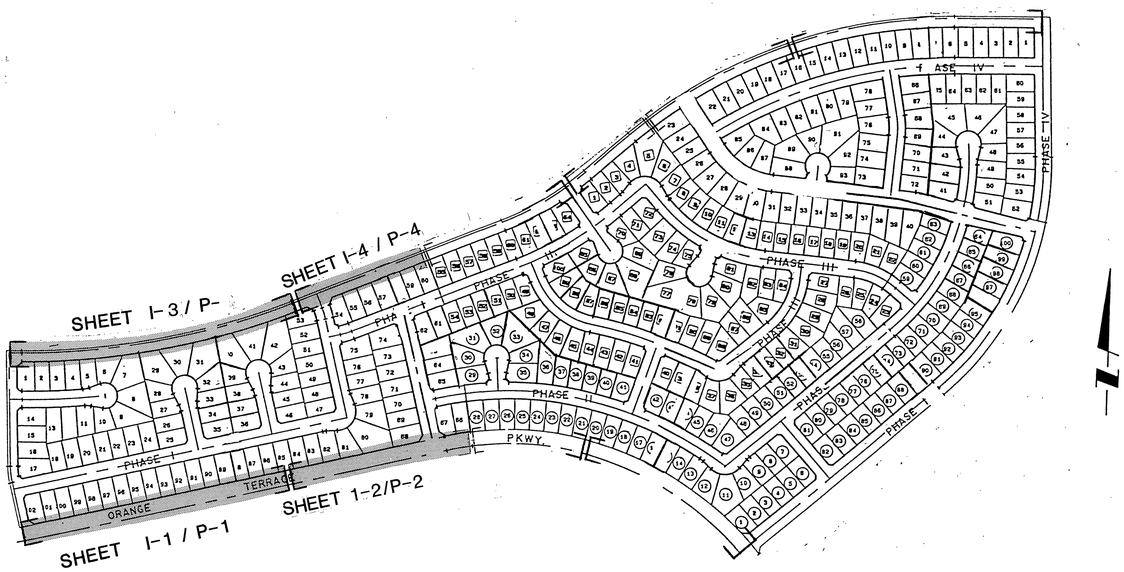


SIC CORPORATION
9030 WOOD ROAD RIVERSIDE, CA 92504
PROJECT MANAGER: MITCHELL SIEGAL (714) 780-7585
REVERSE FRONTAGE LANDSCAPE / IRRIGATION PLANS FOR

TRACT 22275 PHASE 1

ORANGE TERRACE PARKWAY & SIEGAL AVENUE

RIVERSIDE, CALIFORNIA

SHEET INDEX:

I-1	IRRIGATION PLAN	P-1	PLANTING PLAN
I-2	IRRIGATION PLAN	P-2	PLANTING PLAN
I-3	IRRIGATION PLAN	P-3	PLANTING PLAN
I-4	IRRIGATION PLAN	P-4	PLANTING PLAN
I-5	IRRIGATION DETAILS	P-5	PLANTING DETAILS
I-6	IRRIGATION SPECIFICATIONS	P-6	PLANTING SPECIFICATIONS
		P-7	PLANTING SPECIFICATIONS

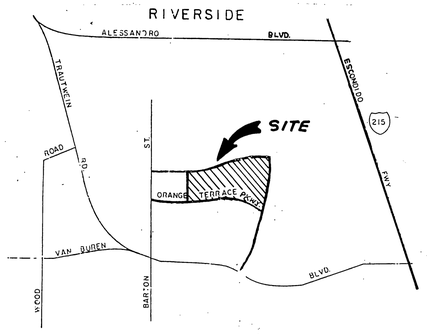
TOTAL SQUARE FOOTAGE IN R.O.W. 45835 S.F.
TOTAL NUMBER OF TREES IN R.O.W. BY SIZE 72, 15G

AGENCY SUBMITTAL

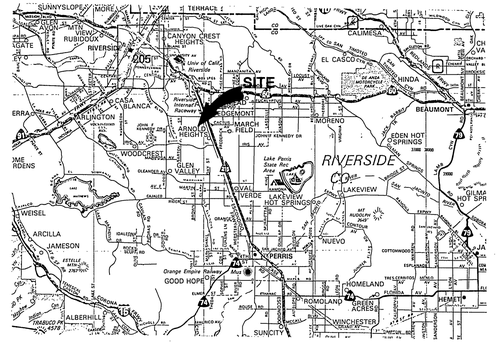
REVIEWED BY:
WESTERN MUNICIPAL WATER DISTRICT
SHEET 1 THRU 7
SUPV. DESGN. ENG. R.C.E. 21643
DATE: 11/14/89

