splice kit.
6. Field splices between the automatic controller and remote control valves will not be allowed without prior approval of the Landscape Architect.
7. Contractor shall install two (2) spare wires starting from the controller, looped to each valve box and to the furthest valve boxes, without splices. The color of all spare wires shall be yellow.

G. Automatic Controller (FOR POTABLE WATER SYSTEMS)

1. Automatic controllers shall be of the type and size shown on the plans.
2. Final location of automatic controller shall be approved by the Landscape Architect.
3. Unless otherwise noted on the drawings, the 120 volt electrical power to the automatic controller location is to be furnished by the irrigation contractor. The final electrical hook–up shall also be the responsibility of the irrigation contractor.

H. Remote Control Valves (FOR POTABLE WATER SYSTEMS)

1. All remote control valves shall be the type and size shown on the drawings.
2. All remote control valves shall have a manual bleed and a flow control feature.
3. All remote control valves shall be tagged with identification tags conforming to the following:
   a. One tag shall be attached to each valve as follows:
      1. Attach to valve stem directly or with plastic tie wrap, or;
      2. Attach to solenoid wire directly or with plastic tie wrap, or;
      3. Attach to valve cover with existing valve cover bolt.
   b. Tag shall indicate corresponding controller station number.

I. Valve Boxes (FOR POTABLE WATER SYSTEMS)

1. Use ten inch diameter (10") round plastic valve box with bolt–down lid for all gate valves and quick couplers; Carson no. 910 or approved equal.
2. Use ten inch by seventeen inch inner diameter (10" x 17" ID) plastic valve box with bolt–down lid for remote control valves; Carson no. 1419 or approved equal.

J. Sprinkler Heads (FOR POTABLE WATER SYSTEMS)

1. All sprinkler heads shall be of the same size, type, and deliver the same rate of precipitation with the radius of throw, pressure, and discharge as listed on the drawings.
2. Spray heads shall have a screw adjustment for radius.
3. Riser units shall be fabricated in accordance with the details.

K. Valve Manifold and Riser Fittings

1. Connection between main lines and remote control valves shall be of schedule 80 PVC (threaded both ends) nipples and fittings.
2. Risers for sprinkler heads shall be schedule 80 PVC nipples unless otherwise shown on the drawings.

L. Water Meter with Box and Lid

1. Water meters are existing.

M. Electrical Service Pedestal

1. Electric service is located on back of controller enclosure (120 volt enclosure).

PART 3 – EXECUTION

3.01 INSPECTION

A. Site Conditions

1. All scaled dimensions are approximate. The Contractor shall check and verify all size dimensions and receive Landscape Architect's approval prior to proceeding with work under this section.
2. Exercise extreme care in excavating and working near existing utilities. Contractor shall be responsible for damages to utilities which are caused by his operation or neglect. Check existing utility drawings, and contact the appropriate utility companies to determine existing utility locations.
3. Coordinate installation of sprinkler irrigation materials, including pipe, so there is no interference with utilities or other construction or difficulty in planting trees, shrubs, and groundcovers.
4. The Contractor shall carefully check all grades to satisfy himself that he may safely proceed before starting work on the sprinkler irrigation system.

B. Site Water Pressure

1. The Contractor shall verify the available water pressure on the site prior to construction. Report to Landscape Architect any difference between the water pressure on the drawings and the actual pressure reading at the point of connection. In the event pressure differences are not reported prior to the start of construction, the Contractor shall assume full responsibility for any revisions necessary.

3.02 PREPARATION

A. Physical Layout

1. Prior to installation, the Contractor shall stake out all pressure main supply lines, routing, and location of sprinkler heads and laterals.
2. All layouts should be approved by Landscape Architect prior to installation.

B. Water Supply

1. Sprinkler irrigation system shall be connected to potable water supply points of connection as indicated on the drawings.
2. Connections shall be made at appropriate locations as shown on drawings. Contractor is responsible for minor changes caused by actual site conditions, in order to provide one hundred percent (100%) coverage of all landscape areas.

3.03 INSTALLATION

A. Trenching

1. Dig trenches straight and support pipe continuously on bottom of trench. Lay pipe at an even grade. Trenching excavation shall follow layout indicated on the drawings or as approved in the field by Landscape Architect.
2. Trenching shall be of sufficient depth to provide twenty–four inches (24") of cover over main lines and control wiring, eighteen inches (18") of cover over 12" pop–up spray head rigid PVC lateral lines, and twelve inches (12") of cover over all other lateral lines. Where there are discrepancies and minimum depths of cover cannot occur, Contractor shall contact Landscape Architect, County Representative, and City Construction Services. All lines under paving shall be buried with thirty inches (30") of cover.

B. 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 landscape areas to a dry density equal to adjacent undisturbed soil in planting areas. Backfill will conform to adjacent grades without dips, humps, sunken areas, or other surface irregularities.
2. A fine granular material backfill is to be initially placed on all lines. No foreign matter larger than one–half inch (1/2") in size will be permitted in the initial backfill.
3. If settlement occurs and subsequent adjustments in pipe, valves, sprinkler heads, planting, or other construction are necessary, the Contractor shall make all required adjustments without cost to the City.

C. Trenching and Backfilling Under Paving

1. Trenches located under areas where paving, asphaltic concrete or concrete will be installed shall be backfilled with sand (a layer 6 inches below the pipe and 3 inches above the pipe) and compacted in layers to ninety–five percent (95%) 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.
2. Provide for a minimum cover of thirty inches (30") between the top of the pipe and the bottom of the aggregate base for all pressure and non–pressure piping installed under asphaltic concrete paving or concrete paving.

D. Assembling Pipelines

1. All pipe shall be assembled free from dirt and pipe scale. Use factory formed threads only. No threading in the field will be permitted.
2. Solvent Weld Joint
   a. Prepare joint by first making sure the pipe end is square, then deburring the pipe end and cleaning pipe end fitting of dirt, dust, and moisture.
   b. Dry–insert pipe into fitting to check for mis–sizing. Pipe should enter fitting 1/3 to 2/3 the depth of the socket.
   c. Coat the inside socket surface of the fitting and the external surface of the male end of the pipe with P–70 primer (manufactured by Weld–on). Then without delay, apply weld–on 711 cement liberally to the male end of the pipe and also apply 711 cement lightly to the inside of the socket. At this time, apply a second coat of cement to the pipe end.
   d. Insert pipe immediately into fitting and turn one–quarter (1/4) turn to distribute cement and air bubbles. The pipe must seat to the bottom of the socket. Check alignment of the fitting. Pipe and fitting shall be aligned properly without strain to either.
   e. Hold joint still for approximately 30 seconds and then wipe off excess cement from the pipe and fitting.
   f. Cure joint a minimum of 30 minutes before handling, and at least 6 hours before allowing water in the pipe.

E. 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 drawings.
2. Install no multiple assemblies on plastic lines. Provide each assembly with its own outlet.
3. Install all assemblies specified herein in accordance with the respective detail. In absence of detailed drawings or specifications pertaining to specific items required to complete work, perform such work in accordance with the best standard practice with prior approval of Landscape Architect.
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; Teflon tape or approved equal shall be used on all threaded PVC to PVC joints, 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.

F. Line Clearance

1. All lines shall have a minimum clearance of 3" from each other and 6" from lines of other trades. Parallel lines shall not be installed directly above one another.

G. Automatic Controller

1. Install per manufacturers instructions. Remote control valves shall be connected to controller in numerical sequence, as shown on the drawings.

H. High Voltage Wiring for Automatic Controller

1. All wiring for power to controllers shall be performed by licensed electrical contractors.
2. All electrical work shall conform to local codes, ordinances, and governing authorities having jurisdiction.
3. All conduits, panels, meters, and other electrical components shall be installed in conformance with the local power supplying company.
4. All electrical equipment, materials, and workmanship shall be in strict accordance with the requirements of the National Electrical Code, the Electrical Safety Orders of the Industrial Accident Commission, of the State of California, and National Electrical Manufacturer's Association, applicable County ordinance, and the City of Elk Grove Requirements.

I. Remote Control Valves

1. Install where shown on drawings, per details. Provide a minimum distance of 6" clear between valve boxes.

J. Flushing of System

1. After all new sprinkler pipelines 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 Landscape Architect.

K. Sprinkler Heads

1. Install the sprinkler heads as designated on the drawings. Sprinkler heads to be installed in this work shall be equivalent in all respects to those itemized.
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.
3. Install bubbler heads on high side of rootballs and within watering basins.

3.04 TEMPORARY REPAIRS

The Owner 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 Owner shall not relieve the Contractor of his responsibilities under the terms of the guarantee as herein specified.

3.05 ADJUSTMENT OF THE SYSTEM

A. The Contractor shall flush and adjust all sprinkler heads for optimum performance.

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 patterns.

C. Lowering raised sprinkler heads by the Contractor shall be accomplished within 10 days after notification by the Owner.

D. All sprinkler heads shall be set perpendicular to finish grades unless otherwise shown on the drawings.

REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
Signature
Date
STATE OF CALIFORNIA

REVISIONS	BY

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SPECIFICATIONS

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date 6–20–06
Scale NONE
Drawn
Job
Sheet 18
SP-1
Of 22 Sheets

SECTION 02900
PLANTING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. The requirements of the General Conditions, Supplementary Conditions, and Division 1, General Requirements, apply to work of this Section.

1.02 SCOPE OF WORK

A. Work Included in This Section: Furnish all labor, materials, tools, equipment, material and transportation and perform all operations necessary and incidental to proper execution and completion of all planting in accordance with the drawings and specifications. The work includes, but is not limited to, the following:

1. Finish grading.
2. Soil preparation.
3. Planting of trees, shrubs, and groundcovers.
4. Installation of root deflectors.
5. Ninety (90) day establishment/maintenance period.
6. Guarantee.

B. Work Specified Under Other Sections: Consult all other sections, determine the extent and character of related work, and properly coordinate work specified herein with that specified elsewhere to produce a finished installation. Refer to Section 02810 for irrigation.

1.03 APPLICABLE PUBLICATIONS

A. The following publications of the issues listed below, but referred to thereafter by basic designation only, apply to this specification to the extent indicated by the references thereto:

1. American National Standards Institute (ANSI) Publications:
   a. ANSI Z60.1–1973: Nursery Stock
   b. ANSI Z133.1–1972: Safety Requirements for Tree Pruning, Trimming, Repairing or Removal
2. American Joint Committee on Horticultural Nomenclature Publications:
   a. Second Edition, 1972: Standardized Plant Names

1.04 SUBMITTALS

A. Plant Material Source: The Contractor shall submit a minimum of three (3) nursery sources of plant materials for review and approval by Landscape Architect within thirty (30) days following award of contract. Contractor shall provide photographs of each species available from all nurseries considered. Landscape Architect reserves the right to select the nursery sources and plant materials purchased from each nursery.

B. Samples:

1. Submit duplicate samples and manufacturer's guaranteed analysis of the following items and such other materials as may be required by the Architect, and obtain written approval thereof before beginning fabrications or delivery of material to the project site. Finished work shall match approved samples.
   a. Soil amendments and mulch materials (with laboratory organic analysis).
   b. Fertilizers, manufacturer's specification sheets.
   c. Tree ties and tree stakes.

C. References, Standards and Codes: The following references, codes and standards apply to this Section and all work of this Section shall conform to the applicable requirements except as otherwise specified herein or as shown on the Drawings:

1. Nomenclatures: Plant names listed on drawings conform to Standardize Plant Names established by the American Joint Committee on Horticultural Nomenclature, except that for names not covered therein, the established custom of the nursery trade is followed.
2. Plants shall conform with American Association of Nurserymen Standards, ANSI Z60, in all ways.

