

LANDSCAPE ARCHITECTURAL PLANS FOR REVERSE FRONTAGE TRACT NO. 23407 CITY OF RIVERSIDE, CA

BY
CONCORDIA DEVELOPMENT CORP
408 SOUTH STODDARD AVE
SAN BERNARDINO, CA 92401
714-884-8681



**STB
LANDSCAPE ARCHITECTS**

ENVIRONMENTAL DESIGN
IRRIGATION CONSULTANTS
COMPUTER AIDED DESIGN
VIDEO IMAGING

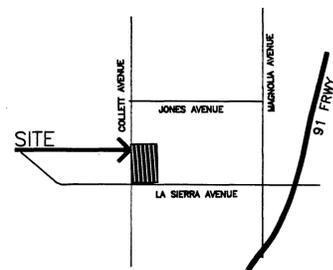
19 EAST CITRUS AVENUE, SUITE 206
REDLANDS, CALIFORNIA 92373
PHONE (714) 798-7490
R.L.A. 2725, C.I.D. 017883

SHEET INDEX

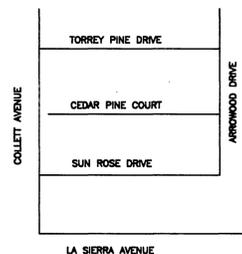
- 1). TITLE SHEET
- 2). LAYOUT AND CONSTRUCTION PLAN
- 3). IRRIGATION PLAN
- 4). PLANTING PLAN
- 5). IRRIGATION AND PLANTING DETAILS
- 6). WRITTEN SPECIFICATIONS
- 7). WRITTEN SPECIFICATIONS



NOT TO SCALE



VICINITY MAP



SITE INDEX MAP

GENERAL NOTES

1. All related work shall conform to the City of Riverside Park and Recreation Department Standards.
2. Contact the Park Projects Inspector a minimum of 48 hours in advance at (714) 782-5223 to schedule inspection. Inspections shall be required.
 - a) Prior to the installation of irrigation lines or components.
 - b) Prior to installation of hardscape.
 - c) When plant locations have been spotted in the field prior to digging plant pits.
 - d) While digging plant pits and planting/relocating trees.
 - e) After planting and all other indicated or specified work has been completed for start of maintenance.
 - f) At end of maintenance/final acceptance (contractor/developer will be released from maintenance only upon receipt of written notification from the City that the Park and Recreation Department is assuming maintenance responsibilities).
3. The Contractor/Developer shall maintain all plantings for a minimum period of one (1) year.

NOTE:
ALL WIRES UNDER CONCRETE SHALL BE SLEEVED PER CITY OF RIVERSIDE PARK AND RECREATION DEPARTMENT STANDARDS.
ALL PIPING UNDER CONCRETE SHALL BE SEPARATELY SLEEVED PER CITY OF RIVERSIDE PARK AND RECREATION DEPARTMENT STANDARDS.

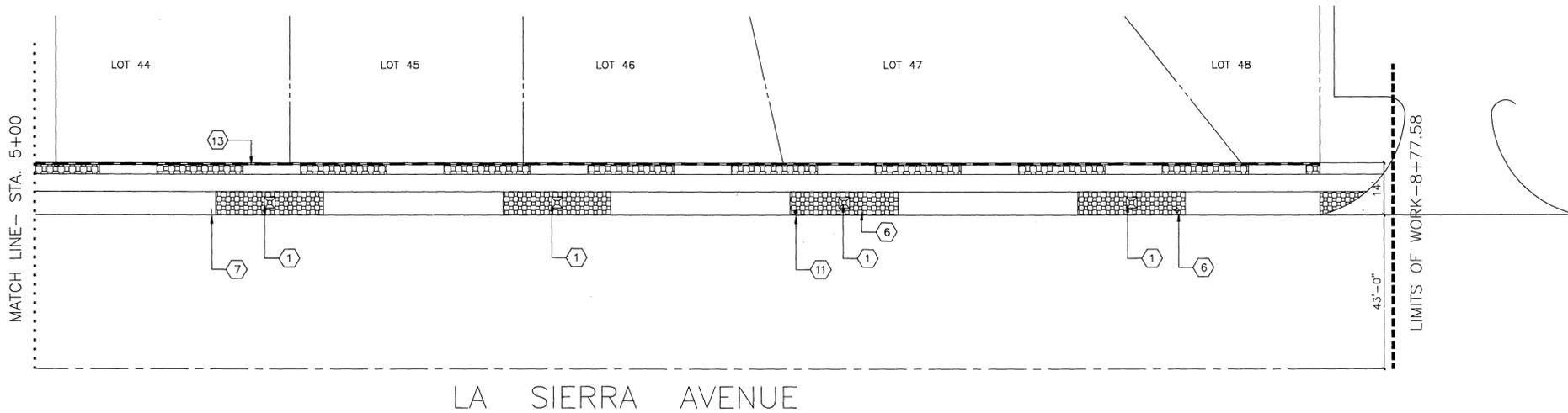
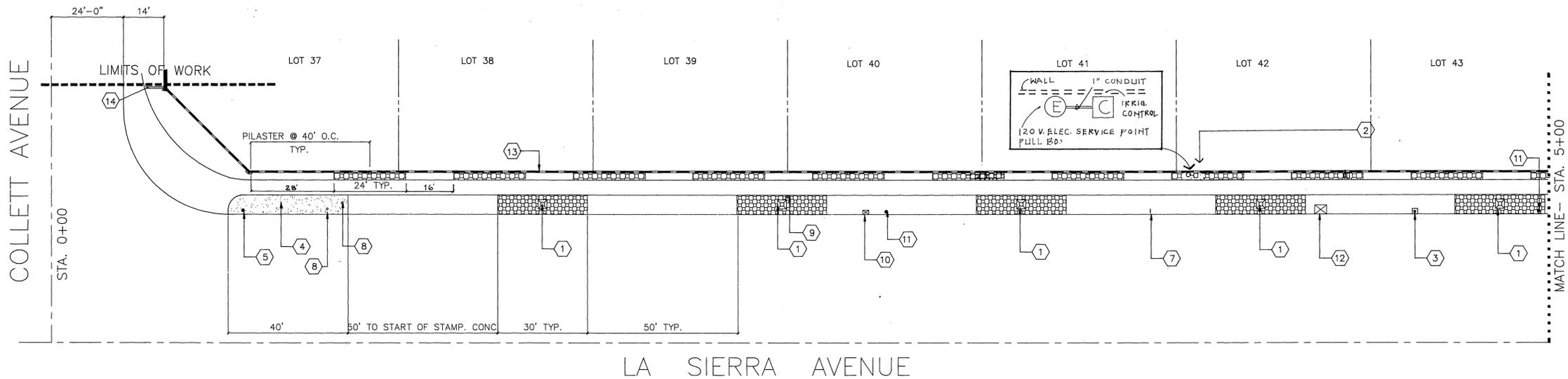
TOTAL SQ. FT. LANDSCAPE 4486 (60%)
TOTAL TREES IN R.O.W. 28/24" BOX
TOTAL SQ. FT. IN R.O.W. 7537
TOTAL SQ. FT. HARDSCAPE 3051 (40%)

CITY OF RIVERSIDE			
APPROVED BY	DATE	BY	APPROVED BY
PRINCIPAL ENGINEER	6/16/90	Bay	Bay
PARK DEPARTMENT			PUBLIC WORKS DIRECTOR
TRAFFIC DIVISION			
SHEET P.W. ENGINEER	6/16/90		DATE
PLANNING			



SUBMITTALS		APPROVALS	
4-12-90		Robert D. ...	For P.O.C. 6/5/90
5-2-90		Michael J. Sullivan	6/4/90
ELECT. SVC. CONN. PT. SHEET ONLY	DATE	Michael J. Sullivan	6/6/90
		Michael J. Sullivan	6-4-90

COVER SHEET
TRACT NO. 23407
REVERSE FRONTAGE
R-3088L
SHEET 1 OF 7

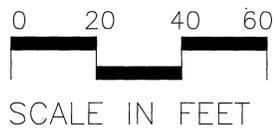


CONSTRUCTION NOTES

- ① PROPOSED 3' SQ. TREE WELL, #T-24 TREE GRATE, FINISH POWDER COAT U.A. FLAT BLACK W/ F STYLE FRAME 3' SQ. AVAILABLE FROM URBAN ACCESSORIES, (206) 568-8000, INSTALL PER MANUFACTURER'S RECOMMENDATIONS W/ BOLT DOWNS OPTION CONTACT MANUFACTURER PRIOR TO INSTALLATION OF CONCRETE.
- ② PROPOSED LANDSCAPE EDISON PEDESTAL AND METER BY OWNER
- ③ PROPOSED 1" LANDSCAPE WATER METER BY OTHERS
- ④ EXISTING BUS STOP
- ⑤ EXISTING STREET LIGHT
- ⑥ EXISTING SIGN
- ⑦ EXISTING FIRE HYDRANT
- ⑧ EXISTING AIR VENTS
- ⑨ EXISTING SIGNAL BOX
- ⑩ EXISTING UNDERGROUND VAULT
- ⑪ EXISTING POWER POLE
- ⑫ EXISTING STORM DRAIN CATCH BASIN
- ⑬ FOR REVERSE FRONTAGE WALL CONSTRUCTION AND PLACEMENT DETAILS SEE APPROVED STREET IMPROVEMENT PLANS
- ⑭ 6"x 6" CONCRETE MOW STRIP AT LIMITS OF WORK, INSTALL PER CITY STANDARDS

PAVING LEGEND

- 4" THICK STAMPED CONCRETE, 6"x6" GRANITE SETTS BOMACRON PATTERN, SOMBRERO BUFF (C-25) INTEGRAL COLOR W/ LITHOCROME COLOR WAX CURING COMPOUND, AVAILABLE FROM L.M. SCOFIELD (213) 723-5285 OR APPROVED EQUAL, INSTALL TOP SURFACE EVEN W/ EXISTING SIDEWALK AND CURB PER MANUFACTURERS RECOMMENDATIONS. REFER TO WRITTEN SPECIFICATIONS SHEET 7 FOR SPECIFICATIONS.
- 4" THICK, MEDIUM BROOM FINISH CONCRETE, COLOR TO MATCH STAMPED CONCRETE, INSTALL TOP SURFACE EVEN W/ EXISTING SIDEWALK & CURB.