- CONTROLLER STATION #
- VALVE SIZE
- TOTAL GPM PER VALVE

- PLANTING SYMBOL
- SIZE
- QUANTITY



VICINITY MAP



LOCATION MAP

elliott/maloney
landscape architecture • planning
6180 Brockton Avenue, Suite 201, Riverside, California 92506, (714) 369-0700

REGISTERED LANDSCAPE ARCHITECT
THADDEUS J. MALONEY NO. 2164
Expires 6-30-90
STATE OF CALIFORNIA

APPROVED BY	DATE	BY
PLANNING	CAD	2-8-90
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC		

MARK	REVISIONS	APPR.	DATE

DESIGNED BY ____ DRAWN BY ____ CHECKED BY ____

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	9/19/90	
PARK DEPARTMENT	2-19-90	
TRAFFIC DIVISION		
CHIEF F. W. ENGINEER		

APPROVED BY
PUBLIC WORKS DIRECTOR
DATE 3/2/90

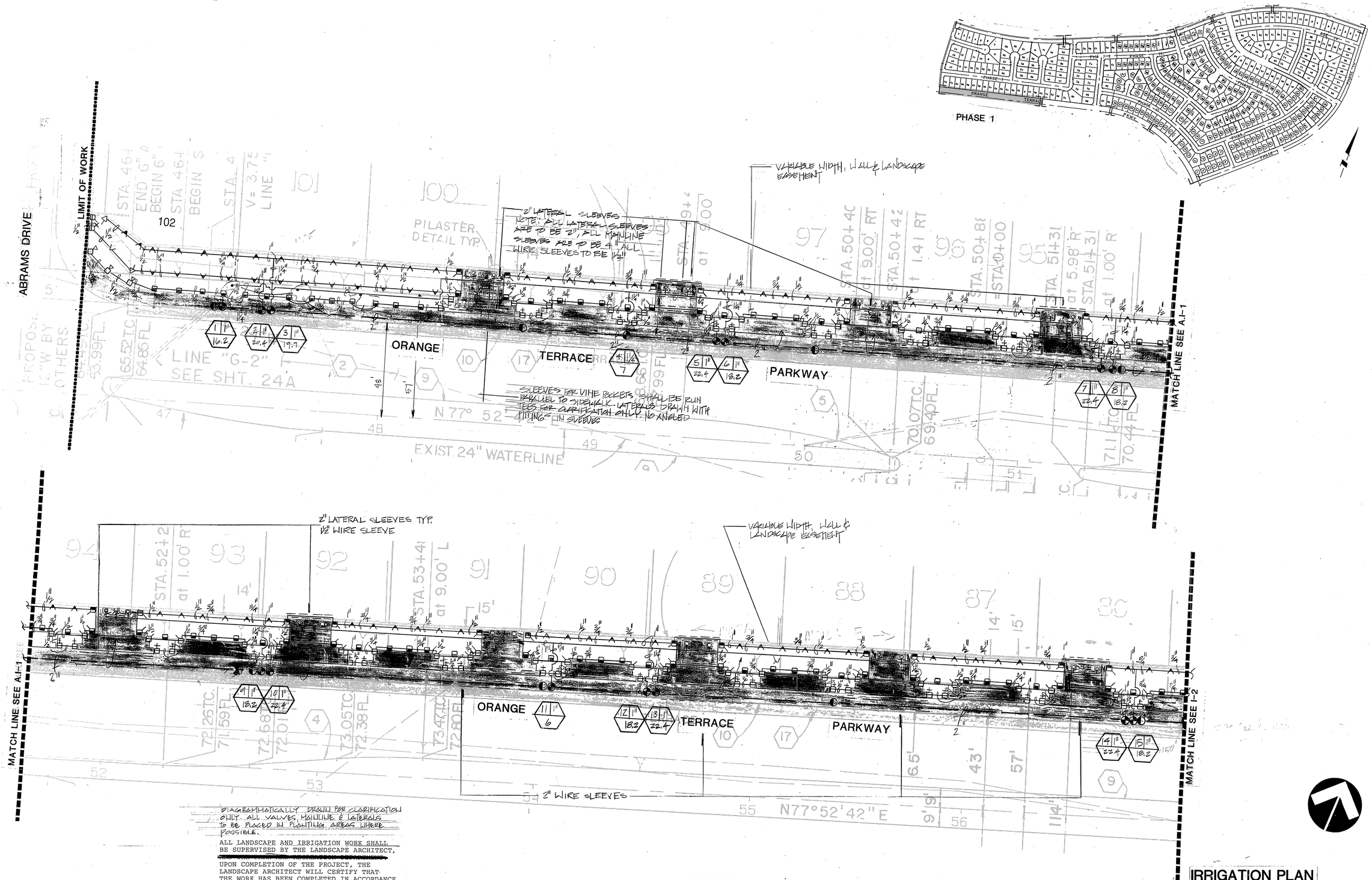
TRACT 22275-1

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

ACCOUNT NO.
R-3008 L
SHEET 1 OF 14
881287

PC 2645

INDEXED 3-16-90 GH



DIAGRAMMATICALLY DRAWN FOR CLARIFICATION ONLY. ALL VALVES, MAINLINE & LATERALS TO BE PLACED IN PLANTING AREAS WHERE POSSIBLE.

ALL LANDSCAPE AND IRRIGATION WORK SHALL BE SUPERVISED BY THE LANDSCAPE ARCHITECT, ~~AND THE PARK AND RECREATION DEPARTMENT~~ UPON COMPLETION OF THE PROJECT, THE LANDSCAPE ARCHITECT WILL CERTIFY THAT THE WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS. CONTACT THE PARK AND RECREATION DEPARTMENT BEFORE COMMENCING WORK.

FOR REVERSE FRONTAGE WALL CONSTRUCTION AND PLACEMENT DETAILS, SEE APPROVED STREET IMPROVEMENT PLANS.

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC		

REGISTERED LANDSCAPE ARCHITECT
TIMOTHY J. MALONEY NO. 2110
Signature
3-20-89
Date
STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY ____ DRAWN BY ____ CHECKED BY ____

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	
PARK DEPARTMENT	2-13-90	
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY Barry Bel
PUBLIC WORKS DIRECTOR
DATE 3/2/90