D. Certificates: Furnish all certificates of inspection that are required by County and State authorities.

1.05 JOB CONDITIONS

A. Examine the conditions under which the landscape planting is to be installed for conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

B. Delivery:

1. Notify the Architect of the delivery schedule in advance so that the plant material may be inspected upon arrival at the jobsite. Unacceptable plant material shall be removed from the jobsite immediately.
2. Plants shall be protected during delivery to prevent damage to the root balls or desiccation of leaves.
3. All plants delivered shall have labels including botanical name and varieties if applicable. Plants delivered without labels shall be returned to the nursery.

C. Storage:

1. Plants not installed on the day of arrival at the site shall be stored and protected as follows:
   a. Outside storage shall be shaded and protected from wind and sun.
   b. Plants shall be kept in a moist condition until planted, by watering.
   c. Lime and fertilizer shall not be stored with any other landscape materials.
   d. Soil sterilent shall not be stored with any other landscape materials.
2. Storage of materials shall be only in areas designated or as approved by Owner.
3. Handling: Care shall be taken to avoid damaging plants being moved from the nursery or storage areas to the planting site. Plants shall be protected from drying out. Plants shall not be handled by the trunk or stems. Plants shall be protected from freezing or drying out by a covering of burlap, tarpaulin, or mulching material during transportation from the heeling–in bed to the planting site. Damaged plants shall be rejected and shall be removed from the site.

D. The replacement of any material or necessary materials required to complete all landscape work, which have been lost because of theft, vandals, weather, etc. is the responsibility of the Contractor.

1.06 MAINTENANCE PERIOD/FINAL ACCEPTANCE REQUIREMENTS

A. Guarantee all plants and planting in a healthy, thriving condition until the end of the maintenance period or until active growth is evident.

B. Replace all dead plants and plants not in a vigorous condition as soon as directed by the Architect.

1. Plants used for replacement shall be of the same kind and size as specified, planted and maintained as specified above.
2. All replacement of plants shall be done before the final acceptance of work.

1.07 GUARANTEE

A. All plant materials shall be guaranteed to take root and grow and thrive for a period of one year after final acceptance of work.

B. Any plant materials that die back and lose the form and size originally specified shall be replaced, even though replaced, even though they have taken root and are growing after the die–back.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Topsoil, if required: Imported topsoil shall be furnished by the Contractor and shall be a natural, friable soil representative of productive soils in the vicinity. It shall be obtained from well–drained areas and shall be free from admixture of subsoil and foreign matter of objects larger than one inch in any dimension, toxic substances, and any material or substances that may be harmful to plant growth.

B. Commercial Fertilizers and Soil Amendments: The actual commercial fertilizers and soil amendments shall be as specified in this Section. The following are typical fertilizer and amendment requirements anticipated for this project:

1. Commercial Fertilizers: Commercial fertilizers and chemical soil amendments shall be delivered to the site of the work in sealed bags with the manufacturer's analysis printed on or attached to each bag. The Contractor shall not use the fertilizer or chemical amendment until the quantity and analysis have been inspected and accepted by the Architect. Chemical soil amendments use on the project are:

   a. Commercial fertilizer for all planting areas shall be Ammonium phosphate and shall have an analysis of six percent (6%) nitrogen, twenty percent (20%) phosphorus, and twenty percent (20%) potash (6–20– 20). The amounts used are described in PART 3 – EXECUTION of this Section.

   b. Commercial fertilizer for all trees, shrubs, and groundcover shall be supplied in Planting Tablet form of twenty–one grams (21 g.) each. The guaranteed analysis shall be 20–10–5, or total nitrogen derived from urea– formaldehyde twenty percent (20%), available phosphoric acid ten percent (10%), soluble potash five percent (5%), calcium two point six percent (2.6%), combined sulfur one point six percent (1.6%), iron derived from ferro–sulfate point three five percent (0.35%). The amounts used are described in the EXECUTION part of this section.

   c. Material Delivery and Storage: Manufactured materials shall be delivered in original containers with brand and makers name marked thereon. Materials in broken containers or showing evidence of damage will be rejected and must be immediately removed from the site. Odorous materials shall not be brought to the site until they are to be used.

   d. Certificates: Furnish a certificate for each delivery of materials to the site in containers or in bulk. Certificate shall state source, quantity or weight, type and analysis, and date of delivery.

   e. All fertilizer and soil amendments shall be first quality, standard brand, agricultural products.

2. Fertilizers and Soil Conditioners:

   a. Nitrolized Redwood Sawdust – one hundred percent (100%) Redwood sawdust; shavings not allowed.

      1) Physical properties:

Percent Passing	Sieve Sizes
95–100	6.35 mm (1/4 inch)
80–100	2.38 mm (No. 8 mesh)
0 –30	500 micron (No. 35, 32 mesh)

      2) Chemistry:
         (a) Nitrogen Content (Dry Weight Basis): 0.4–0.6 percent.
         (b) Iron Content: Minimum 0.08 percent dilute acid–soluble iron (Fe) on dry weight basis.
         (c) Soluble Salts: Maximum 3.5 millihos/centimeter at 25 degrees C as determined by saturation– extract method.
         (d) Ash (Dry Weight Basis): 0.6–0 percent

C. Pre–Emergence Weed Control: In areas of woody ornamental plants: Dymid, as manufactured by Elanco Products, Indianapolis, Indiana, or approved equal. Apply per manufacturer's instructions.

D. Anti–Desiccant: Anti–desiccants for retarding excessive loss of plant moisture and inhibiting wilt shall be sprayable, water insoluble vinyl–vinyledine complex which will produce a moisture retarding barrier not removable by rain or snow. It shall form at temperatures commonly encountered out of doors during planting season. The anti–desiccant film thus formed shall have a Moisture Vapor Transmission (MVT) rate of not more than 10 grams per 24 hours at 70% humidity. The supplier shall furnish evidence that the material can be used safely on plant materials specified. Anti–desiccants and rate of application shall meet approval of the Landscape Architect.

E. Staking Materials: Stakes – Two inch (2") diameter lodgepole pine tree stakes (ten–foot lenght) for five gallon, fifteen gallon and twenty–four inch box trees.

F. Tree Ties: Cinch–Ties, nailable to the stakes. Tree ties shall be Cinch–Tie, manufactured by V.I.T. Company, Incorporated; 920 South Andreasen Drive Suite 106; Escondido, California 92029; Telephone number: 619/480.6702, and available from Bay Irrigation and Turf Supply, Incorporated; 1017C Croydon Way; Sacramento, California 95827; Telephone number: 916/624.4513. Ties shall be of sufficient length to make a figure–eight tie as detailed.

G. Mulch: Red fir walk–on bark, 3/4" to 1–1/2" size, with not over ten percent (10%) wood fibers. Free of salt, foreign materials such as clods, coarse objects, sticks, weeds, or weed seeds and other debris considered undesirable. The pH shall not exceed six point five (6.5). Submit samples to Landscape Architect and City Construction Services, for approval prior to purchase and delivery. Contractor and supplier shall ensure bark mulch meets local fire department standards. Verification shall be submitted to Landscape Architect ensuring bark mulch is non–flammable. All planted areas are to receive a three inch (3") layer of bark mulch.

H. Plant Materials:

1. Plants shall conform to the varieties specified in the plant list and shall be true to botanical name as listed in Standardized Plant Names. Plants shall be in accordance with ANSI Z60.1 except as otherwise stated in the specifications or as shown on the plans. Where the drawings or specifications are in conflict with ANSI Z60.1 the drawings and specifications shall prevail.
2. Planting stock shall be well branched and well formed, sound, vigorous, healthy and free from disease, sun scald, windburn, abrasion and harmful insects or insect eggs and shall have healthy, normal and unbroken root systems.
3. All plants shall be symmetrically developed, of uniform habit of growth, with straight boles or stems and free from objectionable disfigurements. Plants shall have been grown under climatic conditions similar to those in the locality of the project. Plants budding into leaf or having soft growth shall be sprayed with anti–desiccant at the nursery and collection field before digging.
4. Plants shall be vigorous and have the number and length of runners and clump size specified. Only plants well–established in removable container, integral containers, or formed homogeneous soil sections shall be used. Plants shall have been grown under climatic conditions similar to those in the locality of the project. Plants budding into leaf or having soft growth shall be sprayed with anti–desiccant at the nursery and collection field befor digging.
5. The minimum acceptable sizes of all plants, measured before pruning and with branches in normal position, shall conform to the measurements indicated. Plants larger than specified may be used with the approval of the Landscape Architect with no change to contract price. If larger plants are used, the ball of earth or spread of roots shall be increased in accordance with ANSI Z60.1.
6. The Contractor shall facilitate inspection and identification by labeling plants with a durable waterproof label and weather resistant ink. Labels shall state the correct plant name and size as specified in the list of required containers of plants, and shall be legible for sixty (60) days after delivery to the planting site. Plants delivered from nurseries without labels shall be rejected.
7. Plant material shall be nursery grown under climatic conditions similar to those in Sacramento County, and shall conform to the requirements and recommendations of ANSI Z60.1. Plants shall be dug and prepared for shipment in a manner that will not cause damage to branches, shape and future development after planting.
8. Container grown plants shall have sufficient root growth to hold the earth intact when removed from containers but shall not be root bound.
9. Container stock shall be grown in containers in which delivered for at least 8 months, but shall not be root bound. Container plants with cracked or broken balls of earth when taken from containers may be planted only with specific approval of the Landscape Architect.
10. Plants shall not be pruned prior to delivery, except as authorized by the Landscape Architect.
11. Protect plants in transit and after delivery to the site. Plants in broken containers and plants with broken branches injured trunks will be rejected. Remove rejected material from the site immediately.
12. Dimensions: Height and spread of specimen plant materials are specified on the drawings. The first figure following the name of the plant is the height; the second figure is the spread. All measurements shall be made with materials in a normal position without support of branches. Plants specified by container size only shall be equal in size to similar plants in local retail nurseries.
13. Inspection:
    a. Right of inspection for approval or rejection is reserved at the place of growth and/or on the project site at any time upon delivery or during the work. Plants shall be inspected for size, variety, condition, defects, or injury.
    b. Notify the Landscape Architect of the source of material no later than thirty (30) days after award of the contract.
    c. One inspection at the place of growth will be made. All plant materials requiring inspection by the Architect shall be assembled and available for such inspection.

PART 3 – EXECUTION

3.01 INSPECTION

A. Grades:

1. Rough grades have been established under work of another Section.
2. Grades are within one inch, plus or minus of required finish grades, except in those areas requiring topsoil.
3. Rough grades shall be approved by the Architect and/or Owner's Representative prior to commencing soil preparation work.

B. Weed and Debris Removal: All ground areas to be planted shall be cleaned of all weeds and debris prior to any soil preparation or grading work. Noxious weeds and grasses shall be removed by the roots wherever they are found at any stage of the work. Weeds and debris shall be disposed of off the site.

C. Contaminated Soil Removal:

1. Aggregate base rock in planting areas adjacent to paving shall be removed and replaced with soil.
2. Soil contaminated by cement, paint, plaster or other construction debris shall be removed and replaced with soil.
3. Furnish and install replacement soil at no additional cost to the Owner.
4. Obtain the Landscape Architect's approval of replacement soil prior to installing.
5. Dispose of removed soil off the project site.

D. Moisture Content: Soil shall not be worked when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in the air or that clods will not break readily. Water shall be applied, if necessary, to bring soil to an optimum moisture content for tilling and planting.

E. Topsoil Placement:

1. Subgrade scarification:
   a. Scarification of subgrades in planting areas shall be done after completion of construction grading and after areas are free of heavy traffic associated with the construction of concrete pavements.
   b. All planting areas shall be ripped and scarified to a depth of twelve inches prior to placement of topsoil.
2. Prior to excavating for plant pits and beds, the area shall conform to the lines and grades shown on the Drawings, and the location of any underground utilities shall be verified by the Contractor. Damage to utility lines shall be repaired at the Contractor's expense.
3. Rocks and other obstructions shall be removed to a depth necessary to permit proper planting according to Drawings and Specifications. If underground utilities, construction or solid rock ledges are encountered, other locations may be selected by the Architect.