S.T.B. LANDSCAPE ARCHITECTS
 ENVIRONMENTAL DESIGN
 REGULATION CONSULTANTS
 COMPUTER AIDED DESIGN
 VIDEO DESIGN
 54 EAST CITRUS AVENUE, SUITE 206
 RIVERSIDE, CALIFORNIA 92503
 TEL: 951-512-0788

1ST. PRN. CHK. 12/15/89			
2ND. PRN. CHK. 3/9/90			
MARK	REVISIONS	APPR. DATE	
DESIGNED BY S.T.B.	DRAWN BY CADD	CHECKED BY S.T.B.	

CITY OF RIVERSIDE

APPROVED BY	DATE	BY	APPROVED BY
PRINCIPAL ENGINEER	6/18/90	KEA	BY [Signature]
PARK DEPARTMENT	6/16/90	AK	PUBLIC WORKS DIRECTOR
TRAFFIC DIVISION	6-17-90	KAC	
CLASS. P.W. ENGINEER	6/14/90	WOC	

LAYOUT & CONSTRUCTION PLAN
 TRACT NO. 23407
 REVERSE FRONTAGE

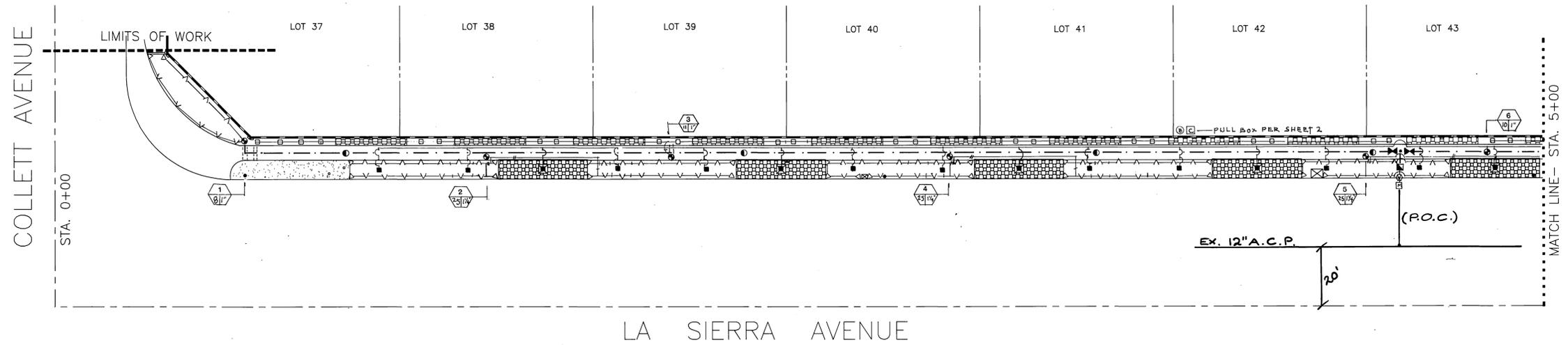
ACCOUNT NO.
R-3088L
 SHEET 2 OF 7

HORIZ. SCALE = 1"=20' VERT. SCALE =

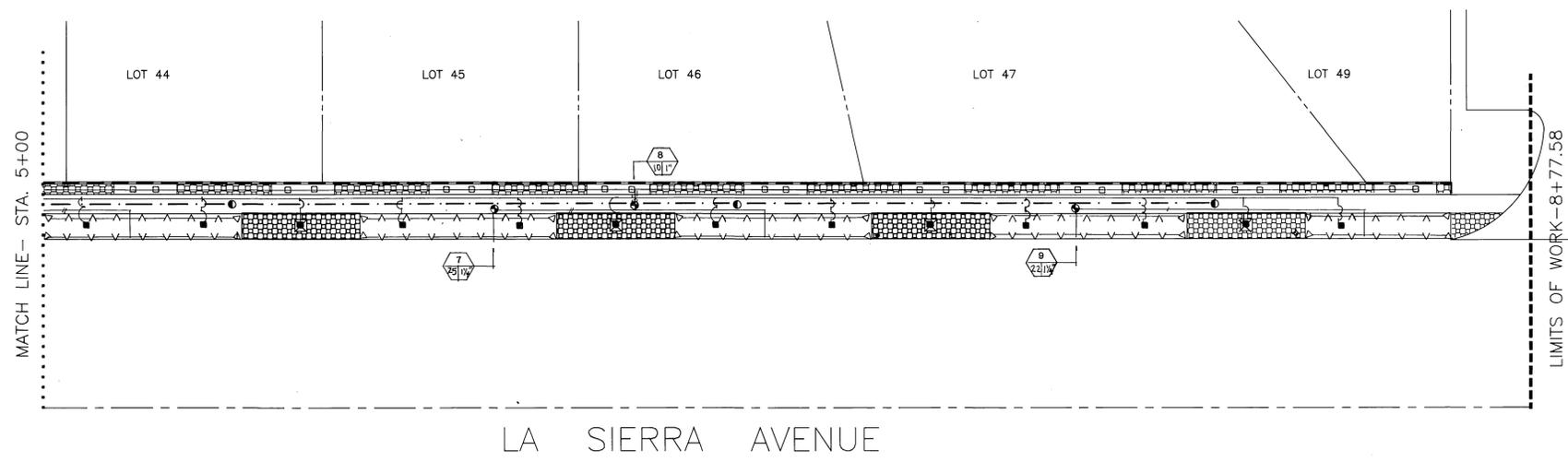
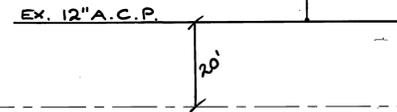
INDEXED 8-17-90 LHL



PC-2386-R R-3088-L



WATER SOURCE INFORMATION
 AVAILABLE PRESSURE RANGE: 95 P.S.I.
 METER SIZE: 1"
 PEAK DEMAND: 25 G.P.M.



IRRIGATION NOTES

- CONTRACTOR SHALL OBTAIN A COPY OF THE 'CITY OF RIVERSIDE SPECIFICATIONS FOR LANDSCAPE DEVELOPMENT' AND SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH SAME AS THEY ARE HEREBY MADE A PART OF THE SPECIFICATIONS.
- CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH ALL SITE CONDITIONS AND DIMENSIONS PRIOR TO BIDDING OR COMMENCING WORK. ANY DISCREPANCIES FOUND SHALL BE BROUGHT TO THE PARK PROJECTS INSPECTOR'S ATTENTION IMMEDIATELY.
- EXTREME CARE SHALL BE EXERCISED WHEN WORKING ADJACENT TO ANY STRUCTURES OR UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES AND REPAIRING ANY DAMAGES CAUSED BY HIS WORK AT HIS COST.
- IRRIGATION DESIGN IS BASED ON A MINIMUM AVAILABLE WATER PRESSURE OF 95 P.S.I. WITH A MAXIMUM SYSTEM DEMAND OF 25 G.P.M. REFER TO FRICTION LOSS CHART BELOW FOR RESIDUAL PRESSURE FOR WORST CASE VALVE AND LONGEST RUN.
- MAKE POINT OF CONNECTION AT THE WATER METER AS SHOWN ON THE PLANS. METER SHALL BE PROVIDED BY OTHERS.
- THE PARK PROJECTS INSPECTOR SHALL BE RESPONSIBLE FOR THE INTERPRETATION OF THE DRAWINGS SHOULD A QUESTION ARISE.
- PIPING SHOWN ON THE PLANS IS ESSENTIALLY DIAGRAMMATIC. ROUTE PIPING AND LOCATE VALVES TO AVOID CONFLICT WITH STATIONARY ELEMENTS. ALL MAINLINE PIPE SHALL BE LOCATED 24" AWAY FROM SIDEWALKS IN PARKWAY.
- WRING FROM THE CONTROLLER TO THE VALVES SHALL BE DIRECT BURIAL AWG-UF.
- ALL SPRINKLER HEADS UTILIZED IN REVERSE FRONTAGE LANDSCAPING SHALL BE ADJUSTABLE AND MOUNTED ON POP-UP SPRINKLER BODIES (4" POP-UPS FOR BUBBLERS AND MINIMUM 12" POP-UPS FOR GROUNDCOVER).
- ALL EQUIPMENT SHALL BE AS LISTED IN THE LEGEND. SUBSTITUTIONS WILL NOT BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE CITY OF RIVERSIDE.
- PRESSURE REGULATOR, BACKFLOW PREVENTER, GATE VALVES, AND MAINLINE ARE TO BE LOCATED IN PARKWAY. ALL REMOTE CONTROL VALVES FOR THE PLANTING AREA ADJACENT TO WALL ARE TO BE LOCATED DIRECTLY OPPOSITE OF THE PLANTING AREA IN THE PARKWAY AND SLEEVED OVER TO THE PLANTING AREA BY THE WALL.
- ALL EQUIPMENT SHALL BE INSTALLED PER DETAILS. IN THE ABSENCE OF DETAILS INSTALLATION SHALL BE IN ACCORDANCE WITH THE STANDARD PRACTICE OF THE TRADE AND THE CITY OF RIVERSIDE DEPARTMENT STANDARDS.