IRRIGATION PLAN

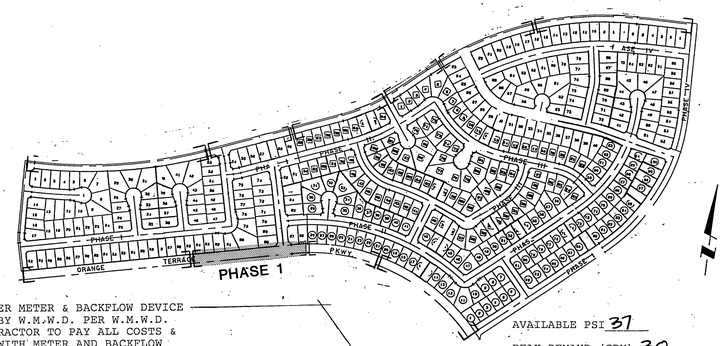
TRACT 22275 PHASE I
RIVERSIDE, CA
ORANGE TERRACE PARKWAY
S.I.C. CORPORATION

ACCOUNT NO. R-3008 L
I-1
SHEET 2 OF 14
881287

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

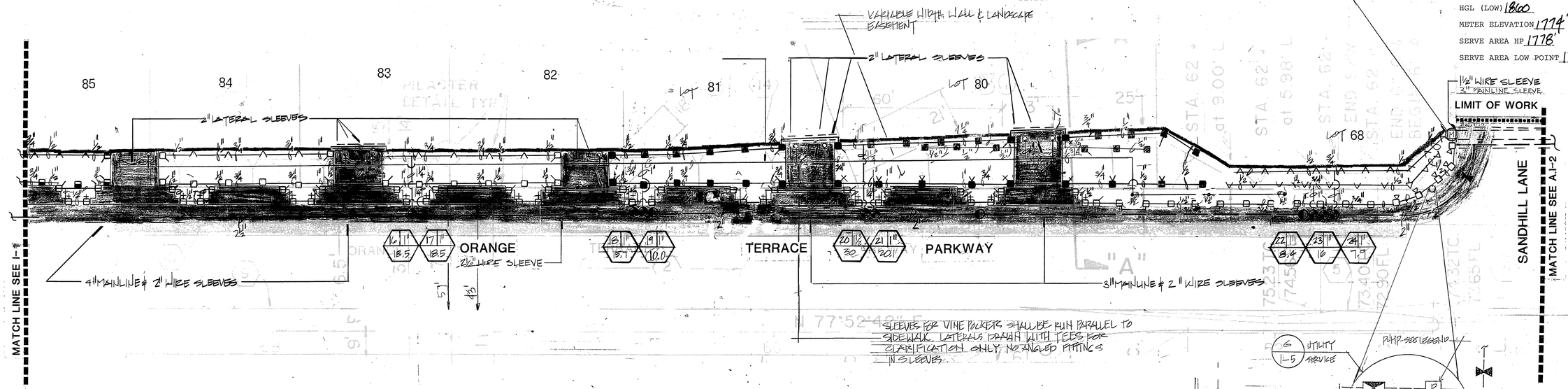
PC 2645

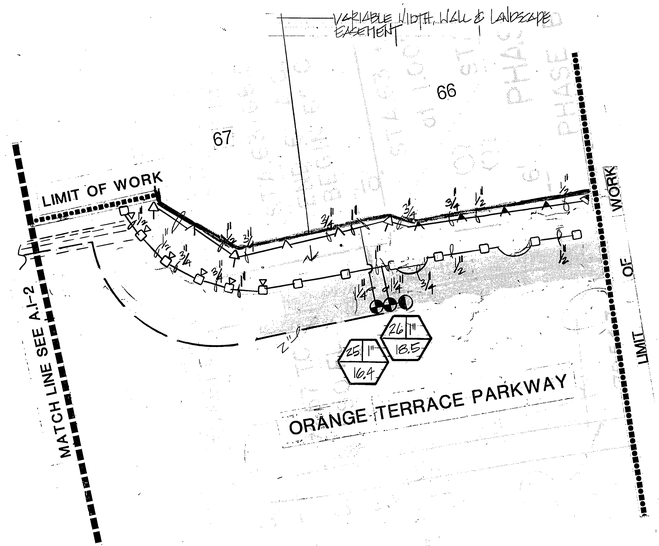
INDEXED 3-16-90 4H

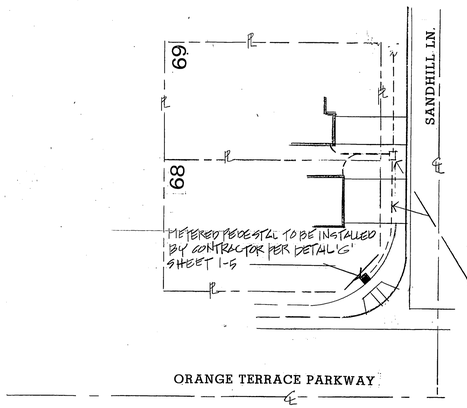


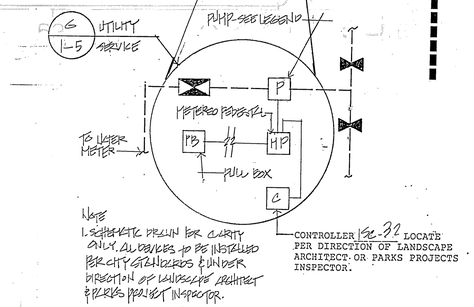
P.O.C.- 1" WATER METER & BACKFLOW DEVICE TO BE INSTALLED BY W.M.W.D. PER W.M.W.D. STANDARDS. CONTRACTOR TO PAY ALL COSTS & FEES ASSOCIATED WITH METER AND BACKFLOW DEVICE.

AVAILABLE PSI 37
PEAK DEMAND (GPM) 30
HGL (LOW) 1860
METER ELEVATION 1774'
SERVE AREA HP 1778'
SERVE AREA LOW POINT 1753'









NOTE
1. SCHEMATIC DRAWN FOR CLARITY ONLY. ALL DEVICES TO BE INSTALLED PER CITY STANDARDS & UNDER DIRECTION OF LANDSCAPE ARCHITECT & PARKS PROJECT INSPECTOR.

DIAGRAMMATICALLY DRAWN FOR CLARIFICATION ONLY. ALL VALVES, MAINLINE & LATERALS TO BE PLACED IN PLANTING AREAS WHERE POSSIBLE.

ALL LANDSCAPE AND IRRIGATION WORK SHALL BE SUPERVISED BY THE LANDSCAPE ARCHITECT. ~~AND THE PARK AND RECREATION DEPARTMENT.~~ UPON COMPLETION OF THE PROJECT, THE LANDSCAPE ARCHITECT WILL CERTIFY THAT THE WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS. CONTACT THE PARK AND RECREATION DEPARTMENT BEFORE COMMENCING WORK.

FOR REVERSE FRONTAGE WALL CONSTRUCTION AND PLACEMENT DETAILS, SEE APPROVED STREET IMPROVEMENT PLANS.