3.02 FINISHED GRADING

A. When weeding, soil preparation and soil conditioning have been completed and soil has been thoroughly water settled, all planting areas shall be smooth graded, ready for placement of plant materials.

B. Grading shall be done when soil is at optimum moisture content for working.

C. Grades:

1. The Contractor shall make himself familiar with site grading and do finished grading in conformance with said plans and as herein specified. Grading shall be approved by Lanndscape Architect and/or City Construction Services prior to planting,
2. Finished grades shown on site grading plans are given in feet and decimal fractions of feet. Slope uniformly between given spot elevations. Planting areas shall be true to grade within one inch (1") when tested in any direction with a ten foot (10') straightedge.
3. Grades not otherwise indicated shall be uniform levels or slopes between points where elevations are given or between points established by walks, paving, curbs, or catch basins. Finish grades shall be smooth, even and on a uniform plane with no abrupt changes of surface. Minor adjustments of finish grades shall be made at the direction of the Landscape Architect, if required.
4. All grades shall provide for natural run off of water without low spots or pockets. Flow line grades shall be accurately set and shall be not less than two percent (2%) gradient wherever possible.
5. Rake all areas to remove rocks one inch or larger (1"<) in size, sticks and debris. Drag to a smooth, even surface.
6. Planting Areas: Finished grades shall be one–and–a–half inches (1–1/2") below top of adjacent pavement, headers, or curbs, unless otherwise indicated on the drawings.
7. Top and toes of all slopes shall be rounded to produce a gradual and natural appearing transition between relatively level areas and slopes.

3.03 SOIL PREPARATION

A. Amendment Application: The amendment applications shall be as required by the Soil Fertility Test. Preliminary amendment application rates for all lawn and planting areas are as follows:

1. Nitrogen stabilized soil amendment at an application rate of three cubic yards per one thousand square feet (3 c.y./1,000 s.f.)
2. Commercial fertilizer (6–20–20) at an application rate of fourteen pounds per one thousand square feet (14 lbs./1,000 s.f.)
3. Sulfate–Sulfur at an application rate of one pound Ammonium Sulfate per one thousand square feet (1lb./1,000 s.f.)

B. Soil Rototilling: The soil and amendments of the planting areas shall be rototilled to an eight inch (8") depth. The planting areas shall be finish grade. At this stage, the entire eight inches (8") of prepared planting soil shall be friable, or loamy character, reasonable free of rocks, sticks, and have a smooth, even texture.

C. Planting Holes:

1. Planting Holes:
   a. Locate planting holes per planting Drawings. Locations for holes shall be staked on the site and the Architect's approval thereof shall be obtained prior to excavation of planting holes.
   b. Excavate square holes to the sizes and depths indicated on the drawings.
   c. Dispose of the excavated soil off the site at no cost to the Owner.
   d. Scarify the sides and bottom of the holes.
2. Backfilling:
   a. Backfill the planting holes with the special backfill mix herein specified.
   b. Water settle backfill thoroughly or compact by other approved method prior to planting so plants do not settle.
3. Special Backfill Mix for Planting Holes:
   a. Materials
      (1) seventy–five percent (75%) native soil.
      (2) twenty–five percent (25%) nitrolized redwood sawdust.
      (3) fertilizer tablets.

* * * END OF SECTION * * *

REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
Signature
Date
STATE OF CALIFORNIA

REVISIONS	BY

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SPECIFICATIONS

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date	6–20–06
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b. Mixing:

(1) Prepare the mix in stockpiles on site, do not mix at each individual planting hole.
(2) Mix thoroughly, leaving no layers of soil amendments or clods of soil.
(3) Obtain Architect's approval prior to backfilling.

4. Fertilizer Tablets: Place tablets in the backfilled planting holes per manufacturer's printed instructions, eight inches (8") below finish grade.
   a. Twenty-four inch box containers: eight (8) tablets.
   b. Fifteen (15) gallon containers: six (6) tablets.
   c. Five (5) gallon containers: three (3) tablets.
   d. One (1) gallon containers: two (2) tablets.

3.04 PLANTING

A. General:
1. Do not install plant materials until all construction work has been completed and sprinkler systems have been installed and tested. Planting areas shall have been graded and prepared as herein specified and shall have been approved by the Architect.
2. Do not plant during unfavorable weather.
3. Soil shall be at an optimum moisture content for planting. Do not plant in dry soil or muddy soil.

B. Weed Control: Apply a pre-emergence herbicide as approved for use in the State of California to all planting and mulched areas in accordance with manufacturer's recommended rates. Any plant materials showing loss of vigor or health owing to improper application of the herbicide shall be replaced at no cost to the Owner.

C. Container Plants:
1. Do not lift or handle container plants by tops, stems or trunks at any time.
2. All plants shall be set so that, when settled, the natural grade in the container is two (2) inches above finished grade of other planting beds.
3. Fertilizer Tablets: Refer to paragraph 3.03, C.4 hereinbefore.
4. All plants shall be planted immediately after the containers are cut, and containers shall be regularly removed from the site so as to not present a hazard to persons using the site.
5. Watering Basins: Form circular earth basins centered on the stem of each plant. The rim of the basin shall be four inches (4") above the grade at the stem.
6. Upon completion of all planting operations, and again just prior to final inspection, all soil between plants shall be lightly cultivated and neatly raked. Basins shall be left around plants, unless otherwise specified or directed by the Architect.
7. During the preliminary inspection/walkthru. the Landscape Architect reserves the right to inspect the rootballs of up to five (5) each of all trees, shrubs, and groundcovers for conformance with the planting procedures noted in the details and specifications. This may require the Contractor to upraise these plants for inspection.

D. Tree Staking and Augured Holes
1. Scope: Double stake all trees.
2. Installation:
   a. Double stakes shall be at right angles to the prevailing winds.
   b. Set stakes plumb.
   c. Securely nail elastic or canvas straps to stakes and brace.
   d. Set up a sample stake and ties and obtain Architect's approval thereof prior to installing tree stakes and ties.
   e. Provide 10' augured holes, as required for percolation. As directed by City Construction Services, Landscape Architect, or Owner's Representative, the Contractor shall dig tree pocket and fill with 6" water and observe percolation. If water does not percolate at least 1" per hour, the augured holes shall be installed.

E. Groundcover Materials:
1. Install plants at spacings indicated on drawings.
2. Plant in staggered rows, evenly spaced, where applicable.
3. Dig holes large enough to allow for spreading of roots. Place plants so root system lies free without doubling.
4. Firm soil around roots to eliminate air pockets.
5. Broadcast controlled-release fertilizer over the entire planting area at a rate of twenty pounds per one thousand square feet (20 lbs./1,000 s.f.) of area.
6. Water thoroughly after planting, taking care not to cover crowns of plants with wet silt.

F. Mulching:
1. Bid price shall also include the application of a pre-emergent weed control. "Treflan" in all areas prior to bark placement. Apply pre-emergent per manufacturer's directions.
2. Install bark mulch over planting area as indicated on drawings.
3. Mulch shall be three inches (3") deep; taper down flush with adjacent paving, curbs, or headers.
4. Where watering basins are required, fill basin with three inch (3") depth of mulch.

3.05 GENERAL CLEAN UP

A. Remove all cans, surplus materials, and other debris from site. Neatly dress and finish all planting areas. Flush walks, paved areas, and the like clean to the satisfaction of the Landscape Architect.

B. Rinse foliage of all plant materials within the construction area as often as necessary to keep the foliage free from dust generated by this Work.

3.06 MAINTENANCE

A. Establishing Maintenance Period:
1. As soon as all planting is completed, request that a planting review and a preliminary inspection to determine the condition of the planting be held by the Architect.
2. Upon approval of the work by the Architect, the ninety (90) day maintenance period shall begin.

B. Maintenance of New Planting:
1. Continuously maintain all plantings in areas included in the contract from the beginning of contract work, during the progress of work, and for a period of 90 days after completion of all work until final acceptance of all contract work by the Landscape Architect.
2. Scope:
   a. New plantings.
   b. Existing planting within the construction area.
   c. Continuous operations of watering, weeding, cultivating, trimming, edging, rolling, fertilizing, spraying, insect, pest, fungus and rodent control, and any other operations to assure good normal growth.
3. Fertilizing: In addition to fertilizing of trees, shrubs, and groundcover herein specified, furnish and apply any additional fertilizers necessary to maintain plantings in a healthy, green, vigorous growing conditions during the maintenance period.
   a. Apply commercial fertilizer at an application rate of fifteen pounds per one thousand square feet (15 lbs./1,000 s.f.) of area thirty (30) days after planting and cultivate into soil. Cultivate entire surface of planting areas.
4. Weeding, Cultivating, and Clean Up: Planted areas shall be kept neat and free from debris at all times and shall be cultivated and weeded at not more than ten (10) day intervals.
5. Insect, Pest, and Disease Control:
   a. Insects and diseases shall be controlled by use of approved insecticides and fungicides.
   b. Moles, gophers and other rodents shall be controlled by traps, approved pellets inserted by probe guns, or other approved means.
   c. Spray with Spotrete Turf Fungicide and Animal Repellent or provide Repellex Systemic Tablets (14-2-2) to all shrub and groundcover plants as required or necessary for protection against rabbits and deer.
6. Pruning:
   a. Prune plant material at the direction of the Architect.
   b. Shape branching structure and thin out foliage.
   c. Do not remove lower branches from low branching or multi-trunk trees unless directed to do so by the Landscape Architect.
7. Replacements: Immediately replace any plant materials that die or are damaged. Replacements shall be made to the specifications as required for original plantings. Any plant material that has died after the maintenance period has begun will be subject to an additional 90-day maintenance period. Additional maintenance period may extend beyond the final acceptance of the project.
8. Condition of Plantings at End of Maintenance Period:
   a. All plant materials shall be live, healthy, undamaged and free from infestations.
   b. Shrub and groundcover planting areas shall free of all weeds (broadleaf and grass weeds).
   c. Lawn areas are to be established and shown to be weed-free and mowed.
   d. All edging or lawn areas shall be performed with an edger. Weed eater are not permitted for edging.
9. Check sprinkler system at each watering, adjust and clean heads immediately, adjust timing of sprinkler controller to prevent flooding.
10. Maintain constant moisture depth in soil to insure vigorous growth.

3.07 FINAL ACCEPTANCE

Final inspection for approval and acceptance shall be made at the conclusion of the maintenance period, provided that on such date all other project improvements and corrective work has been completed.

* * * END OF SECTION * * *

SECTION 02910
HYDROMULCH SEEDING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. The requirements of the General Conditions, Supplementary Conditions, and Division 1, General Requirements, apply to work of this Section.

1.02 SCOPE

A. Work Included in This Section: Furnish all labor, tools, equipment, material, and transportation and perform all operations necessary and incidental to proper execution and completion of all site preparation in accordance with the drawings and specifications. The work includes, but is not limited to, the following:
1. Weed abatement.
2. Removal of debris and material.
3. On-site soil preparation.
4. Installation of required seed, mulch, and fertilizer mix for channel banks, channel bottom, and neighborhood pocket park areas.
5. Protection and establishment/maintenance as specified.
6. All work of every description mentioned in the Specifications and/or amendments thereto, and all other labor and materials reasonably incidental to the satisfactory completion of the work including clean up of the site.

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Planting - Section 02900

1.04 PROTECTION

A. The Contractor shall provide necessary safeguards and shall exercise caution against injury or defacement of any site improvements and operations, and shall repair or replace any such damage at his own expense. No trucks or vehicles of any kind shall be allowed to pass over sidewalks, curbs, structures, etc. unless adequate protection is provided.