IRRIGATION LEGEND						
SYM	DESCRIPTION	MANUFACTURER	MODEL	PSI	GPM	NOTES
∇	12" POP-UP STRIP SPRAY	RAINBIRD	1812-8H-FLT-5AM	30	0.79	ADJUST AS NEEDED
▽	12" POP-UP STRIP SPRAY	RAINBIRD	1812-8Q-FLT-5AM	30	0.39	ADJUST AS NEEDED
□	4" POP-UP BUBBLER	RAINBIRD	1804-SAM-5CST-B	30	0.50	ADJUST AS NEEDED
■	4" POP-UP BUBBLER	RAINBIRD	1804-SAM-PA-80-1402	30	0.50	ADJUST AS NEEDED
●	QUICK COUPLER	RAINBIRD	44LRC W/LRC			INSTALL IN PARKWAY WITH MAINLINE
⊕	GATE VALVE	NIBCO	T-113 LINE SIZE			INSTALL PER CITY SPECS.
⊙	BRASS IN-LINE VALVE	RAINBIRD	EFA-CP SERIES			LINE SIZE AS SPECIFIED
⊖	RP BACKFLOW PREVENTER	FEBCO	825Y-1"			INSTALL PER CODE
⊗	PRESSURE REGULATOR	WILKINS	500 YSBR			LINE SIZE AS SPECIFIED
⊠	AUTOMATIC CONTROLLER	RAINBIRD	ISC-8: 8 STATION			IN LE MEUR ENCLOSURE
⊡	1" WATER METER BY OTHERS					CONFIRM LOCATION
====	SCH. 40 P.V.C. SLEEVE UNDER ALL PAVING, MAINLINE, LATERAL LINE, & WIRES					BURY MIN. 18", 2x DIA. PIPE NO ANGLED FITTINGS IN SLEEVES WILL BE ALLOWED
---	1-1/4" SCH 40 PVC MAIN					BURY MIN. 18" INSTALL WESTERLY OF SIDEWALK IN PARKWAY
---	1/2" CL 200 PVC LATERAL					BURY MIN. 12"
---	3/4" " " " "					
---	1" " " " "					

NOT SHOWN - CONTROL WIRE U.F. DIRECT BURIAL, SOLID COPPER, ROUTE W/MAINLINE 14 GA PILOT, 12 GA COMMON - SEE SPECS.

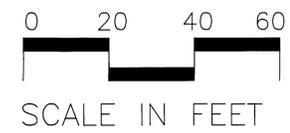
NOTE: RUN TO EACH END OF MAINLINE TWO (2) EXTRA PILOT AND ONE (1) COMMON WIRE AND BUNDLE & LABEL AND INSTALL IN VALVE BOX - TYP. TWO (2) LOCATIONS.

FRICTION LOSS CALCULATIONS-VALVE # 2

LOSS THRU 1" METER	2.8 PSI
LOSS THRU 1" R.P. BACKFLOW DEVICE	9.0 PSI
LOSS THRU 310' OF 1-1/4" MAINLINE	9.68 PSI
LOSS THRU 1-1/4" REMOTE CONTROL VALVE	5.5 PSI
LOSS THRU FITTINGS AND LATERAL LINES	4.0 PSI
ELEVATION DIFFERENCE	+ 1 PSI
TOTAL PSI LOSS/GAIN	31.08
PSI REQ'D AT HEAD	30.00
ORIGINAL PSI AT REGULATOR	65.00
TOTAL PSI LOSS	61.08
RESIDUAL PSI	+3.92



REFER TO SHEET 5 FOR IRRIGATION DETAILS

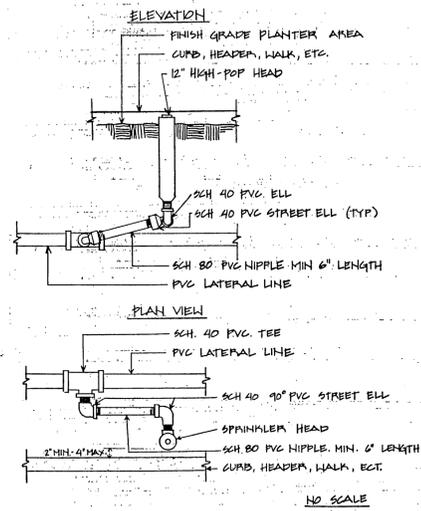


DESIGNED BY S.T.B. DRAWN BY CADD CHECKED BY S.T.B.
 DATE: 6/22/90

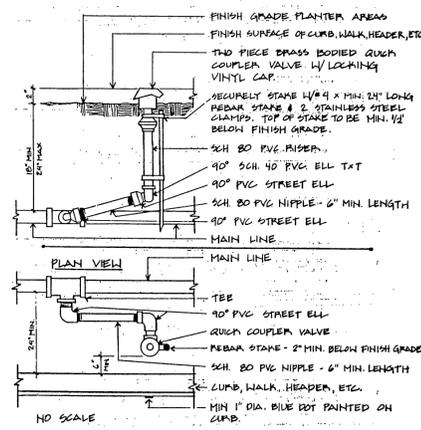
CITY OF RIVERSIDE
 APPROVED BY: [Signature]
 TRAFFIC DIVISION
 DATE: 6/22/90