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC	W	1/18/90

REGISTERED LANDSCAPE ARCHITECT
TIMOTHY I. MALONEY NO. 2170
Signature 3-30-90
Date
STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY DRG DRAWN BY DRG CHECKED BY

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	
PARK DEPARTMENT	2-13-90	
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY Barry Beck
PUBLIC WORKS DIRECTOR
DATE 3/2/90

IRRIGATION PLAN

TRACT 22275 PHASE I
RIVERSIDE, CA
ORANGE TERRACE PARKWAY
S.I.C. CORPORATION

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

ACCOUNT NO. R-3008 L
I-2
SHEET 3 OF 14
881287

PC 2645

INDEXED 3-16-90 LH

ABRAMS DRIVE

LIMIT OF WORK

SIEGAL AVENUE

MATCH LINE SEE A.I-3

MATCH LINE SEE A.I-3

SIEGAL AVENUE

MATCH LINE SEE L-4

SLEEVE NOTE: TYPICAL
LATERAL SLEEVES - 2"
MAINLINE SLEEVES - 4"
WIRE SLEEVES - 1½"

SLEEVES FOR VINE PICKETS SHALL BE RUN PARALLEL TO SIDEWALK. LATERALS DRAWN WITH TEES ARE FOR CLARIFICATION ONLY. NO ANGLED FITTINGS IN SLEEVES.

PHASE 1

DIAGRAMMATICALLY DRAWN FOR CLARIFICATION ONLY. ALL VALVES, MAINLINE & LATERALS TO BE PLACED IN PLANTING AREAS WHERE POSSIBLE.

ALL LANDSCAPE AND IRRIGATION WORK SHALL BE SUPERVISED BY THE LANDSCAPE ARCHITECT.

UPON COMPLETION OF THE PROJECT, THE LANDSCAPE ARCHITECT WILL CERTIFY THAT THE WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS. CONTACT THE PARK AND RECREATION DEPARTMENT BEFORE COMMENCING WORK.

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APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC		

REGISTERED LANDSCAPE ARCHITECT
TIMOTHY V. MALONEY No. 2170
Expiratory 2-29-92
Date
STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY _____ DRAWN BY _____ CHECKED BY _____

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	LLL
PARK DEPARTMENT	2-13-90	RBS
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY _____
PUBLIC WORKS DIRECTOR
DATE 3/2/90