1.05 ENVIRONMENTAL CONDITIONS

A. Hydroseeding shall be done only during periods which are normal for such work as determined by the season, weather conditions, and accepted practices.

1.06 JOB CONDITIONS

A. Verification of Existing Conditions:
1. Visit to the site to determine existing conditions, including access to the site and the nature and extent of existing improvements upon adjacent public and private property, nature of materials to be encountered and other factors that may affect the work of this Section.
2. Additional compensation resulting from the alleged ignorance of local conditions, and their effect upon the cost of the work, will not be approved.
3. The replacement of any material or other necessary materials required to complete all landscape work, which have been lost because of theft, vandals, etc. is the responsibility of the Contractor.

1.07 WEED ABATEMENT

A. All areas to be hydroseeded shall have weed abatement operations performed on them prior to hydroseeding. Weed abatement operations shall include:
1. Contractor to spray all hydroseed mulch areas and exposed weeds with a contact herbicide containing Glysophate, such as 'Round-up'. Apply in strict conformance with manufacturer's instructions. Application to be made by licensed pest control applicator. After spraying, do not water for at least seven (7) days. Remove dead weeds from site.
2. Install irrigation system as per Section 02810, and prepare soil as per Section 02900, 3.03.
3. Contractor shall operate the automatic irrigation system for a period of fourteen (14) calendar days. Irrigation applications shall be made frequently during daylight hours to insure even moisture retention in the top two (2") of the soil profile to encourage weed germination.
4. Contractor to spray all exposed weeds with 'Round-up' (contact herbicide); apply in strict conformance with manufacturer's instructions. After spraying, do not water for at least forty-eight (48) hours. Remove exposed weeds from site.
5. Water for seven additional calendar days after removal of weeds. Wait forty-eight (48) hours and apply 'Round-up' on any exposed weeds. Wait forty-eight hours, minimum, and remove weeds from site.
6. If any evidence of weed germination exists after two (2) applications, Contractor may be directed to perform step 4 one additional time.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Channel Bank Hydromulch Mix: Channel Banks Hydromulch Mix shall be applied at the rate of six thousand one hundred forty-two point seven pounds per acre. (6,142.7 lbs./acre). An acre 'batch' of hydromulch shall be a mixture of seed, fertilizer, straw mulch, wood hydromulch fiber, and hydromulch tackifier in the following proportions:
1. Seed Mix Proportion by Weight:

.2 pounds/acre	Artemisia douglasiana	Mugwort	
6 pounds/acre	Vulpia microstachys	Small Fescue	
6 pounds/acre	Hordeum brachyantherum	Meadow Barley	
5 pounds/acre	Leymus triticoides Yolo	Yolo Creeping Wildrye	
5 pounds/acre	Nassella cernua	Nodding Stipa	
4 pounds/acre	Poa secunda	Pine Bluegrass	
10 pounds/acre	Festuca idahoensis	Idaho Fescue	
4 pounds/acre	Lotus scoparius	Deerweed	
1.5 pounds/acre	Lupinus microcarpus	Golden Lupine	
1 pound/acre	Eschscholzia californica	California poppy	42.7 pounds/acre

2. Fertilizer Biosol 7-2-3 — 1,000 pounds/acre
3. Straw Mulch: Wheat Straw — 4,000 pounds/acre
4. Hydromulch Fiber: Wood — 1,000 pounds/acre
5. Hydromulch Tackifier: Plantago — 100 pounds/acre

6,142.7 pounds/acre

B. Channel Bottom Hydromulch Mix: Channel Bottom Hydromulch Mix shall be applied at the rate of six thousand one hundred thirty point two pounds per acre. (6,130.2 lbs./acre). An acre 'batch' of hydromulch shall be a mixture of seed, fertilizer, straw mulch, wood hydromulch fiber, and hydromulch tackifier in the following proportions:
1. Seed Mix Proportion by Weight:

4 pounds/acre	Deschampsia cespitosa	Tufted Hairgrass	
8.9 pounds/acre	Hordeum brachyantherum	Meadow Barley	
6 pounds/acre	Vulpia microstachys	Small Fescue	
4 pounds/acre	Leymus triticoides Yolo	Yolo Creeping Wildrye	
1.5 pounds/acre	Scirpus californicus	California Bulrush	
2.5 pounds/acre	Scirpus acutus	Hard-stem Bulrush	
.5 pounds/acre	Juncus bufonius	Toad Rush	
.5 pounds/acre	Typha latifolia	Broad-leaved Cattail	
1 pounds/acre	Eleocharis macrostachya	Common Spikerush	
1 pound/acre	Achillea millefolium	White Yarrow	
.3 pounds/acre	Cyperus eragrostism	Nutsedge	30.2 pounds/acre

2. Fertilizer Biosol 7-2-3 — 1,000 pounds/acre
3. Straw Mulch: Wheat Straw — 4,000 pounds/acre
4. Hydromulch Fiber: Wood — 1,000 pounds/acre
5. Hydromulch Tackifier: Plantago — 100 pounds/acre

6,130.2 pounds/acre

C. Neighborhood Pocket Park Hydromulch Mix: Neighborhood Pocket Park Hydromulch Mix shall be applied at the rate of six thousand one hundred thirty-one pounds per acre. (6,131 lbs./acre). An acre 'batch' of hydromulch shall be a mixture of seed, fertilizer, straw mulch, wood hydromulch fiber, and hydromulch tackifier in the following proportions:
1. Seed Mix Proportion by Weight:

5 pounds/acre	Trifolium hirtum	Rose Clover
2 pounds/acre	Lupinus succulentus	Arroyo Lupine
2 pounds/acre	Eschscholzia californica	California Poppy
3 pounds/acre	ELymus glaucus	Blue Wild Rye
2 pounds/acre	Vulpis myuros	Zorro Fescue
4 pounds/acre	Bromus carinatus	California Brome
3 pounds/acre	Leymus triticoides	Creeping Wild Rye
10 pounds/acre	Dryland Wildflower Mix: 5% Centaurea cyanus, dwarf Blue (Dwarf Bachelor Button), 7% Cheiranthus allionii (Wallflower), 6% Clarkia amoena semi-dwarf (Godetia), 6% Collinsia heterophylla (Chinese Houses), 1% Dimorphotheca pluvialis, White (White African Daisy), 6% Dimorphotheca aurantiaca/sinuata (African Daisy Mix), 4% Eschscholzia californica (California Poppy), 7% Lupinus succulentus (Arroyo Lupine), 4% Gilia tricolor (Bird's Eyes), 1% Layia platyglossa (Tidy Tips), 1% Linaria maroccana (Fairy Bouquet), 10% Linum lewisii (Blue Flax), 6% Nemophila maculata (Five Spot), 8% Nemophila menziesii (Baby Blue Eyes), 1% Camissonia cheiranthifolia, 6% Phacelia campanularia, (California Blue Bells), 4% Silene armeria (Catchfly), 1% Verbena tenuisecta (Moss Verbena), 4% Lobularia maritina (Carpet of Snow), 3% Rudbeckia hirta (Black Eyed Susan), 4% Rudbeckia hirta gloriosa (Gloriosa Daisy), 2% Clarkia elegans/unguiculata (Mountain Garland), 3% Gaillardia pulchella (Indian Blanket)	

		31 pounds/acre
2.	Fertilizer Biosol 7-2-3	1,000 pounds/acre
3.	Straw Mulch: Wheat Straw	4,000 pounds/acre
4.	Hydromulch Fiber: Wood	1,000 pounds/acre
5.	Hydromulch Tackifier: Plantago	100 pounds/acre
		6,131 pounds/acre

D. Hydromulch Seed Mixture: Shall be at least ninety percent (90%) pure, noxious, pest and weed free, with a minimum of eighty percent (80%) germination, as available from Mark Seeding Services, Inc.; P.O. Box 156; Galt, California 95632; telephone number: 800/476.4937. All seed shall be recleaned Grade A, new crop seed, delivered in the original containers, unopened, and shall bear a guaranteed analysis and the dealer's label.

E. Fertilizer: Shall be a granular type mixed by a commercial fertilizer house with the following chemical analysis by weight: seven percent (7%) nitrogen, two percent (2%) phosphorus, and three percent (3%) potash (7-2-3) by Biosol or approved equal.

F. Hydromulch Tackifier: Shall be Plantago or approved equal.

G. Wood Hydromulch Fiber: The mulch shall be a green-colored, fibrous, wood cellulose containing no growth or germination inhibiting factors. It shall be manufactured in such a manner that after addition and agitation in slurry tanks with fertilizer, seed, water, straw mulch, and other approved additives, the fibers in the material will become uniformly suspended to form a homogeneous slurry; and then when hydraulically sprayed on the ground the material will form a blotter-like ground cover impregnated uniformly with seed; and which, after application, will allow the absorption of moisture and allow the rainfall to percolate to the underlying soil. Wood hydromulch fiber shall be certified to indicate that laboratory and field testing of the product has been accomplished and that it meets all of the foregoing requirements based on testing. Weight specifications of this material from suppliers and for all application, shall refer only to air-dry weight of the fiber material. Absolute air-dry weight is based on the normal standards of the Technical Association of the Pulp and Paper Industry for wood hydromulch fiber and is considered equivalent to fifteen percent (15%) moisture. Each package of the wood hydromulch fiber shall be marked by the manufacturer, Weyerhauser, to show the air-dry weight.

H. Water for Hydromulching: Shall be clean, potable, and added to the slurry mixture in sufficient amount to spread uniformly the required quantity of hydromulch solids (approximately 3,000 gallons per acre).

I. Hydromulching equipment used for application of the fertilizer, seed, and slurry of prepared wood pulp shall be of type as approved by Landscape Architect. This system shall have a built-in agitation system and operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry containing up to forty pounds (40 lbs.) of fiber plus combined total seven pounds (7 lbs.) fertilizer solids for each on hundred (100) gallons of water. The slurry distribution shall be large enough to prevent stoppage. This discharge line shall be equipped with a set of hydraulic spray nozzles which will provide a continuous non-fluctuating discharge and delivery of slurry in the prescribed quantities uniformly, without mosses, waste, or erosion. The slurry tank shall have a minimum capacity of one thousand (1,000) gallons and shall be mounted on a traveling unit which may be either self- propelled or drawn with a separate 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. The Landscape Architect may authorize equipment with smaller tank capacity provided that the equipment has the necessary agitation system and sufficient pump capacity to spray the slurry in a uniform coat.

PART 3 - EXECUTION

3.01 HYDROMULCH SEEDING

A. Preparation: The slurry preparation shall take place on site. The slurry preparation shall begin by adding water to the tank when the engine is in half throttle. When the water level has reached the height of the agitated shaft, good recirculation shall be established, and at this time the seed shall be added. Fertilizer shall then be added, followed by wood pulp. The wood pulp shall only be added to the mixture after the seed and 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 shall be added by the time the tank is two-thirds to three-fourths full. Spraying shall commence immediately when the tank is full.

B. Application: All areas to receive hydromulch shall be sprayed 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 as 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 sixty-one hundred forty-two point seven pounds per one acre (6,142.7 lbs./acre) for the Channel Banks, sixty-one hundred thirty point two pounds per acre (6,130.2 lbs./acre) for the Channel Bottom, and sixty-one hundred thirty-one pounds per acre (6,131 lbs./acre) for the Neighborhood Pocket Park.

C. Time Limit: Any slurry mixture which has not been applied to the slopes within four (4) hours after mixing will be rejected by the Landscape Architect, and shall be removed from the project at the Contractor's expense.

D. The Contractor shall be responsible for maintaining finish grades in all hydromulched areas, and for executing any fine grading necessary for surface drainage and uniformity, or incidental to all hydromulching operations.