IRRIGATION PLAN
 TRACT NO. 23407
 REVERSE FRONTAGE
 HORIZ. SCALE = 1"=20' VERT. SCALE =

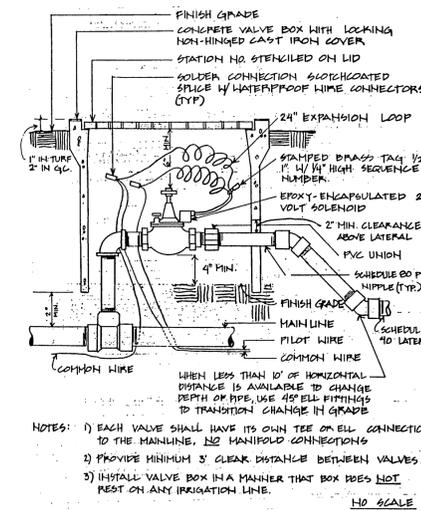
ACCOUNT NO.
 R-3088L
 SHEET 3 OF 7



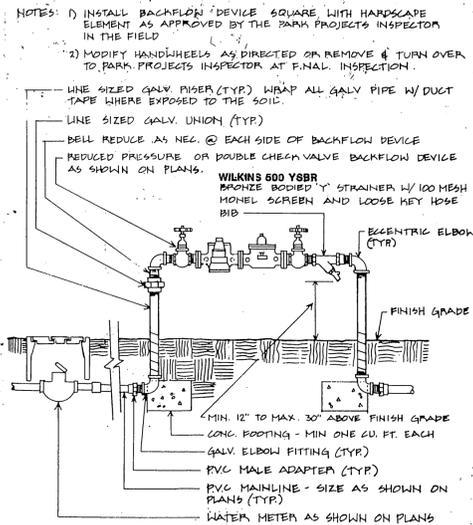
SPRAY HEAD



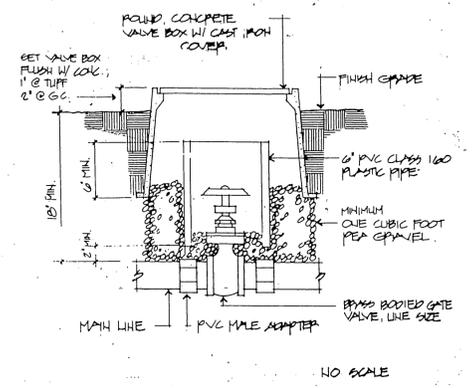
QUICK COUPLER



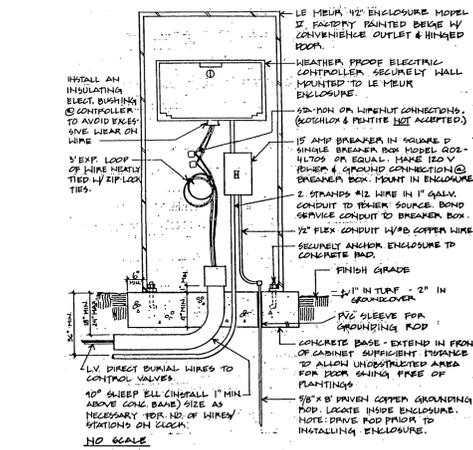
AUTOMATIC VALVE



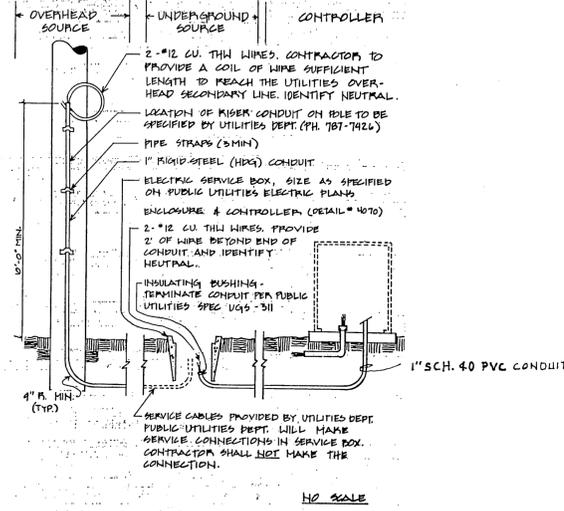
REDUCED PRESSURE/DOUBLE CHECK VALVE BACKFLOW DEVICE



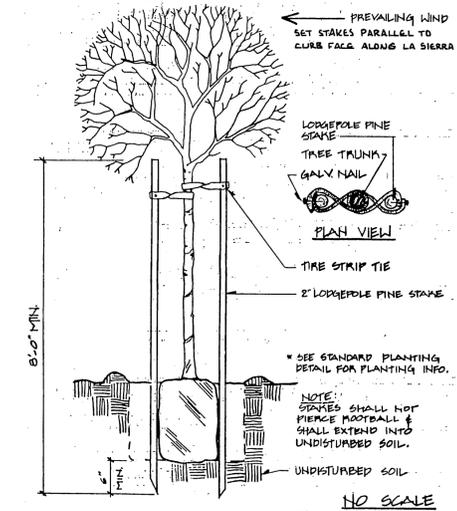
GATE VALVE



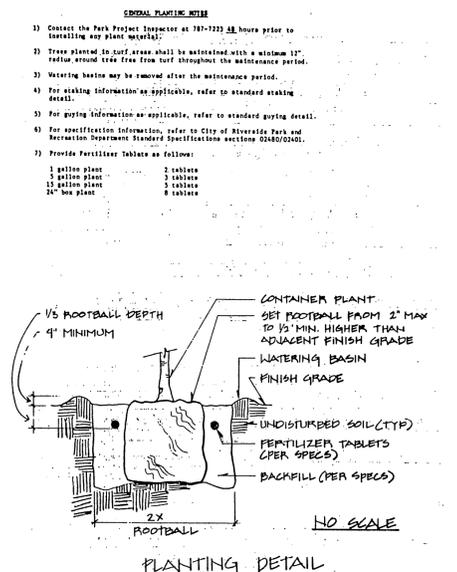
CONTROLLER



UTILITY SERVICE



DOUBLE STAKING DETAIL



PLANTING DETAIL

SPECIAL PLANTING NOTE

- 1) Contact the Park Projects Inspector at 787-7222 48 hours prior to installing any plant material.
- 2) Trees planted to curb stakes shall be maintained with a minimum 12\"/>
- 3) Watering basins may be removed after the maintenance period.
- 4) For staking information as applicable, refer to standard staking detail.
- 5) For tying information as applicable, refer to standard tying detail.
- 6) For specification information, refer to City of Riverside Parks and Recreation Department Standard Specifications section 0240/0240.
- 7) Provide Particular Tables as follows:

1 gallon plant	2 cables
3 gallon plant	2 cables
15 gallon plant	3 cables
30\"/>	



MARK	REVISIONS	APPR. DATE

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	6/19/90	W.A.
PARK DEPARTMENT	6-6-90	AK
TRAFFIC DIVISION		
CHIEF P.W. ENGINEER	6-19-90	AK
DATE	6/22/90	

IRRIGATION AND PLANTING DETAILS
TRACT NO. 23407
REVERSE FRONTAGE

HORIZ. SCALE: 1" = '
VERT. SCALE: 1" = '

ACCOUNT NO.
R-3088L
SHEET 5 OF 7

R-3088-L
PC-2986-R
DATE 07-98

SECTION 02441 - IRRIGATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

The provisions of the "Standard Specifications for Public Works Construction", current edition, shall apply except as modified herein.

1.02 SCOPE:

A. General: The work of this section shall include the furnishing of all labor, materials, equipment and services necessary to provide complete operating irrigation systems, including 120 volt electrical service to the controller, all as shown on the drawings and as specified.

B. Related Work Specified Elsewhere:

Table with 2 columns: Item, Description. Includes Site Clear and Grub, Site Grading, Selected Site Demolition, Planting, Electrical.

1.03 SUBMITTALS:

A. Materials List: Contractor shall submit a complete materials list for approval by the City prior to performing any work. Catalog data and full descriptive literature must be submitted whenever the use of item different than those specified is requested.

Table with 4 columns: Item, Description, Manufacturer, Model No. Includes Pressure Supply Line, Lam Head, etc.

B. Record Prints:

(1) Record accurately on one set of blue-line prints all changes in the work constituting departures from the original contract drawings, including changes in pressure and non-pressure line locations.

(2) The changes and dimensions shall be recorded in a legible and workmanlike manner to the satisfaction of the City. Prior to final inspection of work, submit record prints to City for approval.

(3) Dimension from two permanent points of reference (buildings, monuments, sidewalks, curbs, pavements, etc.). Data to be shown on record prints shall be recorded day-to-day as the project is being installed.

(4) Show locations and depths of the following items: a. Point of connection. b. Routing of sprinkler pressure lines (dimension maximum 100 feet along routing).

c. Gate valves. d. Sprinkler control valves. e. Quick coupling valves. f. Routing of control wires. g. Related equipment (as may be directed).

(5) Maintain record prints onsite at all times.

1.04 INSPECTIONS:

A. Inspections will be required for: (1) Pressure test of irrigation main line. (2) Coverage test. (3) Final inspection/start of maintenance. (4) Final acceptance.

B. Inspection Requests: Contractor shall notify the Park Projects Inspector in advance for requesting all inspections as follows:

Pressure supply line installation and testing - 36 hours (1-1/2 working days). System layout - 36 hours (1-1/2 working days). Coverage tests - 36 hours (1-1/2 working days). Final inspection - 48 hours (two working days).

When inspections have been conducted by other than the Park Projects Inspector, the Contractor shall show evidence of when and by whom these inspections were made.

No inspection will commence without "record" prints. In the event the Contractor calls for an inspection without up-to-date "record" prints, without completing previous noted corrections, or without preparing the system for inspection, the inspection will be cancelled and the Contractor shall be charged for the direct costs of all City personnel time and consultant time lost.

C. Closing in uninspected work: Do not allow or cause any of the work of this section to be covered or enclosed until it has been inspected, tested and approved by the City.

D. Coverage test: When the sprinkler system is completed, Contractor shall perform a coverage test in the presence of the City to determine if the water coverage for planting areas is complete and adequate. This test must be accepted by the City before planting can commence.

E. Hydrostatic test: (1) Prior to the installation of any valves, all pressure lines shall be tested under a hydrostatic pressure of 150 psi for a period of not less than two hours, with all valves closed and the line fully charged with water after all air has been expelled from the line.

(2) All hydrostatic tests shall be made in the presence of the City. No pressure line shall be backfilled until it has been inspected, tested, approved in writing, and the inflow and valve locations have been noted on the "as-built" record drawings.

(3) Contractor shall furnish necessary force pump and all other test equipment.

1.05 TURNOVER ITEMS:

A. Controller Charts: (1) Record prints must be approved by City before charts are prepared. (2) Provide one controller chart (of the maximum size controller door will allow) for each automatic controller. Chart shall show the area covered by controller.

(3) The chart is to be a reduced copy of the actual "record" print. In the event the controller sequence is not legible when the prints are reduced, it shall be enlarged to a readable size.

(4) Chart shall be marked with a different color to show the area of coverage for each station.

(5) When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being minimum 20 mils in thickness. Chart shall be installed in the controller enclosure using velcro fasteners.

(6) Controller charts shall be completed prior to final inspection.

B. Operation and Maintenance Manuals: Within 10 calendar days prior to acceptance of construction, prepare and deliver to the City all required descriptive materials, properly prepared in two "individually bound copies" of the operation and maintenance manual. The manual shall describe the material installed and shall be in sufficient detail to permit operating personnel to identify, operate, and maintain all equipment. All spare parts lists and related manufacturer's information shall be included for each equipment item installed. Each complete, bound manual shall include the following information:

(1) Index sheet stating Contractor's address and telephone number including names and addresses and telephone numbers of local manufacturer's representatives.

(2) Complete operating and maintenance instructions on all major equipment.

C. Materials to be furnished:

(1) Supply as part of this contract the following items: a. 45 additional sprinkler heads of each type and spray pattern shown. b. Two (2) wrenches for disassembly and adjustment of each type sprinkler head installed.

c. Two keys for each automatic controller. d. Two couplers with a 3/4" bronze hose bib, bent nose type with hand wheel and two coupler keys.

e. One valve box cover key. f. "As-built" record drawings. g. Remove and turn over backflow device valve handles.

h. Documentation of Water Department's inspection and acceptance of backflow device. D. The above items shall be turned over to the City at the conclusion of the project - final inspection.