IRRIGATION PLAN

TRACT 22275 PHASE 1
RIVERSIDE, CA
SIEGAL AVE.
S.I.C. CORPORATION

ACCOUNT NO. R-3008 I-3

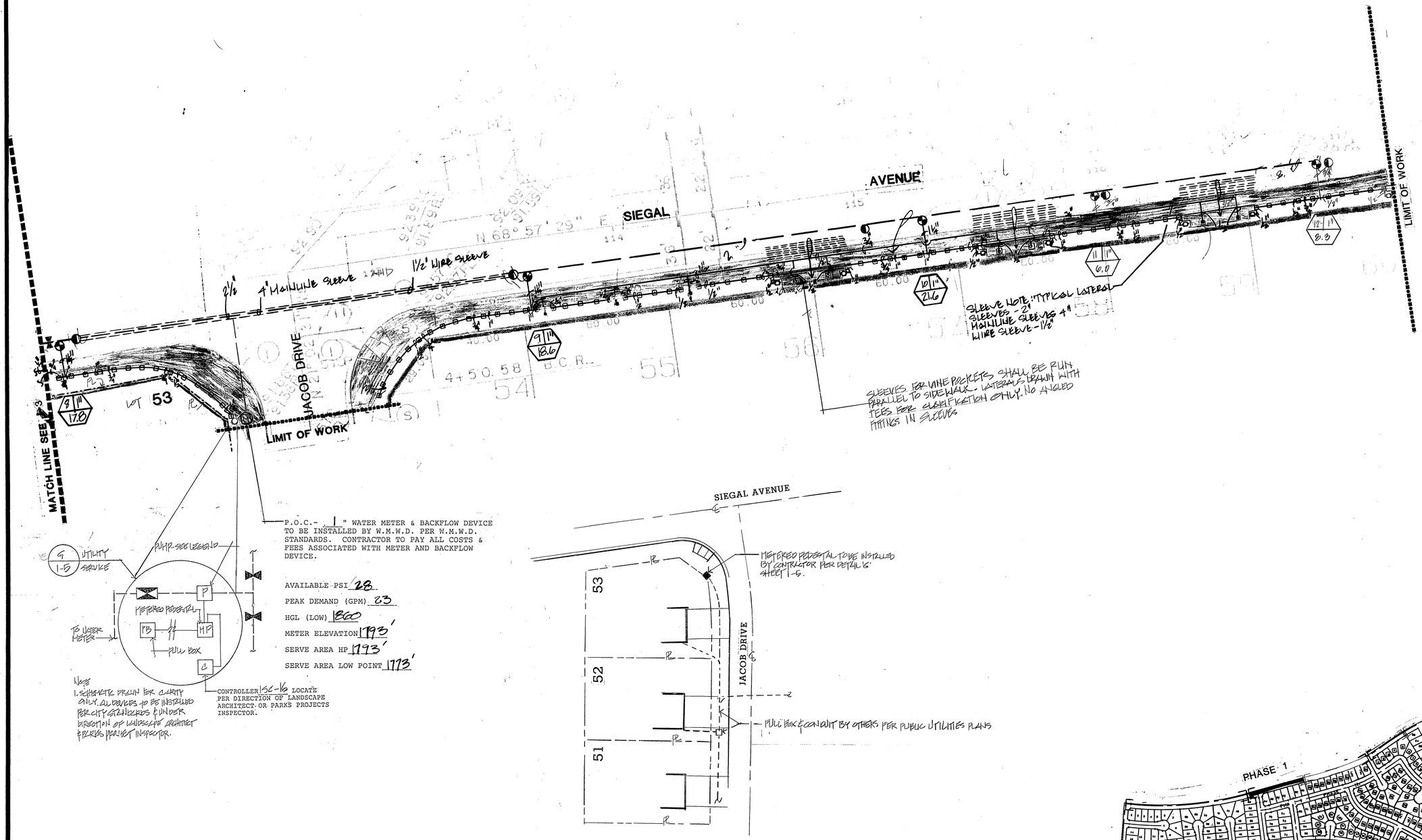
SHEET 4 OF 14

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

881287

PC 2645

INDEXED 3-16-90 GH



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FOR REVERSE FRONTAGE WALL CONSTRUCTION AND PLACEMENT DETAILS, SEE APPROVED STREET IMPROVEMENT PLANS.

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC	1/18/90	W

REGISTERED LANDSCAPE ARCHITECT — TIMOTHY L. MALONEY — STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY ____ DRAWN BY ____ CHECKED BY ____

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	[illegible]
PARK DEPARTMENT	2-13-90	B.O.
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY Barry Bed
PUBLIC WORKS DIRECTOR
DATE 3/2/90

IRRIGATION PLAN

TRACT 22275 PHASE I
RIVERSIDE, CA
SIEGAL AVE.
S.I.C. CORPORATION

ACCOUNT NO. R-3008 L
I-4
SHEET 5 OF 14

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

INDEXED 3-16-90 [illegible]

PC 2645

A CONTROLLER

B BACKFLOW DEVICE

NOTES: 1) EACH VALVE SHALL HAVE ITS OWN TEE OR ELL CONNECTION TO THE MAINLINE. NO MANIFOLD CONNECTIONS

2) PROVIDE MINIMUM 3' CLEAR DISTANCE BETWEEN VALVES.

3) INSTALL VALVE BOX IN A MANNER THAT BOX DOES NOT REST ON ANY IRRIGATION LINE.

NO SCALE

C AUTOMATIC CONTROL VALVE

D GATE VALVE

E QUICK COUPLER

F SPRAY HEAD

1 Electric Service Box (Pull Box), by others per Public Utilities plans.

2 Insulating bushing-by others per Public Utilities specs.

3 2" DB conduit by others per Public Utilities plans.

4 Service cables provided by Utilities Dept. Public Utilities Dept. will make service connections in Metered Pedestal (A) and Pull Box, contractor shall not make connection.

5 1" HDG conduit to be installed by contractor.

6 Customer load section.

7 Contractor to make connection in customer load section and provide 2-#8 and 1-#12 cu. THW wires to pump. Provide 2' of wire beyond end of conduit and I.D. neutral.

8 Contractor to make connection in customer load section and provide 2-#12 cu. THW wires to controller. Provide 2' of wire beyond end of conduit and I.D. neutral.

9 Metered Pedestal to be installed by contractor per E.U.S.E.R.C. drawing #308 Fig. 2B.

G UTILITY SERVICE

REVERSE FRONTAGE

GENERAL NOTES FOR PLAN CHECK

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.