E. Post treatment depends on temperature greater than ninety degrees Fahrenheit (90 F) as may be required.

F. Optimum seeding should occur between September 15 and October 15; summer seeding should include a fungicide application approximately ten (10) days after seeding.

G. Seed and/or hydroseeding is available from Mark Seeding Services, Inc. P.O. Box 156; Galt, California 95632. Telephone number: 800/476.4937.

3.02 MAINTENANCE

A. Establishment Period: The Contractor shall be responsible for the proper care of the seeded areas for a period of ninety (90) days after completion of work.

B. Acceptance: The final acceptance and/or the final walk thru may occur after ninety (90) days following the preliminary walk thru, when the channel banks, channel bottom, and neighborhood pocket park native grass/wildflower areas have one hundred percent (100%) establishment and germination.

* * * END OF SECTION * * *

* * * END OF SECTION * * *

REGISTERED LANDSCAPE ARCHITECT
CRAIG D. PARK
No. 1719
Exp. May 31, 2008
Signature
STATE OF CALIFORNIA

REVISIONS	BY

Craig Park
A s s o c i a t e s
Landscape Architects ★ Planners
2747 Riverside Boulevard
Sacramento, California 95818
916 / 444-1886
FAX 916 / 444-1886

SPECIFICATIONS

PASEO GREENBELT & WETLANDS RIPARIAN HABITAT MITIGATION AREA
LAGUNA RIDGE - DRAINAGE PARKWAY
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: REYNEN & BARDIS DEVELOPMENT, LLC

Date 6-20-06
Scale NONE
Drawn
Job
Sheet 20
SP-3
Of 22 Sheets

DOCUMENTS AND SETTINGS\DFTU3\MY DOCUMENTS\06115-3913\06115-3913.DWG, 4/24/2006 8:04:07 AM, ARCH EXPAND D (36.00 X 24.00 INCHES)

1 SPECIAL WALL CONDITIONS AND OPTIONS

NOTES:
1. POST TENSIONED ROD.
2. END OF WALL.
3. RODS AT 12" EITHER SIDE OF A CONTROL JOINT OR END OF WALL.
4. NOT USED.
5. NOT USED.
6. #4 REINFORCING WITH 6" HOOK INTO FOOTING BELOW. FILL WITH GROUT OR 8" HIGH LIFTS OF MORTAR.
6A. POST TENSIONED ROD SPACING PER SCHEDULE BUT NOT TO EXCEED 4'-8" ON EITHER SIDE OF THE CONTROL JOINT OR END OF WALL.
7. END OR CORNER OF WALL MAY START WITH #4 VERTICAL REBAR, GROUT SOLID THEN SPACE FIRST POST TENSION ROD PER SCHEDULE. REBAR MAY SUBSTITUTE FOR P.T. ROD AT CORNER OR END OF WALL.
8. NOT USED.
9. NOT USED.
10. NOT USED.
11. PROTO II WALL.
12. 16" MASONRY PIER WITH 4 #4 VERTICAL AND 1 #2 TIE AT TOP OF PIER.
13. 12" SQUARE MASONRY PIER WITH 1 #5 VERTICAL.
14. LINE OF FOOTING BELOW. FOOTING AT PROTO II WALL PER PLANS AND SCHEDULES. FOOTING AT PIER SHALL BE 12" THICK AND 4" WIDER ALL AROUND THE PIER.
15. RUN HORIZONTAL JOINT REINFORCING THROUGH PIER STOP AT FACE OF PIER AT CONTRACTOR'S OPTION.
16. ALL VERTICAL MASONRY PIER REINFORCING SHALL HAVE 6" HOOKS AT BOTTOM AND EXTEND A MINIMUM OF 8" INTO FOOTING.

NOTE:
- SEE 8" ROD VARIANCE SPEC AT NOTES NO. 5 AT BOTTOM OF WALL SCHEDULE. 8" VARIANCE APPLIES TO ALL RODS EXCEPT THOSE AT CONTROL JOINTS AND END OF WALL.
- AT CONTRACTORS OPTION, THE WALL EXPANSION JOINT MAY OCCUR AT THE FACE OF THE PIERS AS SPECIFIED IN GENERAL NOTE 14.

NO SCALE

GENERAL NOTES

1. THE PROTO–II WALL IS DESIGNED FOR WIND AND SEISMIC FORCES AS REQUIRED AND APPROVED BY THE LOCAL JURISDICTION. SEE SCHEDULES FOR EXPOSURE, WIND FORCES, POST TENSIONED ROD SPACING, FOOTING SIZES, ETC. CONTRACTOR IS RESPONSIBLE TO VERIFY REQUIREMENTS WITH BUILDING DEPARTMENT AND OWNER. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE APPROVED SITE PLAN SOILS REPORT AND/OR APPLICABLE CODE REQUIREMENTS.
2. THESE DESIGNS ARE NOT TO BE USED FOR RETAINING EARTH (LEVEL BACKFILL) ABOVE 1'–4" FOR 4" PROTO–II, 2'–0" FOR 6" PROTO–II, AND 2'–8" FOR 8" PROTO–II AS MEASURED FROM LOW SOIL TO HIGH SOIL. NO SURCHARGES WITHIN 5'–0" OF WALL ARE ALLOWED. SEE DETAIL 10.
3. FOOTINGS TO BE LEVEL. IF GROUND SLOPES THE FOOTING SHALL BE STEPPED. EACH STEP SHOULD PROPER HEIGHT TO FIT BLOCK TYPE USED. ALL EXCAVATIONS SHOULD BE CLEAN AND CONTAIN NO LOOSE EARTH OR FORGEIGN MATTER.
4. SOIL SHALL BE COMPACTED AND HAVE A MINIMUM BEARING CAPACITY OF 1,000 POUNDS PER SQUARE FOOT AND A LATERAL CAPACITY OF 200 POUNDS PER SQUARE FOOT PER FOOT OF DEPTH. CONTRACTOR TO VERIFY SOIL CONDITIONS PER SOILS REPORT.
5. SOIL SHALL BE WELL DRAINED FOR FOOTINGS AND FOUNDATIONS, USE CONCRETE WITH A MIN. STRENGTH OF 2,500 PSI – TYPE II CEMENT (TYPE V WHERE REQUIRED BY OWNER, SOILS ENGINEER OR JURISDICTION). CONCRETE SHALL BE A MIN. OF 48 HOURS OLD PRIOR TO FINAL TENSIONING.
6. LAP HORIZ. FTG. REBAR 40 BAR DIA.; (LAP = 20" FOR #4 REBAR 25" FOR #5 REBAR).
7. CONCRETE MASONRY UNITS SHALL COMPLY WITH ASTM C–90 AND BE 2,000 PSI MIN. (F'M DESIGN CRITERIA FOR BLOCK IS BASED ON 1500 PSI). BLOCK SHALL BE A MIN OF 7 DAYS OLD PRIOR TO ROD TENSIONING. STANDARD HEAD AND BED JOINT BLOCKS WITH MORTAR MAY BE USED OR INTERLOCKING BLOCKS MAY BE USED.
8. MORTAR SHALL BE TYPE S, 2000 PSI MIN. MORTAR MAY BE USED AS GROUT IN 8" HIGH LIFTS. MORTAR MUST BE A MIN. OF 4 HOURS OLD PRIOR TO INITIAL TENSIONING AND 24 HOURS OLD PRIOR TO FINAL TENSIONING.
9. FIRST MASONRY COURSE MAY BE SET IN FRESH CONCRETE FOOTING. HEAD JOINTS MAY BE OMITTED IN FIRST COURSE FOR WEEP HOLES.
10. REINFORCING REBAR SHALL CONFORM TO ASTM A615; Fy = 40,000 PSI.
11. PROTO–II HARDWARE IS DEFINED AS: TENSION RODS, BEARING PLATES, COUPLERS, NUTS, ALL THREADS, DIRECT TENSION INDICATORS (A DIRECT TENSION INDICATOR (DTI) IS A COMPRESSIBLE WASHER) AND PLASTIC SADDLES. ALL OF THIS HARDWARE SHALL BE SUPPLIED BY ONLY AN APPROVED PROTO–II LICENSEE TO THE CERTIFIED INSTALLER. POST TENSION RODS SHALL BE 7/16" DIAMETER WITH 1/2" ROLL THREADS CONFORMING TO ASTM A615 (FY = 60000 PSI) AND HAVE STEEL CHEMISTRY SO THAT BENDING AND THREADING CAN BE ACCOMPLISHED WITHOUT DAMAGE TO THE POST TENSION ROD. AREA OF POST TENSION ROD = .1503 SQUARE INCHES. BEARING PLATES ARE 1/4" THICK (ASTM A36 STEEL) SEE DETAIL 5 FOR WIDTHS. 1/2" COUPLERS PER ASTM A36 AND THE COUPLER MUST FULLY ENGAGE THE UPPER AND LOWER ROD, FULLY ENGAGED AS DEFINED AS 1/2" MIN. INTO COUPLER. 1/2" NUTS ARE TO BE GRADE 8, PER ASTM A325. 1/2" ALL THREADS PER ASTM A307, GRADE 60. DIRECT TENSION INDICATOR (DTI – COMPRESSIBLE WASHER) IS PER ASTM F929 TESTING PROCEDURES. PLASTIC REBAR SADDLES ARE NON–STRUCTURAL.
12. HORIZONTAL JOINT REINFORCING SHALL BE 9 GAGE DIAMETER WIRE AND PLACED PER DETAIL 8 AND CONFORM TO ASTM A82 LADDER TYPE, 9 GAGE DIAMETER. LAP JOINT REINFORCING ONE FULL CROSS SQUARE (6" MINIMUM LAP).
13. IN LIEU OF FULL HEIGHT RODS, CONTRACTOR MAY USE SHORTER RODS, 1/2" COUPLERS AND STRAIGHT RODS THREADED BOTH ENDS FOR ADDITIONAL LIFTS. MIN. OF 3" "L" HOOK, OR "J" HOOK AT END OF TENSION ROD.
14. VERTICAL CONTROL JOINTS TO BE PLACED AT MAX. 36' O.C. IN ALL NON–STUCCOED WALLS AND 20' ON CENTER IN STUCCOED WALLS WITH CLEAN VERTICAL BREAK OF ALL MATERIALS. SEE DETAIL 1 FOR ROD SPACING AT CONTROL JOINTS AND WALL ENDS.
15. ALL STEEL THREADS, PLATES AND NUTS SHALL BE APPROPRIATELY LUBRICATED AND FREE OF RUST TO INSURE PROPER TENSIONING. NO COUPLERS MAY OCCUR DIRECTLY BELOW AND IN CONTACT WITH THE BEARING PLATE.
16. TENSION RODS MAY BE STABBED INTO WET CONCRETE OR TIED IN PLACE AT CONTRACTOR OPTION; SEE DETAIL 6, NOTE NO. 3. AT CONTRACTOR OPTION, VERTICAL REBAR MAY BE STABBED DOWN INTO THE DIP, PIER OR CONTINUOUS TRENCH FOOTING AND EXTENDED +/–8" INTO FIRST COURSE OF BLOCK. SEE DETAILS 3 AND 4.
17. A PROTO–II DTI (COMPRESSIBLE WASHER) SHALL BE INSTALLED AT EVERY TENSION ROD BETWEEN THE BEARING PLATE AND NUT W/ THE DTI "TABS" FACING UP AGAINST THE BOTTOM OF THE NUT. THE SPECIAL DEPUTY INSPECTION REQUIRED AT TIME OF FINAL TENSIONING BY A PROTO–II APPROVED INSPECTOR SHALL VERIFY FINAL TENSIONING TO 6,000 POUNDS BY 1 OF 2 METHODS; METHOD 1; VISUAL INSPECTION OF DIRECT TENSION INDICATOR (DTI), TABS FACING UP AND COLLAPSED AGAINST NUT W/ NO LIGHT LEAKAGE BETWEEN THE PROTO–II DTI AND BOTTOM OF NUT: METHOD 2: USE OF A CALIBRATED TORQUE WRENCH TORQUED TO 55FT/LBS. (DTI MUST STILL BE PLACED WITH METHOD 2. NO VISUAL INSPECTION OF DTI REQUIRED WHEN USING METHOD 2). INSPECTOR SHALL OBSERVE THE USE OF THREAD LUBRICANT, THE POSITION OF PLATE ON BLOCK, AND INTEGRITY OF MORTAR JOINTS. AND PROVIDE A SIGNED REPORT TO ALL APPROPRIATE PARTIES. MASONRY DESIGN IS BASED ON THIS SPECIAL INSPECTION.
18. DESIGNS ILLUSTRATED ON THIS PRODUCT DATA SHEET ARE FOR PROTO–II WALLS AND PROTO–II
* RETAINER WALLS UP TO A COMBINED HEIGHT OF 9'–4". ADDITIONAL SCHEDULES ARE AVAILABLE FOR PROTO–II WALLS UP TO 13'–4" HIGH AND HIGHER "HYBRID" PROTO–II WALLS.