1.06 GUARANTEE:

A. General: The entire sprinkler system, including all work done under this contract, shall be guaranteed against all defects and fault of material and workmanship for a period of one (1) year following the filing of the Notice of Completion. All materials used shall carry a manufacturer's guarantee of one (1) year.

Should any problem with the irrigation system be discovered within the guarantee period, it shall be corrected by the Contractor at no additional expense to the City within ten (10) calendar days of receipt of written notice from the City. When the nature of the repairs as determined by the City constitute an emergency (e.g., broken pressure line) the City may proceed to make repairs at the Contractor's expense. Any and all damages to existing improvement resulting either from faulty materials or workmanship, or from the necessary repairs to correct same, shall be repaired to the satisfaction of the City by the Contractor, all at no additional cost to the City.

B. Form of Guarantee: Guarantee shall be submitted on Contractors own letterhead as follows:

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, and that the work, materials, and equipment as installed will fulfill the requirements of the guarantee included in the specifications. We agree to repair or replace any or all of our work, together with any other adjacent work which may be displaced by so doing, that may prove to be defective in its workmanship or materials within a period of one (1) year from date of acceptance of the above named project by the City of Riverside, California, at no additional cost to the City. We shall make such repairs or replacements within 10 calendar days following written notification by the City. Then the immediate repair or replacement of the work is necessary to ensure the public safety and welfare, which would be endangered by continued usage of the facility, such circumstance will be deemed an operational emergency. In the event of such an emergency after the City contacts our firm and after authorizing 24 hours to initiate repairs, if we fail to initiate and diligently complete such repairs in a timely manner, the Director may direct City forces to perform such functions as he may deem necessary to correct the work and immediately place the facility back in operational condition. If such procedure is implemented, we shall bear all expenses incurred by the City. In all cases, the judgment of the Director shall be final in determining whether an operational emergency exists. In the event of our failure to make such repairs or replacements within the time specified after receipt of written notice from the City (other than an operational emergency), we authorize the City to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefor upon demand.

PROJECT: LOCATION: SIGNED: ADDRESS: PHONE:

C. After the system has been completed, the Contractor shall instruct the Park Department Representative in the operation and maintenance of the system and shall furnish a complete set of operating instructions.

D. Any settling of trenches which may occur during the one-year period following acceptance shall be repaired to the satisfaction of the City. Repairs shall include the complete restoration of all damage to planting, paving or other improvements of any kind as a result of the work.

PART 2 - MATERIALS

2.01 GENERAL: All materials shall conform with Section 212 of the Standard Specification except as modified herein.

2.02 PIPE AND FITTINGS: A. Pipe - General: (1) Pressure supply lines 2 inches in diameter and up to 8 inches in diameter shall be either Class 315 solvent weld PVC or Class 200 rubber gasket type PVC. Solvent weld and ring type pipe shall not be used together on the same pressure supply line.

(2) Pressure supply lines 1-1/2 inches in diameter and smaller shall be minimum schedule 40 PVC. (3) Non-pressure lines shall be minimum Class 200 PVC.

B. Steel Pipe: Amend Standard Specifications Section 212-2.1.2 to read: "All steel pipe shall be hot-dipped galvanized, and all fittings for steel pipe shall be 250 pound rated galvanized malleable iron, flanged pattern. Pipe sizes indicated on the drawings are nominal inside diameter, unless otherwise noted."

C. Plastic Pipe: Add the following to Standard Specifications Section 212-2.1.3: All plastic pipe shall bear the following markings: manufacturer's name, nominal pipe size, schedule or class, type of material, pressure rating in PSI, NSF seal of approval, and date of extrusion.

Amend Standard Specification Section 212-2.1.3 to read: All plastic pipe fittings shall be standard weight schedule 40 and shall be injection molded of an improved PVC fitting compound. All threaded plastic fittings shall have injection molded threads. No cut threads will be accepted on PVC pipe and fittings. All steel elbows shall be manufactured in injection molds that are side gated. All threaded nipples shall be standard weight schedule 40 with molded threads.

2.03 VALVES & VALVE BOXES

A. Remote Control Valves: Add the following to Standard Specifications Section 212-2.2.4: Valves shall be spring-loaded, self-cleaning, packless diaphragm activated, of a normally closed type. Valves shall be of the same manufacturer and series as the automatic controller.

Valve solenoids shall be corrosion-proof and constructed of stainless steel molded in epoxy to form one integral unit, and shall be 24 volt A.C., 2.0 watt maximum (2" and smaller valves).

Valve shall close against flow without chattering and with minimum closing surge pressure (minimum 5 seconds closing time per valve).

Valve shall be completely serviceable in the field without removing valve body from line.

B. Quick-Coupling Valves: Add the following to Standard Specifications Section 212-2.2.6: Quick coupling valves shall have locking vinyl cover and shall be 1" in size.

C. Gate Valves: All gate valves shall be capable of withstanding a minimum working pressure of not less than 150 psi.

D. Valve Boxes: Add the following to Standard Specifications Section 212-2.2.7: All remote control valve boxes shall be rectangular concrete boxes with non-hinged locking cast-iron covers. Valve station number shall be stenciled in two-inch-high 12" numerals on cover using epoxy resin base paint of a contrasting color. Gate valve boxes shall be round concrete boxes with non-hinged locking cast iron covers marked either "Gate Valve" or "G.V." with letters cast or tooled in the cover.

2.04 BACKFLOW PREVENTER: Add the following to Standard Specifications Section 212-2.3: The backflow prevention unit shall be a reduced pressure type vacuum breaker of the size, manufacture, and model number as indicated on the drawings. If not indicated, the device shall be the same size as the water service and the manufacturer and model number shall be as approved by the City.

2.05 ELECTRICAL MATERIALS: A. Conduit: Amend Standard Specifications Section 212-3.2.1 to read: Conduit below paving shall be schedule 40 PVC of sufficient size to carry all proposed wiring. Wiring shall be in a separate sleeve.

B. Wire: Add the following to Standard Specifications Section 212-3.2.2: All common wire shall be white with a colored stripe. Stripe color shall be different for each controller installed. All control wire shall be of one color other than white or green. A different color control wire shall be used for each controller installed.

C. Electrical Service: Materials for electrical service shall comply with the standard specifications, governing utility agency standards, and requirements of all applicable codes.

2.06 CONTROLLER UNIT: Add the following to Standard Specifications Section 212-3.3: Controllers shall be wall mounted type, as indicated on the drawings, with a heavy duty watertight case and locking hinged cover.

2.07 IRRIGATION HEADS: All irrigation heads shall be as shown on the plans and shall conform with Section 212-4.4 of the Standard Specifications.

PART 3 - EXECUTION: 3.01 GENERAL: All work shall conform with Section 308 of the Standard Specifications except as modified herein. No work of this section other than sleeving under pavement shall commence prior to the completion and acceptance of all grading work specified in Section 02210.

Add the following to Standard Specifications Section 308-5.1: A. Water Supply: Connections to or the installation of the water supply shall be at the locations shown on the drawings. Minor changes caused by actual site conditions shall be made at no additional cost to the City.

B. Electrical Service: Contractor shall provide electrical service as necessary and make 120V connection to the irrigation controllers.

C. Code Requirements: Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence. Verify that irrigation system may be installed in strict accordance with all pertinent codes and regulations, the original design, the referenced standards, and the manufacturer's recommendations.

D. Grades: Before starting work of this section, the contractor shall obtain the written acceptance of the City of the final grades, and written authorization for the work of this section to proceed. Contractor is to keep within the specified material depths with respect to finish grade. Failure to obtain such written acceptance may subject the contractor to adjusting the grades or depth of lines in order to achieve acceptable depths of cover, all as directed by the City and at no additional cost to the City.

E. Coordination with work of other trades: Make all necessary measurements in the field to ensure precise fit of items in accordance with the original design. Contractor shall coordinate the installation of all irrigation materials with all other work. Special attention shall be given to coordination of piping locations versus tree and shrub locations and sleeve locations versus pavement installation to avoid conflicts.

F. Contractor shall maintain record drawing blueprint on site at all times. Upon completion of work, transfer all as-built information on changes and dimensions to reproducible media prints. The changes and dimensions shall be recorded in a legible and workmanlike manner, to the satisfaction of the Park Projects Inspector.

3.02 TRENCHING AND BACKFILLING: A. Trenching: (1) Add the following to Standard Specifications Section 308-2.2: Dig trenches and support pipe continuously on bottom of ditch. Where lines occur under paved areas, depth dimensions shall be considered below subgrade.

(2) Amend Standard Specifications Section 308-2.2.2 to read: Water lines continuously pressurized - minimum 18 inches, maximum 24 inches. (These measurements are to be from subgrade elevation for piping under pavement.)

(3) Amend Standard Specifications Section 308-2.2, paragraph 3) to read: Lateral sprinkler lines - minimum 12 inches and maximum 16 inches.

(4) Add the following to Standard Specifications Section 308-2.2: Where it is necessary to excavate adjacent to existing trees, the contractor shall avoid injury to trees and tree roots. Excavation in areas where 2-inch and larger roots occur shall be done by hand. All roots 2 inches and larger in diameter shall be tunneled under and shall be heavily wrapped with wet burlap to prevent scarring or drying. Where trenching machine is run close to trees having roots smaller than 2 inches in diameter, the wall of the trench adjacent to the tree shall be hand tamped, making a clean cut through the roots. All roots 1 inch and larger in diameter shall be painted with two coats of tree seal or approved equal. Trenches adjacent to trees shall be closed within 24 hours.