Sym.	Model/Description	PSI	Radius	Pattern/GPM Q	H	1/3	VAN	SST	EST	Detail	Remarks
	RAINBIRD 1812-15 SERIES W/SAM	30	15	.93	1.85		VAR.			F	
	" " -12 SERIES W/SAM	30	12'	.65	1.30					↓	
	" " -10 SERIES W/SAM	30	10'	.39	.79	.52				↓	
	" " -10 SERIES W/SAM	30	10'	.39	.79					F	
	" " -15 SERIES W/SAM	30	15'		1.85		VAR.				
	" " -12 SERIES W/SAM	30	12'	.65	1.30					↓	
	" 1812-22Q-SS, 16Q-SLA W/SAM	30	20',16'	.81						F	
	" 1812-22H-SS, 16H-SLA W/SAM	30	20',16'		1.61						
	" 1812-, 15 EST W/SAM	30	4x15"						.61	↓	
	" 1804 P.C. ON PA80 ADAPTER 1402 P.C. FULL CIRCLE W/SAM	30	1'-3'				1,.5			F	
	RAINBIRD EFA-CP SERIES BRASS REMOTE CONTROL VALVES (SIZE PER PLAN)									C	
	REDUCED PRESSURE BACKFLOW PREVENTOR BY WMWD									H	PAID FOR BY CONTRACTOR - SEE PLANS
	NIBCO T-113 LINE SIZE GATE VALVE WITH BRONZE TURNING HANDLE (LINE SIZE)									D	
	RAINBIRD 44 LRC QUICK COUPLING VALVE WITH LOCKING RUBBER CAP									E	SPACED 100' MIN.
	RAIN BIRD ISC-32 & ISC-16 CONTROLLER, WALL MOUNTED WITHIN A LE MEUR									A & G	
	'V' ENCLOSURE WITH OPTIONS 'A' AND 'B', LOCATION AND INSTALLATION										
	OF 120V. JUNCTION BOX PER APPROVAL OF CITY PUBLIC UTILITIES DEPT.										
M	WATER METER BY W.M.W.D. CONTRACTOR TO PAY ALL ASSOCIATED COSTS										
	CLASS 200 PVC LATERAL LINES - 12" MIN COVER (PLAN SIZE)										
	PVC MAIN LINE - 18" MIN COVER (PLAN SIZE) PER SPECS.										
	SCH 40 PVC SLEEVES, EXTEND ENDS 12" BEYOND HARDSCAPE, 24" MIN. COVER (PLAN SIZE)										
A P	PUMP - MODEL #45BP110 P4-5.0-DEFGH *INSTALL PER MANUFACTURER'S RECOMMENDATIONS &										AVAILABLE FROM S. CAL. PUMP
B P	PUMP - MODEL #45BP110 P4-5.0-DEFGH INSTALL ON 4" THICK CONC. SLAB. ENCLOSE IN 24" x 36" x 42" PUMP SHELTER BY LE MEUR, PHONE #(714) 822-5100										SALES, PHONE # 714/839-3906

IRRIGATION LEGEND

PRESSURE TEST/COVERAGE NOTE

1. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT AND CO-ORDINATE ALL OBSERAVATIONS. CONTRACTOR SHALL REQUEST OBSERVATIONS BY THE LANDSCAPE ARCHITECT 48 HOURS (MIN.) PRIOR TO AN OBSERVATION.

   A. THE MAINLINE AND POC SHALL BE PRESSURE TESTED (PRIOR TO BACKFILL) AT NOT LESS THAN 150 PSI, FOR NOT LESS THAT TWO (2) HOURS AND PROVEN WATER TIGHT. THE TEST SHALL BE MADE IN THE PRESENCE OF THE LANDSCAPE ARCHITECT, SIGNED AND DATED.

   LANDSCAPE ARCHITECT__________ DATE______

   B. FINAL COVERAGE OBSERVATION - UPON COMPLETION OF THE IRRIGATION SYSTEMS, CONTRACTOR SHALL PERFORM A COVERAGE TEST WITH THE LANDSCAPE ARCHITECT ON ALL SYSTEMS TO VERIFY 100% DOUBLE COVERAGE. THE CONTRACTOR SHALL PERFORM ALL WORK AND FURNISH ALL MATERIALS NECESSARY TO CORRECT ANY INADEQUACIES AND ADJUST ARC OF SPRAY TO PREVENT OVERSPRAY.