PROTO II FENCE WALL SCHEDULE – CALIFORNIA

EXPLANATION OF WIND LOAD DESIGNATIONS:

WIND LOADS ARE CALCULATED AS FOLLOWS:
$p = Ce \times Cq \times qs \times I$
p = WIND FORCE IN POUNDS PER SQUARE FOOT (PSF)
Ce = EXPOSURE FACTOR, SEE U.B.C. TABLE 16G
Cq = PRESSURE COEFFICIENT FOR STRUCTURE – SEE U.B.C./ TABLE 16H (FOR WALL ELEMENTS PRIMARY SYSTEM METHOD 2 Cq = 1.3)
qs = WIND STAGNATION PRESSURE, SEE U.B.C. TABLE 16F
I = IMPORTANCE FACTOR PER U.B.C. TABLE 16k (FOR FENCES I = 1.0)
EXAMPLE: EXP. C @ 70 MPH REFERS TO EXPOSURE C WITH qs AT 70 MPH
$p = 1.06 \times 1.3 \times (.75 \times 12.6) \times 1.0 = 13.8$ PSF
(SEE UBC SECTION 1622)
ABOVE 12'–0" $p = 1.06 \times 1.3 \times 12.6 \times 1.0 = 17.4$ PSF

WIND VERSUS SEISMIC LOADING:

1. WIND LOADS GOVERN OVER SEISMIC IN ALL SEISMIC ZONE 1,2, AND 3 LOCATIONS.
2. FOR SEISMIC ZONE 4, THE SCHEDULES BELOW HAVE BEEN MODIFIED FOR SEISMIC FORCES

PER 1997 UBC AND 2001 CBC

WIND FORCE	WALL HEIGHT	4" PROTO II POST TENSION ROD SPACING ON CENTER	6" PROTO II POST TENSION ROD SPACING ON CENTER	8" PROTO II POST TENSION ROD SPACING ON CENTER	DIP FOOTING ON CENTER SPACING, SEE DETAIL 4 FOR DIP FOOTING PROFILE, SEE DETAIL 3 FOR SECTION	CONTINUOUS 12" WIDE TRENCH FOOTING. SEE DETAIL 3 FOR SECTION.	
8.8 PSF 75 MPH EXP B	3'–4"	8'–0"	8'–0"	8'–0"	16'–0"	12" x 31"	
	4'–0"	8'–0"	8'–0"	8'–0"	16'–0"	12" x 32"	
	4'–8"	8'–0"	8'–0"	8'–0"	16'–0"	12" x 34"	
	5'–4"	8'–0"	8'–0"	8'–0"	13'–0"	12" x 35"	
	6'–0"	8'–0"	8'–0"	8'–0"	10'–0"	12" x 36"	
	6'–8"	4'–8"	8'–0"	8'–0"	6'–8"	12" x 40"	
	7'–4"	–	6'–8"	8'–0"	5'–6"	12" x 41"	
	8'–0"	–	5'–4"	7'–4"	4'–8"	12" x 42"	
	8'–8"	–	4'–8"	6'–0"	4'–0"	12" x 44"	
*	9'–4"	–	4'–0"	5'–4"	3'–6"	12" x 45"	

SOIL REPORT BY: KLEINFELDER
PROJECT NO. 51625/SAC5R371
DATED: JUNE 2 , 2005
ACTIVE PRESSURE = 40 PCF
PASSIVE PRESSURE = 200 PCF
BEARING CAPACITY = 2000 PSF
FRICTION COEFFICIENT = 0.30

9 5'–0" TO DAYLIGHT DETAIL FOR FOOTINGS

NOTES:
1. FENCE WALL – DETAIL NOT SHOWN FOR CLARITY.
2. FINISHED GRADE.
3. NO SLOPING ADJACENT GRADE ALLOWED.
4. FACE OF FOOTING TO TOP OF SLOPE.
5. BOTTOM OF SETTING PAD.
6. SEE SCHEDULE FOR WALLS UP TO 6'–0" HIGH.
7. SEE SCHEDULE FOR WALLS ABOVE 6'–0" HIGH.

NOTE:
THIS DETAIL DESCRIBES THE MINIMUM DISTANCE REQUIREMENTS FOR THE LOWEST FOOTING EDGE TO FINISHED GRADE.

(6)

SCHEDULE FOR WALLS UP TO 6'–0"		
FACE OF FOOTING TO TOP OF SLOPE.	MIN. DEPTH OF DIP OR TRENCH FOOTING	OR MINIMUM DEPTH OF 13" DIA PIER
12" OR MORE	2'–4"	3'–6"
6" TO 11"	2'–7"	3'–10"
3" TO 5"	2'–10"	4'–0"

(7)

SCHEDULE FOR WALLS ABOVE 6'–0" UP TO 9'–4"		
FACE OF FOOTING TO TOP OF SLOPE.	ADDED DEPTH OF DIP OR TRENCH FOOTING	OR ADDED DEPTH OF 13" DIA PIER
36" OR MORE	0"	0"
30"	6"	6"
24"	9"	9"
12"	15"	15"
6"	18"	18"
3"	20"	20"

NO SCALE

7 PROTO II WALL CONNECTION TO TOP OF CONVENTIONAL MASONRY RETAINING WALL

NOTES:
1. PROTO II FENCE WALL PER PRODUCT DATA SHEET.
   A. PROTO II TENSION ROD SHALL BE 7/16" DIA STRAIGHT, THREADED BOTH ENDS AND SHALL HAVE MIN. 12" EMBED INTO MASONRY RETAINING WALL WITH PLATE WASHER.
2. SOLID GROUTED RETAINING WALL – DESIGNED BY OTHERS. INSTALLER TO VERIFY RETAINING WALL DESIGNED BY OTHERS WILL SUPPORT THE PROTO II FENCE WALL ABOVE.
3. FINISHED GRADE.
4. 2–#3 MIN. IN BOND BEAM – LAP 20" WHERE OCCURS.
5. BACKFILL SHALL BE NON–EXPANSIVE SOILS. SEE SOILS REPORT.
6. COUPLER IF PARTIAL HEIGHT ROD IS USED IN LIEU OF FULL HEIGHT ROD.
7. 1/4"x1"x2" EMBEDMENT PLATE WITH 1/2" NUT ABOVE PLATE AND 1/2" COUPLER BELOW PLATE (OR (2) 1/2" NUTS).

NOTE:
PROTO II FENCE WALL CAN BE PLACED AT ANY LOCATION ON THE TOP OF THE RETAINING WALL (FLUSH OR CENTERED) BUT THE POST TENSIONED ROD SHALL AT ALL TIMES BE PLACED BETWEEN THE 2 REINFORCING BARS AT THE TOP OF THE RETAINING WALL.

NO SCALE

4 DIP FOOTING PROFILE

NOTES:
1. PROTO II FENCE WALL.
2. 3" MORTAR COVER AROUND COUPLER AND/OR POST TENSIONED ROD FOR CORROSION PROTECTION.
3. 7/16" DIA FULL HEIGHT POST TENSIONED RODS WITH 3" HOOKS. ROLL THREADS AT TOP FOR NUT ATTACHMENT.
4. CONC. FTG. – NO COLD JOINTS PERMITTED.
5. TRENCH MAY BE OVER EXCAVATED AS SHOWN– FILL W/ COMPACTED FILL OR CONCRETE.
6. 13" DIA x 5'–0" DEEP CIRCULAR PIER FTG. MAY BE USED IN LIEU OF DIP FTG. SPACING AND SETTING PAD TO REMAIN THE SAME.
7. NO VOIDS OR HONEYCOMBING OF CONC. AT JUNCTION OF POST TENSION ROD AND REINFORCING BARS ALLOWED. PROVIDE CONSOLIDATION OF CONCRETE VIA VIBRATION, RODDING OR OTHER APPROPRIATE MEANS.
8. VERTICAL FOOTING REINFORCING AT WALLS OVER 6'–0" HIGH USE #4 x 6" 24" IN CENTER OF DIP OR PIER. STRAIGHT "J" OR "L" OK
9. THIS DETAIL SHOWS THE POST TENSION ROD CENTERED IN THE DIP FTG. – HOWEVER THE POST TENSION ROD SPACING IS INDEPENDENT OF THE DIP FTG. AND THEY DO NOT NEED TO LINE UP.
10. NOT USED IN WALLS 6'–0" AND UNDER.
11. VERT. REINF. REQ'D WHEN USING CIRCULAR PIER DETAIL IN LIEU OF "DIP". SEE NOTE 6 BELOW WALL SCHEDULE.
12. A CONTRACTOR OPTION IS TO STAB THE #4 VERTICAL REBAR DOWN INTO THE DIP, PIER OR CONTINUOUS TRENCH FOOTING AND EXTEND IT +/–8" INTO THE FIRST COURSE OF BLOCK.
13. FOOTING REINFORCING PER DETAIL 3.

NO SCALE

5 TOP OF FENCE DETAIL

NOTES:
1. FILL CAP BLOCK WITH MORTAR. IMMEDIATELY "FLIP" ONTO ROD.
2. CAP BLOCK OF SUFFICIENT SIZE TO COVER PLATE AND ROD.
3. STEEL PLATE SIZES:
   A. 4" PROTO II: 1/4" x 3" x 6"
   B. 6" PROTO II: 1/4" x 4 1/2" x 6"
   C. 6" SLUMP PROTO II: 1/4" x 4" x 6"
   D. 8" PROTO II: 1/4" x 6 1/2" x 8"
   STEEL PLATES TO BE PLACED AT THE EDGE OF THE CELL SO THAT THE PLATE BEARS FULLY ON THREE SIDES EXCEPT AT 8" PROTO II WHERE THE STEEL PLATE SHOULD BEAR ON ALL FOUR SIDES.
4. CONTINUOUS HORIZONTAL JOINT REINFORCING PER NOTE #12.
5. CENTER WEB BELOW.