(5) Permanent Resurfacing: Add the following to Standard Specifications Section 308-5.1: All surface improvements damaged or removed as a result of the contractor's operations shall be reconstructed by the contractor to the same dimensions, except for pavement thickness, and with the same type materials used in the original work. Trench resurfacing shall be 1 inch greater in thickness than existing pavement. Concrete pavement shall be removed and replaced in "full panels" with no horizontal dimension less than five (5) feet. Contractor shall review the planned layout and lines of concrete removal and replacement with the Park Projects Inspector prior to sawcutting for removal work.

B. Backfill: Amend Standard Specifications Section 308-2.2 to read: Backfill shall be uniformly tamped in 4-inch layers under and around the pipe for the full width of the trench and the full length of the trench. Materials shall be sufficiently damp to permit thorough compaction, free of voids. Backfill shall be compacted to dry density equal to adjacent undisturbed soil and shall conform to adjacent grades.

Flooding in lieu of tamping is not allowed without specific prior written approval of the Soils Engineer and the Park Projects Inspector.

Under no circumstances shall the wheels of any vehicle not designed for the purpose of soils compaction be used to compact backfill.

3.03 PIPE INSTALLATION: A. General: Add the following to Standard Specifications Section 308-5.2.1: (1) Piping under existing pavement may be installed by jacking, boring, or hydraulic driving. However, no hydraulic driving is permitted under asphaltic concrete pavement.

(2) Cutting or breaking of existing pavement is not permitted except as approved by Park Projects Inspector. When approved, all necessary repairs and replacements will be made at no additional cost to the City.

(3) Carefully inspect all pipe and fittings before installation, removing all dirt, scale and burrs and reaming; install pipe with all markings up for visual inspection and verification.

(4) Contractor shall install concrete thrust blocking per the manufacturer's recommendations at all changes of direction and terminal points of pressure pipe.

(5) Parallel lines shall not be installed directly over one another. Provide a minimum of 12" horizontal separation for all parallel lines.

(6) For plastic-to-metal connections, work the metal connections first. Use a non-hardening pipe dope on all threaded plastic-to-metal connections, except where noted otherwise.

(7) All piping under pavement shall be sleeved using schedule 40 PVC sleeves. Each line shall be separately sleeved.

(8) Do not install multiple assemblies ("manifold") on plastic lines. Provide each equipment assembly (e.g., KCI, quick coupler, gate valve, head, backflow device) with its own connection to its service line.

B. Plastic Pipe: Add the following to Standard Specifications Section 308-5.2.3: (1) Exercise care in handling, loading, unloading and storing plastic pipe and fittings, store plastic pipe and fittings under cover until ready to install; transport plastic pipe on a vehicle with a bed long enough to allow pipe to lay flat, avoid undue bending and any concentrated external load.

(2) 360° applicators shall be used to apply primer and solvent on pipe sizes 2-1/2 inches and larger.

3.04 BACKFLOW INSTALLATION: Add the following to Standard Specifications Section 308-5.3: Install backflow assemblies at locations approved in the field by the Park Projects Inspector and at heights required by local codes.

3.05 VALVE AND VALVE BOX INSTALLATION: Amend Standard Specifications Section 308-5.3 to read: Valves shall be the same size as the pipeline in which they are installed unless otherwise specified on plans. Valves shall be installed a minimum of three feet in horizontal distance apart, each with its own connection to the pressure main line.

Amend Standard Specifications Section 308-5.3 to read: Install quick couplers and valve boxes per Parks and Recreation Department standard details.

Add the following to Standard Specifications Section 308-5.3: Valves shall be installed in parkway shrub areas.

3.06 SPRINKLER HEAD INSTALLATION: Amend Standard Specifications Section 308-5.4.1 to read: Sprinkler heads shall be installed as designated on the drawings and per Parks and Recreation standard details.

3.07 CONTROLLER INSTALLATION: Add the following to Standard Specifications Section 308-5.3: The controller location, as shown on the plans, is diagrammatic. The final location of the controller shall be as approved by the Park Projects Inspector before installation. The Contractor shall coordinate the electrical service with this location. The controller shall be wall mounted within a 14" Neor vandal resistant enclosure, unless noted otherwise on the plan. Controller enclosure shall be located in shrub areas and/or adjacent to other hardware items. Enclosure shall be painted with the color of paint, color as approved; submit samples. A 2" thick concrete slab for maintenance access shall be provided, size approximately 18" sq. ft. Line, grade and dimensions as directed by the Park Projects Inspector.

Following establishment of the turf, the irrigation system shall be programmed to operate during the periods of minimal use of the project area (i.e., 11:00 p.m. through 6:00 a.m.).

3.08 WIRING: Add the following to Standard Specifications Section 308-5.5: All splice connections shall occur in a valve box. All wire runs between the valve and the controller shall be a continuous run with no splices unless noted otherwise on the plans.

All low voltage wiring splices shall be made-up as soldered connections, wrapped with a minimum of two (2) layers of electrical tape and sealed with Scotch-cot, Scotch-lok, Uni-pack, Penn-tite, or other similar type connectors are not acceptable.

3.09 FINISHING AND TESTING: Add the following to Standard Specifications Section 308-5.6.2: Centered all plastic pipe prior to pressure testing. Amend Standard Specifications Section 308-5.6.2 to read: Pressure test the main line minimum 2 hours at 150 PSI. Add the following to Standard Specifications Section 308-5.6.2: The entire system shall be operating properly before any planting operations commence.

3.10 COMPLETION CLEANING: Add the following to Standard Specifications Section 308: Upon completion of the work, Contractor shall smooth all ground surfaces, remove excess materials, rubbish, debris, etc., sweep adjacent streets, curbs, gutters, walkways and trails, and remove construction equipment from the premises.

SECTION 02480 - PLANTING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS: The provisions of the "Standard Specifications for Public Works Construction" shall apply except as modified herein.

1.02 SCOPE:

The work required is indicated on the drawings and includes, but is not necessarily limited to: soil preparation; finish grading (as distinguished from fine grading per Section 02210); planting trees; staking and staking trees; planting shrubs and groundcover; soil erosion control; maintenance; plant establishment; guarantees; and replacements.

1.03 SOILS TEST:

The Contractor shall notify the Park Projects Inspector upon completion of fine grading and prior to commencement of soil preparation work. The City will obtain agronomic soils tests for all planting areas after completion of fine grading and prior to start of soil preparation work. Tests will be performed by an approved agronomic soils testing laboratory and will include a fertility and suitability analysis with written recommendations for soil preparation. The soils report recommendations shall post plant fertilization program. The soils report recommendations shall take precedence over the minimum amendment and fertilizer application rates specified when they exceed the specified minimums. Contractor shall allow a minimum two week period for the soils testing work commencing upon acceptance of the fine grading work per Section 02210 by the Park Projects Inspector.

1.04 GUARANTEE:

A. All trees installed under the contract shall be guaranteed against any and all poor, inadequate or inferior materials and/or workmanship for a period of one (1) year following final acceptance.

B. During the guarantee period, any material found to be dead, missing, or in poor condition shall be replaced by the contractor within ten (10) days of written notification. Park and Recreation Department shall be the sole judge as to the condition of the material.

C. Replacement shall be made in accordance with City standards.

D. Material and labor involved in replacing plant material shall be provided by the contractor at no additional cost to the City.

1.05 INSPECTIONS:

Inspections will be required. The Contractor shall contact the Park Projects Inspector at least 48 hours (2 working days) in advance of an anticipated inspection. An inspection will be required at each of the steps listed below:

A. Upon completion of fine grading and prior to commencement of soil preparation, for acceptance of fine grading work and taking of soil samples.

B. Inspection of completed finish grading work following soil amendment work.

C. When container plants and/or bare root stock are spotted for planting, but before planting holes are excavated.

D. When planting and all other indicated or specified work has been completed.

E. During application of pre-emergent chemical.

F. At start of plant establishment period.

G. At end of the plant establishment period, prior to final acceptance of the project for maintenance by the City, this acceptance for maintenance will be confirmed in writing by the Park and Recreation Department.

1.06 SUBMITTALS:

A. The following written certifications are required to be submitted to the Park Projects Inspector upon delivery of the respective materials to the site:

Total Quantity of commercial fertilizers, by type. Total Quantity of soil amendments and conditioners, by type. Total Quantity of iron sulphates.

1.07 PLANT ESTABLISHMENT PERIOD: The length of the Plant Establishment Period shall be a minimum of one (1) year. See also Subsection 5.11 of this section regarding start of plant establishment period.

PART 2 - MATERIALS

2.01 GENERAL: All materials shall conform with Section 212 of the Standard Specifications except as modified herein.

2.02 FERTILIZER, SOIL AMENDMENTS AND CONDITIONERS: Add the following to Standard Specifications Section 212-1.2.3:

A. Planting Tablets: Lightly compressed, long-lasting, slow-release fertilizer tablets weighing 21 grams, with a potential acidity of not more than 5 percent by weight and having an analysis of 20-10-5 derived from the sources listed in the following guaranteed analysis:

GUARANTEED ANALYSIS: Total Nitrogen (N) 20% Derived from urea formaldehyde 7.0% water soluble nitrogen 13.0% water soluble nitrogen Available Phosphoric Acid (P₂O₅) 10% Derived from calcium phosphate Soluble Potash (K₂O) 5% Combined Calcium (Ca) 2.6% Derived from calcium phosphate Combined Sulfur (S) 1.6% Derived from ferrous and potassium sulfates Iron (expressed as elemental Fe) 35% Derived from ferrous sulfate

B. Commercial fertilizer shall bear the manufacturer's guaranteed statement of analysis and shall meet the following minimum requirements: 16% nitrogen, 6% phosphoric acid, and 8% potash.

C. Organic Soil Amendment: Shall be type 1 organic soil amendment, wood based product, nitrogen stabilized.

D. Soil Conditioners: Add to Standard Specifications, new Section 212-1.2.6: Inorganic conditioners shall be agricultural grade gypsum, soil sulfur and iron sulfate. Iron sulfate shall be ferric sulphate or ferrous sulphate in sulfate or granular form containing not less than 18.2% iron expressed as metallic iron, and shall be registered as an agricultural mineral with the State Department of Agriculture in compliance with Article 2 "Fertilizing Materials", Section 1000 of the Agriculture Code.

2.05 PLANTS:

A. Add the following to Standard Specifications Section 212-1.4.1: All plants shall be true to name, and one of each bundle or lot shall be tagged with the name and size of plants in accordance with the standards of practice recommended by the American Association of Nurserymen. The root condition of plants furnished in containers shall be determined by removal of earth from the roots of not less than two plants nor more than 2% of the total number of plants of



CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT. WRITTEN SPECIFICATIONS TRACT NO. 23407 REVERSE FRONTAGE. ACCOUNT NO. R-3088L SHEET 6 OF 7. HORIZ. SCALE: 1" = VERT. SCALE: 1" = INDEXED 8-17-90 JH

each species or variety except when container-grown plants are from several different sources; in which case, the roots of not less than two plants of each species or variety from each source shall be checked by the Park Projects Inspector at his option. The selection of plants to be checked will be made by the Park Projects Inspector.

All plants tendered unsuitable for planting shall be considered as samples, and replacements shall be provided at no additional cost. In case the sample plants are found to be defective, the entire lot or lots of plants represented by the defective samples will be rejected.

B. Amend the Standard Specifications Section 212-1.4.2 and 212-1.4.3: All trees and shrubs supplied by contractor shall be of the specified standard height and diameter set by the American Standard for Nursery Stock. The height of the trees shall be measured from the root crown to the last division of the terminal leader and the diameter shall be measured 1 1/2 inches above the crown roots. The trees shall stand erect without support.

C. Add to Standard Specifications, new Section 212-1.4.6: Rooted cuttings will also be acceptable.

D. Bare root stock shall conform to the American Nurseryman's Association standards. Minimum caliper shall be two (2) inch diameter and minimum height shall be twelve (12) feet.

2.06 BACKFILL MATERIAL:
Add the following to the Standard Specifications Section 212:

A. Top soil shall be free of noxious weed seed and shall be of a loam characteristic, fertile and friable.

B. Hoop shavings shall be leached nitrogen fertilized and shall be free of foreign matter.

C. Soil used for backfill of planting pits for container plants shall be enriched using the following blend per cubic yard (agronomic soil test recommendations to be reviewed prior to soil mixing):

60% site soil	3 lbs. gypsum
40% wood shavings	2 lbs. iron sulphate
2 lbs. commercial fertilizer	

Bare root stock backfill shall consist of 10% wood shavings and 90% site soil with fertilizer and soil conditioners as specified for container plants.

D. All soil backfill shall be bulk mixed, not individually mixed at each plant pit.

2.07 HEADERS, STAKES AND TIES:
A. Add the following to Standard Specifications Section 212-1.5.3:

(1) Tree stakes shall be straight-grained lodgepole pine, or City approved equal. Stakes shall be free from knots, checks, splits, or distortions.

(2) Tree ties shall be made from tire casing, 22" long by 3/4" wide, fastened to tree stake with two galvanized 5d roofing nails; each.

B. Add the following new section to Standard Specifications Section 212-1.5(d): Concrete Curbing - Concrete shall be 5 sack mix with a maximum slump test of four inches (4"). Provide sufficient concrete forming and stakes (maximum 3" o.c.) to provide continuous line without waving.

PART 3 - EXECUTION
3.01 GENERAL:
All work shall conform with Section 308 of the Standard Specification, except as modified herein.

3.02 WEED CONTROL MEASURES:
Add the following to Standard Specifications Section 308-2.4:

A. Upon completion of all fine grading work per Section 02210 Grading, and prior to soil preparation, perform weed control measures as follows:

1. Irrigate all areas designated to be planted for a minimum of 10 minutes per setting, two settings per day for seven days to germinate all weed seed possible.
2. Apply a contact weed killer and allow sufficient time to obtain complete kill of all weeds germinated.
3. Repeat step one above.
4. Repeat step two above.

3.03 SOIL PREPARATION:
Add the following to Standard Specifications Section 308-2.3:

A. All fine grading and mounding per Section 02210 and weed control measures shall be completed prior to soil preparation.

B. This work shall not commence until the agronomic soils test has been completed. Should 30 calendar days elapse between completion of soil preparation and commencement of planting, all areas shall be prepared again.

C. Planting areas with slopes 3:1 and steeper shall not be soil prepared. In lieu of soil preparation, such slopes will require fertilizer tablets for all plantings per Section 3.05, c. below. In all planting areas with gradients less than 3:1, a layer of soil amendments shall be spread and rototilled into the soil to a minimum depth of 4 inches, or as recommended by the soils report, so that the soil shall be loose, friable, and free from rocks, sticks, and other objects undesirable to planting.

D. The following soil amendments shall be added per 1,000 square feet to all planting areas with gradients less than 3:1 (agronomic soil test recommendations shall take precedence where these minimum amounts are exceeded):

- (1) 6 cubic yards organic amendment.
- (2) 15 pounds commercial fertilizer.
- (3) 100 pounds gypsum.
- (4) Soil sulfur per soils report.

3.04 FINISH GRADING:
The Contractor shall finish grade all planting areas filling as needed or removing surplus dirt, raking to remove all rocks and debris over 1 inch in diameter, and floating to a smooth uniform grade. All areas shall slope to drain. Flow lines shall be established to existing roads, curbs, sewers, and/or sidewalks as shown on the plans and as directed. All fill material placed within the top 12" from finish grade elevations in all planting areas shall be topsoil.

All landscape areas shall be finish graded, as distinguished from fine grading specified in Section 02210 to "dress out", maintain, and/or re-establish finish grades and flow lines as appropriate prior to amending the soil. Contractor shall call for inspection upon completion of finish grading work. Contractor shall not proceed with planting work until finish grades have been inspected and accepted by the Park Projects Inspector.

3.06 PLANTING:
A. Amend the Standard Specifications Section 308-4.5 to coordinate with Section 2.06 herein for specified backfill mix.

B. Add the following to the Standard Specification Section 308-4.5:

- (1) Soil surrounding planting pit shall be in a friable condition and moist to a depth of 8".
- (2) Backfill using specified soil mix to within 8" of finish grade. At this depth, place the plant fertilizer tablets Agriform 20-10-5, 21 grams each, or City approved equal. A minimum of 1 tablet for 1 gallon, 3 tablets for 5 gallons, 5 tablets for 15 gallons, and 8 tablets for a 24" box. Complete backfilling to finish grade.
- (3) Trees (other than relocated palms) shall be planted at such a depth that the crown roots bear the same relative position to finish grade as they did to the soils where they were grown. Backfill after planting shall be compacted carefully into place without injuring the roots of the tree or breaking up the ball of earth surrounding the roots.

C. Add the following to Standard Specifications Section 308-4.2:

- (1) Mulch and fertilize groundcover areas using 1.5 cubic yards of wood shavings and 5 lbs. of the specified commercial fertilizer per 1,000 square feet. Repeat fertilization at 30 day intervals throughout the duration of the contract up to 4 applications, after which decrease frequency to once every 90 days.
- (2) All groundcover and bare dirt areas are to be treated with a pre-emergent chemical (subject to approval by the Park Inspector prior to application). Chemicals are to be applied by a licensed Pest Control Agent. This treatment shall be applied at the following times during the contract: a) before planting, b) at beginning of plant establishment period, and c) at end of plant establishment period. The Park Projects Inspector, (714) 782-5223, shall be given a minimum of 48 hours (2 working days) notice prior to each application. No chemicals shall be applied other than in the presence of the Inspector.

3.07 TREE STAKING:
Amend the Standard Specifications Section 308-4.6.1 and 308-4.6.2 to read: Stake trees per Park and Recreation Department standard detail.

3.09 IRRIGATION:
Add the following to Standard Specifications Section 308-4.3:

A. It shall be the Contractor's responsibility to maintain a balanced watering program to ensure proper growth until final acceptance of the work.

B. Immediately after planting, apply water to each plant. Apply water in a moderate stream to the planting hole until the material about the roots is completely saturated from the bottom of the hole to the top of the ground.

C. Apply water in sufficient quantities and as often as seasonal conditions require to keep the planted areas moist at all times, well below the root system of plants.