NO SCALE

2 DIRECT TENSION INDICATOR (DTI)

NOTES:
1. POST TENSION ROD.
2. NUT.
3. COMPRESSED DTI INDICATOR – NO LIGHT PASSES BETWEEN BOTTOM OF NUT AND DTI WHEN PROPERLY TENSIONED.
4. TOP PLATE.
5. COLLAPSIBLE TABS.
A. PROTO–II DTI TO BE USED AT EACH TENSION ROD, TABS FACING UP AGAINST BOTTOM OF 1/2" NUT AND TABS COLLAPSED TO ACHIEVE TENSION.
B. DTI IS ONE OF TWO APPROVED METHODS OF TENSIONING. OTHER OPTION OF TENSIONING IS TORQUE TO 55 FT/LBS USING A CALIBRATED TORQUE WRENCH DTI MUST STILL BE PLACED ON ROD IF USING TORQUE WRENCH METHOD. SEE GENERAL NOTE 17.
C. APPROVED SPECIAL DEPUTY INSPECTOR WILL PERFORM A VISUAL INSPECTION WHEN USING THE DTI METHOD TO CONFIRM THE DTI IS COLLAPSED WITH NO LIGHT LEAKS BETWEEN THE TABS AND BOTTOM OF NUT. IF USING TORQUED WRENCH METHOD, DEPUTY INSPECTOR WILL CONFIRM WALL IS TORQUED TO 55 FT/LBS AND VISUAL INSPECTION OF DTI IS NOT REQUIRED.
D. INSTALLER MUST HAVE SPECIAL DEPUTY INSPECTION PERFORMED BY ONE OF THESE TWO METHOD, BY AN APPROVED SPECIAL DEPUTY INSPECTOR. INSPECTOR TO PROVIDE A COMPLETED REPORT TO LISTED PARTIES.

NO SCALE

10 DETAIL AT SOIL RETAINAGE

NOTES:
1. GROUT SOLID ONLY AT POST–TENSION ROD CELLS BELOW GRADE.
2. LOW SOIL.
3. CONCRETE FOOTING.
4. HIGH SOIL.
5. PROTO II FENCE WALL.
6. * 1'–4" MAX. AT 4" PROTO II.
   * 2'–0" MAX. AT 6" PROTO II.
   * 2'–8" MAX AT 8" PROTO II.
7. A MODIFIED 6" THICK PROTO II WALL MAY BEGIN WITH A SOLID 8" HIGH GROUTED COURSE OF 8" BLOCK. THE SOIL RETAINAGE MAY THEN INCREASE TO 2'–8". FOR 8" WIDE WALLS USE A 10" WIDE FLANGE, 6" DEEP AT TOP OF FOOTING.

ROD SPACING AND FOOTING SELECTION NOTES

A. FOR ALL RETAINING CONDITION EXPOSURES B AND C WITH LESS THAN 6'–0" FENCE ABOVE ASSUME A MINIMUM FENCE HEIGHT "F" OF 6'–0" (H MIN = 6'+"R"+8"). (EXAMPLE: FOR 1'–4" RETAINING AND A 6'–0" HIGH FENCE WALL, H=6'–0"+1'–4"+8"= 8'–0" USE 8'–0' SCHEDULE DESIGN.)
B. FOR ALL EXP C CONDITIONS WITH 6'–0" WALL OR GREATER USE SCHEDULE WALL HEIGHT "H"+8".
C. FOR ALL EXPOSURE B CONDITIONS WITH A WALL HEIGHT 6'–0" OR GREATER USE SCHEDULE WALL HEIGHT = "H"+8"+8". (EXAMPLE: FOR 2'–0" RETAINING (R) AND 6'–0" FENCE (F), USE SCHEDULE WALL HEIGHT = "R"+"F"+8"+8" = 9'–4').
D. NO SURCHARGES, PARKING, STRUCTURES, ETC. WITHIN 5'–0" OF RETAINING WALLS.

NOTE: BACKFILL MATERIAL SHALL BE NON–EXPANSIVE. SEE SOILS REPORT FOR WALL DRAINAGE REQUIREMENTS.

NO SCALE

8 HORIZONTAL JOINT REINFORCING

NOTES:
1. TOP OF FOOTING.
2. PROTO II WALL – VERTICAL POST TENSIONED ROD NOT SHOWN FOR CLARITY.
3. 8" HIGH COURSES ARE SHOWN IN DETAIL. OTHER BLOCK SIZES MAY BE USED AS REQUIRED BY THE FENCE WALL DESIGN.

HORIZONTAL JOINT REINFORCING (REF. GENERAL NOTE #12).
1. HORIZONTAL JOINT REINFORCING SHALL BE PLACED AT THE MORTAR JOINTS #2 & #3 BELOW THE PLATE WASHER AND 2'–0" O.C. THEREAFTER UNTIL THE TOP OF FOOTING IS REACHED. (e.g. A NOMINAL 6'–0" HIGH WALL WOULD HAVE JOINT REINFORCING IN A TOTAL OF THREE COURSES).

NO SCALE

6 FOOTING ELEVATION AT POST TENSIONED ROD

NOTES:
1. PROTO II WALL.
2. 3" MORTAR COVER AROUND COUPLER AND/OR POST TENSIONED ROD FOR CORROSION PROTECTION.
3. 7/16" DIA FULL HEIGHT POST TENSIONED RODS WITH 3" HOOKS. ROLL THREADS AT TOP FOR NUT ATTACHMENT. NO VOIDS OR JUNCTION OF POST TENSION ROD AND REINF. BARS ALLOWED. PROVIDE CONSOLIDATION OF CONCRETE VIA VIBRATION, RODDING OR OTHER APPROPRIATE MEANS.
4. THICKEN FOOTING TO PROVIDE 3" MIN. COVER AS REQUIRED AROUND ANCHOR BOLT.
5. SEE SCHEDULE AND OTHER DETAILS.

NO SCALE

3 TYPICAL WALL SECTION AT DIP FOOTING AND TRENCH FOOTING

NOTES:
1. 4" NOMINAL (3 5/8" ACTUAL) OR 6" NOMINAL (5 5/8" ACTUAL) OR 8" NOMINAL (7 5/8" ACTUAL) MASONRY.
2. HORIZONTAL JOINT REINF. – SEE NOTE #14.
3. 2–#4 CONTINUOUS TOP AND BOTTOM AT 4" & 6" PROTO II.
   2–#5 CONTINUOUS TOP AND BOTTOM AT 8" PROTO II.
4. CONCRETE SETTING PAD. NO VOIDS OR HONEYCOMBING OF CONCRETE AT JUNCTION OF POST TENSION ROD AND REINF. BARS ALLOWED. PROVIDE CONSOLIDATION OF CONCRETE VIA VIBRATION, RODDING OR OTHER APPROPRIATE MEANS.
5. DASHED LINE INDICATES LINE OF DIP FOOTING OR LINE OF CONT. TRENCH FOOTING.
6. DEPTH OF CONTINUOUS TRENCH FOOTING.
7. NOT USED.
8. 3" MORTAR COVER AROUND COUPLER AND/OR POST TENSIONED ROD FOR CORROSION PROTECTION AT FIRST COURSE.
9. VERTICAL REINFORCING AT TRENCH, AND DIP FOOTINGS FOR WALLS OVER 6'–0" HIGH. USE #4 x AT THE 6" CENTER AS REQUIRED OF STRAIGHT "J" OR "L" OK EACH DIP FOOTING AT DIP FOOTING DESIGN. REBAR SPACING IN TRENCH FOOTING FOR WALLS 6'–8" TO 8'–0" SHALL MATCH SPACING OF DIP FOOTINGS. ABOVE 8'–0" AND WHERE DIP FOOTING SPACING NOT AVAILABLE, SPACE VERTS AT 24" O.C. MAX.
10. A CONTRACTOR OPTION IS TO STAB THE #4 VERTICAL REBAR DOWN INTO THE DIP, PIER OR CONTINUOUS TRENCH FOOTING AND EXTEND IT +/–8" INTO THE FIRST COURSE OF BLOCK.
11. 5" MIN. EMBED FOR PT ROD.

NO SCALE

11 PROTO II WALL W/4'–0" TUBULAR STEEL FENCE AT TOP

NOTES:
1. TUBE STEEL FENCE AND SLEEVE PER MANUFACTURES SPEC.
2. MASONRY UNIT CAP.
3. PLATE AND TENSION LOCATION. FOR PROTO II SYSTEM.
4. 3 1/2" ø PVC EMBEDED POST SLEEVE FULL HEIGHT OF WALL. GROUT SOLID.
5. LOCATE TENSION RODS AT 2'–0" O.C. – GROUT CELL SOLID.
6. USE TOTAL WALL HEIGHT FOR DIP FOOTING SPACING PER PROTO II WALL SCHEDULE.
7. 6" MINIMUM WALL THICKNESS.

NOTE:
A. MAX. RETAINING OF 2'–0" FOR 6" WIDE PROTO–II. SEE PROTO II DETAIL 10 FOR ADDITIONAL RETAINING INFORMATION.
B. SEE DETAIL 6 FOR 5'–0" TO DAYLIGHT REQUIREMENTS.
C. POST MAY BE WELDED TO BEARING PLATE.

NO SCALE

NOTES:
1. FOOTING DESIGN ALLOWABLES: 2000 PSF BEARING, 200 PSF/FT LATERAL, SEISMIC SOIL PROFILE TYPE SD.
2. MAXIMUM HEIGHT FOR 4" PROTO II = 6'–8": MAX. HEIGHT FOR 6" PROTO II = 10'–0". MAX. HEIGHT FOR 8" PROTO II = 13'–4" COMBINATION WALLS MAY BE USED.
3. MAXIMUM DIP FOOTING SPACING = 16'–0": MINIMUM SPACING = 3'–4". TOLERANCE IS 12"± BUT THE NUMBER OF DIP FOOTINGS MUST REMAIN THE SAME FOR A GIVEN LENGTH OF WALL.
4. POST TENSION ROD IS INDEPENDENT OF DIP OR PIER SPACING.
5. POST TENSION ROD SPACING TOLERANCE IS ±8" BUT THE NUMBER OF RODS FOR A GIVEN LENGTH OF WALL MUST REMAIN THE SAME.
6. 13"ø x 5'–0" DEEP CIRCULAR PIER FOOTING WITH 2 #5 VERT, MAY BE USED IN LIEU OF DIP FOOTING SPACING AND SETTING PAD TO REMAIN THE SAME.

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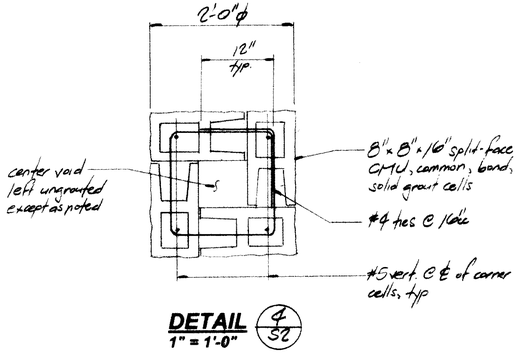
REGISTERED PROFESSIONAL ENGINEER C.J. ATKINSON S 4055 EXP.12/31/07 STRUCTURAL STATE OF CALIFORNIA 4-24-06

PROTO II FENCE WALL
LAGUNA RIDGE
ELK GROVE, CA

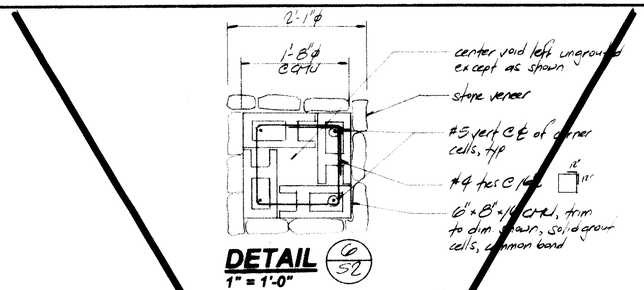
PROTO–II TM WALL SYSTEMS
WWW.PROTO2.COM
2648 E. WORKMAN AVE. #275
WEST COVINA, CA. 91791
ATTN: GARY OTTO
PH# (626) 967–9765
FAX# (626) 967–4904
4", 6", AND 8" THICKPOST–TENSIONED MASONRY WALLS
(MAY ONLY BE INSTALLED BY APPROVEDAND CERTIFIED INSTALLERS)
U.S.PATENTED 4,726,567
U.S.PATENTED 5,794,921
AND PATENT PENDING