D. Irrigation:

- (1) Contractor shall properly and completely maintain the irrigation system. A balanced water program shall be maintained to ensure proper germination and growth until final acceptance of the work. Plants which cannot be watered sufficiently with the irrigation system shall be watered by means of a hose.
- (2) All controllers are to have each station individually adjusted on a weekly basis. System shall be set considering the application rate each area is capable of receiving. The system shall operate on short intervals, with the cycle repeating at a later time to reduce runoff.

3.10 MAINTENANCE:
Amend the Standard Specifications Section 308-6 to read: All areas within the work limits of this contract shall be maintained by the contractor for the duration of the contract until final acceptance.

3.11 START OF PLANT ESTABLISHMENT: Add the following to Standard Specifications Section 308-5:

Criteria for Start of Plant Establishment Period:

- (1) The plant establishment period shall not start until all elements of the project that impact the landscape are completed in accordance with the contract documents. Projects will not be segmented into phases.
- (2) Permanent power to remote controllers shall be established.
- (3) All irrigation systems shall be tested and accepted.
- (4) Written acceptance of the City must be obtained to start the plant establishment period.
- (5) If the project maintenance fails to continuously meet standards required, the plant establishment period "day count" will be suspended and will not commence until the Contractor has corrected all deficiencies.

3.12 MAINTENANCE TASKS: Add the following to Standard Specifications Section 308-6:

A. General:
During the contract period provide all watering, weeding, mowing, fertilizing and cultivation and spraying necessary to keep the plants in a healthy growing condition and to keep the planted areas neat, edged, and attractive. All shrubs planted by the contractor shall be pinched and pruned as necessary to encourage new growth and to eliminate rank sucker growth. Old wilted flowers and dead foliage shall be immediately pinched or cut off. Do not prune trees without written approval of the City.

B. Iron Chlorosis:
After planting and during the plant establishment period, in the event that any plantings exhibit iron chlorosis symptoms, apply FE 138 Gelyo or equivalent at manufacturer's recommended rates.

C. Replacement Plantings:
During the plant establishment period, should the appearance of any planting installed by the Contractor indicate weakness, that plant shall be replaced immediately with a new, healthy plant. At the end of the plant establishment period, all plant materials shall be in a healthy, growing condition and spaced as indicated on the plans.

D. Fertilization:
The Contractor shall apply commercial fertilizer to all groundcover areas at a rate of 5 pounds per 1,000 square feet, at 30-day intervals. For 3 applications as a minimum, above and beyond the original soil preparation application.

E. Planting Establishment:
All planting areas that do not show a prompt establishment of plant material shall be replanted at 10-day intervals until the plant material is established. If a good rate of growth has not been demonstrated within 30 days of first planting/hydroseeding, the Contractor shall be responsible to determine the appropriate horticultural practices necessary to obtain good growth. The Contractor shall obtain agronomic soils testing of all areas not showing good growth and shall provide copies of the test results to the City to verify the appropriateness of all maintenance work performed. If additional soil amendments are needed, up to a maximum 25% beyond the application rate specified, such amendments shall be provided by the Contractor at no additional cost to the City.

F. Grading and Drainage:
During the plant establishment period all flow lines shall be maintained to allow for free flow of surface water. Displaced material which interferes with drainage shall be removed and placed as directed. Low spots and pockets shall be graded to drain properly.

- (1) Grading to planting areas shall be repaired immediately and throughout the plant establishment period. Depressions caused by vehicles, bicycles, or foot traffic shall be filled and leveled. Replant damaged areas.
- (2) All paved areas shall be washed and maintained in a neat and clean condition at all times.
- (3) All subsurface drains and inlets shall be periodically cleared of debris, leaves and trash and flushed with clear water to avoid build up of silt and debris.
- (4) Debris and trash shall be removed from the site weekly at a minimum.

G. Disease and Pest Control:
Add the following to Standard Specifications Section 308-6: Throughout the plant establishment period, all plants shall be maintained in a disease and pest free condition. A licensed pest control operator shall be retained by the Contractor to recommend and apply all pesticides, herbicides, and fungicides. Exterminate gophers, moles, and all other rodents, and repair damage.

3.13 END OF PLANT ESTABLISHMENT PERIOD:
A. When the contractor believes he has completed the plant establishment period and the entire project is ready for final acceptance, he shall request inspection of the project. The City will inspect the project for final acceptance. Deficiencies noted during inspection shall extend the plant establishment period until all are corrected.

B. All planting areas shall show a good rate of growth and shall be well established (filled in) plantings free of weeds. Bare areas will be unacceptable. Contractor shall provide sod or plantings from pits as necessary to fill in all bare areas. Such sod or plantings shall be planted a minimum of 10 days prior to the end of the plant establishment period and shall have roots "ant-in" to the native soil.

C. Final acceptance shall occur only upon written acceptance of the project for maintenance by the City.

3.14 CLEAN UP:
Upon completion of the work, the Contractor shall smooth all ground surfaces; remove excess materials, rubbish, debris, etc.; sweep adjacent streets, curbs, gutters; wash down all walkways, and trails; and remove construction equipment from the premises.

PART 1 - GENERAL
1.01 BIDDING EXAMINATION:
The General and Special Conditions of the Specification as well as the Plans shall be available for public examination at the City Engineer's Office, 2775 Main Street, Riverside, California.

1.02 CONTRACTOR:
The Contractor shall be a duly licensed contractor in the State of California, and shall be bonded for the full amount of the contract.

1.03 TIME OF BIDDING:
Bidding shall be received by the City Engineer's Office, 2775 Main Street, Riverside, California, from 8:00 a.m. to 5:00 p.m., Monday through Friday, until the date and time specified in the advertisement for bids.

1.04 TIME OF OPENING:
The bids shall be opened in public session at the City Engineer's Office, 2775 Main Street, Riverside, California, at 10:00 a.m. on the date and time specified in the advertisement for bids.

1.05 TIME OF RECEIVING:
The bids shall be received by the City Engineer's Office, 2775 Main Street, Riverside, California, until the date and time specified in the advertisement for bids.

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1.12 TIME OF RECEIVING:
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3.03 CONCRETE FINISH:
While the concrete is still in the plastic stage of set, the forming tools shall be applied to make the patterned surface. The pattern used shall be in accordance with the requirements of the Standard Specification for Concrete, Section 303-6.4. After finishing, apply color hardener.

A pigmented, heavy duty wax curing and finishing compound shall be applied. The wax compound to be matching color shall be applied uniformly to accordance with manufacturer's printed instructions.

The sealed surface shall be polished using a fine brush which removes residual dust from the surface.

Protect all finished concrete from graffiti. Contractor shall be responsible for protecting concrete wetness. A graffitied finish will not be acceptable.

Remove and replace defective concrete with new materials. Permission to patch any defective area shall not be a waiver of the Park and Recreation Department's right to require complete removal of defective work. Repatching does not restore quality and appearance of work.

No advertising impression, stamp, or mark of any description other than the specified pattern will be permitted in the cement finish.

3.04 CURING:
Per Standard Specification Section 303-6.5

END OF SECTION

PART 2 - MATERIALS
2.01 ALL MATERIALS:
All materials shall conform to Section 201 of the Standard Specifications, except as modified in the following subsections.

2.02 CONCRETE:
Concrete shall conform to Concrete Class use Table, Section 201-1, of the Standard Specifications and shall be a 5-sack mix, with a maximum 4-inch slump, 2,000 pounds per cubic yard ultimate compressive strength at 28 days. No admixtures, other than integral color admixture, will be allowed.

2.03 INTEGRAL COLOR:
The required color shall be Concrete Color (C-25) by T. M. Stafford, in City approved equal.

PART 3 - EXECUTION
3.01 GENERAL:
All work shall conform to the requirements of Section 303 of the Standard Specifications.

Install concrete and cement finish work true to lines, dimensions and levels.

Color conditioning admixture shall be added to the concrete using the Integral Color Method "B" per Std. Spec's Section 303-6.3.2(a).

3.02 PROTECTING CONCRETE:
Transport, place and spread in a manner to prevent segregation of aggregate. Reinforcing shall be supported by metal or plastic chairs. Concrete supports shall not be used. Reference Section 303-1.1.1, 303-6.2.

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END OF SECTION

the contractor shall call for inspection at specific steps in the construction process including those points in time when:

- 1) All sleeve and drainline installation is complete, but prior to backfill of trenches.
- 2) All form work is placed and all subgrade work is complete, but prior to pour.

Contractor shall notify the Park Projects Inspector, (714) 782-5223, a minimum of 48 hours prior to pouring any concrete.

Any work covered prior to inspection shall be opened to view by the Contractor at his expense if so directed by the Inspector.

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CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY: *[Signature]* DATE: 6/22/00
PRINCIPAL ENGINEER: *[Signature]* DATE: 6/22/00
TRAFFIC DIVISION: *[Signature]* DATE: 6/22/00
CHIEF P. W. ENGINEER: *[Signature]* DATE: 6/22/00

DESIGNED BY: *[Signature]* DRAWN BY: *[Signature]* CHECKED BY: *[Signature]*

WRITTEN SPECIFICATIONS
TRACT NO. 23407
REVERSE FRONTAGE

APPROVAL NO. R-3088L
SHEET 2 OF 2

HORIZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 10'

INDEXED 8-17-90