FILE: 99–115–254–NEW.DWG

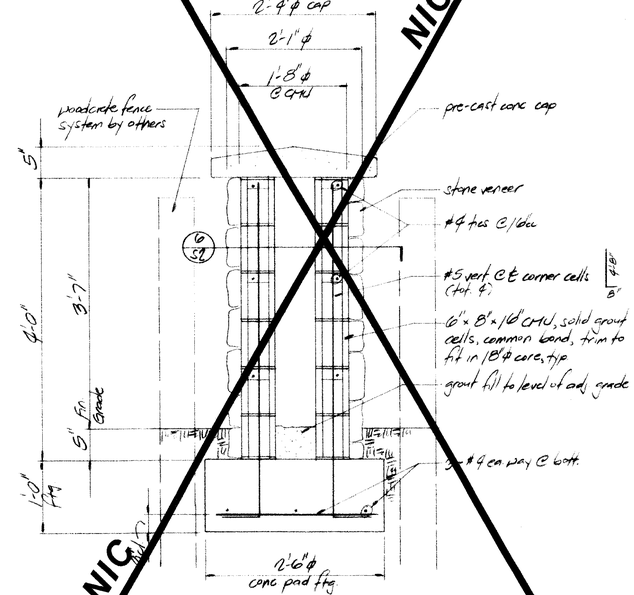
TRACKING NUMBERS: 99–115–445, 00–115–553, 01–115–294, 05–115–3347, 06–115–3606	
JOB NUMBER: 06–115–3913	
DRAWN: MAB	ENGINEER: DMO
CHECKED: JAD	SCALE: AS NOTED
DATE: 4/19/06	
SHEET: 2-1 S-1 OF 2	



DETAIL 4/S2
1" = 1'-0"



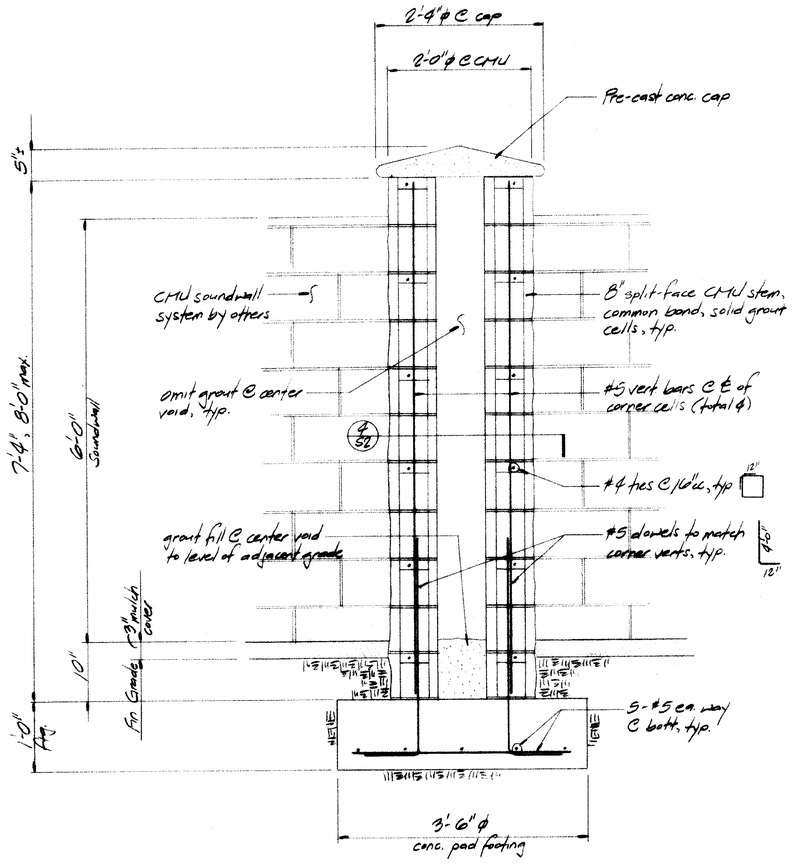
DETAIL 6/S2
1" = 1'-0"



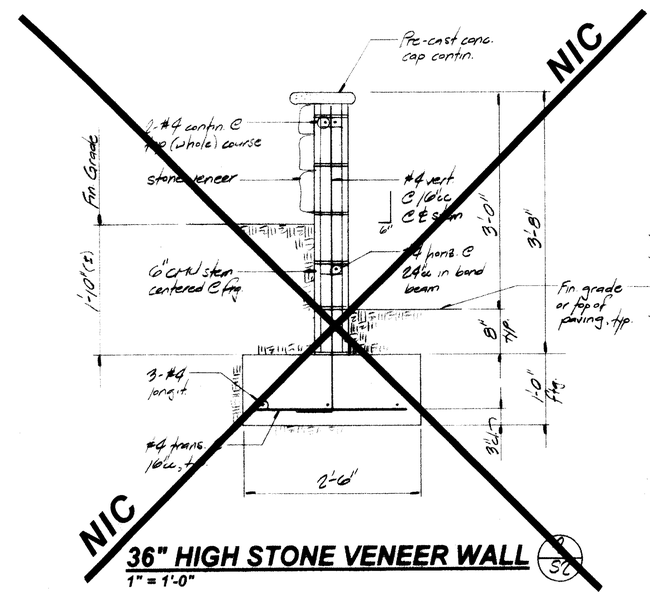
NIC

NIC

ELEVATION 25"SQUARE PILASTER 5/S2
1" = 1'-0"



ELEVATION - 24" SQUARE PILASTER 3/S2
1" = 1'-0"



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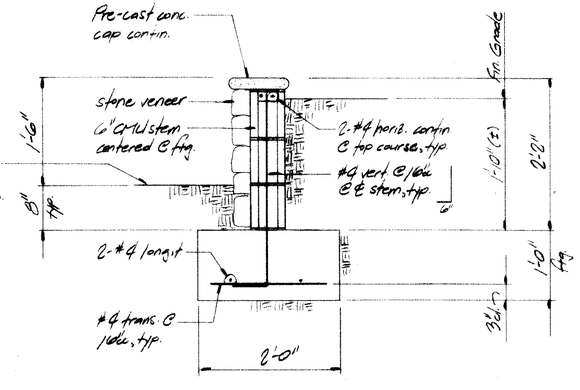
36" HIGH STONE VENEER WALL 5/S2
1" = 1'-0"



18" HIGH SEAT WALL / PLANTER 1/S2
1" = 1'-0"

Structural Notes

Applicable Codes
All details of design and construction shall comply with the California Building Code, 2001 Edition.

Design Data
Wind: Exposure C. Wind speed 80 mph, I = 1.0
Seismic: Zone 3, S_s soil profile

Foundations
1. Soils information: refer to geotechnical report "Laguna Ridge Subdivision", by Kleinfelder Associates, dated 6-2-06, file no. 51825/SAC8R371. Allowable design soil pressures:
   F_{up} = 2,000 psf (DL plus LL); 2,670 psf (DL plus LL plus wind / seismic)
   Active lateral pressure = 40 pcf (level, drained); 75 pcf (level, undrained)
   Passive pressure = 300 psf, Soil friction, μ = 0.30 (reduce 50% in combination with passive)
2. Footings shall bear on firm, undisturbed natural ground. All bearing foundations shall be poured into neat excavations, and precautions taken to prevent the edges from sloughing into the excavations. Bottoms of footings shall be level; tops of all footings shall be at a uniform elevation.
3. Project Geotechnical Engineer shall be retained to observe site clearing, excavation and grading operations to confirm existing soil conditions and verify that subgrade preparation is in conformance with the requirements of the geotechnical report.

Concrete
1. Reinforcing steel shall be intermediate grade billet steel bars conforming to ASTM designation A-615, Grade 60. Vertical bar laps shall be as shown on the drawings. Lap longitudinal horizontal reinforcing bars as follows:
   - Longitudinal bars in concrete footings shall lap a minimum of 32 bar diameters.
   - Longitudinal bars in masonry walls shall lap a minimum of 40 bar diameters.
   - Stagger lap splices of adjacent wall or footing bars 3'-0" minimum.

   Bars shall be wired together at laps. All clear dimensions shown for location of reinforcing are to face of bar and denote clear coverage.
2. All dimensions shown for location of reinforcing are to face of main bars and denote clear coverage. Concrete coverage shall be as shown on the details.
3. Concrete mix designs shall be provided by an approved independent testing laboratory for review and approval by the Structural Engineer prior to commencement of work. Concrete mix requirements:
   - Concrete strength: F'c = 2,500 psi at 28 days. No special inspection of concrete work required.
   - Cement content: minimum 5 sacks Type II Portland cement per cubic yard.
   - Aggregate size: 1" maximum.
   - Slump: 4" maximum.

Concrete Masonry Units
1. Concrete masonry units (CMU) for walls and pilasters shall be nominal 6" or 8" wide x 8" high x 16" long units conforming to ASTM C145 and C90 Type1, Grade N (compressive strength for design, f'm = 1500 psi minimum). Cells of CMU shall be solid grouted; center voids at pilasters shall be left ungrouted except as detailed. Units shall be placed in common (running) bond configuration except as shown. Color and texture of exposed units shall be as directed by the Landscape architect. No special inspection of concrete block work is required.
2. Mortar shall conform to ASTM C270, Type S, and have an ultimate compressive strength of 2000 psi minimum at 28 days. Grout shall have an ultimate compressive strength of 2000 psi minimum at 28 days.
3. Stone veneer shall be adhered to the surface of CMU in accordance with the manufacturer's requirements; full brick veneer shall be mechanically anchored per details. Veneer type and color, placement patterns, and caps and trim accessories shall be as specified by the Landscape Architect.

Wood
1. All structural wood shall conform to the following specifications (unless noted otherwise on plans):
   - Minimum wood grade for structural framing: Western Cedar #1 for 2x and 3x material; Western Cedar Select Structural for 4x and 6x material.
2. Cutting or notching of joists or beams shall not be allowed except as specifically detailed on plans.
3. Holes for bolts in wood and steel shall be bolt diameter plus 1/16". All bolts and screws shall be tightened on installation and re-tightened before closing in, or at the completion of the job.
4. All bolts and lag screws shall be provided with metal washers under heads which bear on wood, size as indicated on the details.
5. Wood screws shall be self-cutting, corrosion-resistant for exterior use.
6. Metal hardware for the connection of wood framing shall be manufactured by Simpson Strong-Tie or an approved equal.

Structural Steel
1. Fabrication and erection of structural steel shall conform to the latest standard specifications of the AISC.
2. Welding of structural steel shall comply with the requirements of the standard code for arc and gas welding of the American Welding Society, AWS D1.1, and the Uniform Code Standard. Weld electrodes shall be E70XX, unless otherwise required by AWS D1.1.
3. Materials:
   - Structural steel shapes and plates: ASTM A-36.
   - Structural steel tubing: ASTM A-500, Grade B.
   - Bolts: ASTM A-307, galvanized for exterior use.
4. Ferrous metal framing and connections shall be protected from corrosion by hot-dip galvanizing, or by painting with a minimum two coats red oxide (rust-inhibitive) primer and two finish coats exterior alkyd enamel paint, color as selected by the Owner/Landscape Architect.

Special Inspections
Special inspection in accordance with CBC Section 1701.5 is required for the following item(s):
a. (none required for this project).

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REGISTERED PROFESSIONAL ENGINEER MICHAEL D. CRAWFORD S 3792 EXP 3-31-07 STRUCTURAL STATE OF CALIFORNIA

LAGUNA RIDGE
CITY OF ELK GROVE, CALIFORNIA
DEVELOPER: PEYNEN AND BARDIS COMMUNITIES

SITE PILASTERS
SEAT WALL, PLANTER WALL
GENERAL NOTES

DATE: 4-25-06
DRAWN: MC
JOB NO: 05145.0

REVISION

NO	DATE	BY

SHEET 22
S2
OF 22 SHEETS

05145.0 LAGUNA RIDGE