   LANDSCAPE ARCHITECT__________ DATE______

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC	1/18/90	W

H BACKFLOW DEVICE

IRRIGATION DETAILS

REGISTERED LANDSCAPE ARCHITECT TIMOTHY I. MALONEY NO. 2110 STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY______ DRAWN BY______ CHECKED BY______

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	WLL
PARK DEPARTMENT	2-13-90	BS.
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY
PUBLIC WORKS DIRECTOR
DATE 3/2/90

TRACT 22275 PHASE 1
RIVERSIDE, CA
S.I.C. CORPORATION

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

ACCOUNT NO. R-3008 L

I-5

SHEET 6 OF 14

881287

PC 2645

INDEXED 3-16-90

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:

~~Site Clear and Grub 02110~~
~~Site Grading 02210~~
~~Selected Site Demolition 02111~~
Planting 02480
~~Electrical 16530~~

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 items different than those specified is requested. Notarized certificate must be submitted by plastic pipe and fitting manufacturer indicating that material complies with specifications, unless material has been previously approved.

Material list shall be submitted using the following format:

Item	Description	Manufacturer	Model No.
1	Pressure Supply Line	Lasco	Sch. 40
2	Lawn Head	Rainbird	2400
etc.	etc.	etc.	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, pavement, 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 previously noted corrections, or without preparing the system for inspection, the inspection will be cancelled and the Contractor back 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 up 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 ends of lines capped 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 mainline 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 print is 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. Spare parts lists and related maufacturer'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. 4% 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. REPRODUCIBLE SEPIA PRINTS

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. When 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 judgement 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 therefore upon demand.

PROJECT: ______________
LOCATION: ______________
____

SIGNED: ______________
ADDRESS: ______________
____
PHONE: ______________

C. After the system has been completed, the Contractor shall instruct the Parks 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 City's satisfaction by the Contractor without any additional expense to 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 add: "All fittings for steel pipe shall be 250 pound rated galvanized malleable iron, banded 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 tees and ells shall be manufactured in injection molds that are side gated. All threaded nipples shall be standard weight schedule 80 with molded threads.

~~Amend first sentence of Standard Specification Section 212-2.1.4 to read: "All rubber gasket PVC pipe, couplings, and fittings shall conform to ASTM D 2241 Type 1, Grade 1, 2000 PSI design stress"; and add the following to the section: "Couplings, rubber gaskets, and fittings shall be as approved by the pipe manufacturer. Ring-type rubber gasket couplings shall permit a five (5) degree deflection of the pipe at each coupling (2-1/2 degrees each side) without exfiltration or infiltration, cracking or breaking."~~

~~D. Asbestos Cement Pipe:~~

~~Add the following to Standard Specifications Section 212-2.1.6: Fittings for A.C.P. connection laterals shall be cast iron tees and bossed couplings except as follows:~~

~~(1) Double strap service clamps with rubber seals and flat bronze straps may be used for connections of 50 percent or less than the diameter of pipe.~~

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

2.03 VALVES AND VALVE BOXES:

~~A. Manual Control Valves:~~

~~Add the following to Standard Specifications Section 212-2.2.3: Anti-siphon-type valves shall be all bronze with swivel-type replaceable seating members and an approved vacuum breaker as an integral part of assembly.~~

B. Remote Control Valves:

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

Valve solenoid 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 chatter 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.

C. 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.

D. Gate Valves:

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

E. 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)2") 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 WHWD.

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. 12GA COMMON 14GA CONTROL

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 MOUNT IN A LE MEUR ENCLOSURE.

2.07 IRRIGATION HEADS:

All irrigation heads shall be as shown on the plans and shall conform with Section 212-2.4 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.

In the event any equipment or methods indicated on the drawings or in specifications is in conflict with local codes, immediately notify the inspector prior to installing. If this notification is not provided, the Contractor shall assume full responsibility for the cost of all revisions necessary to comply with code.

D. Grades:

Before starting work of this section, the contractor shall obtain the written acceptance of the City of the fine 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 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 sepia 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 trimmed, making a clean cut through the roots. 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 limits 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 pipe. 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. RCV, 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 shrub areas whenever possible. ~~No valves or valve boxes shall be installed within a designated athletic playing field.~~

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 Le Meur vandal resistent enclosure, unless noted otherwise on the plan. Controller enclosure shall be located in shrub areas and/or adjacent to other hardscape items. Enclosure shall be painted with two coats of paint, color as approved; submit samples. A 4" thick concrete slab for maintenance access shall be provided, size approximately 15 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 plan.

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-coat. 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: Centerload all plastic pipe prior to pressure testing. Amend Standard Specifications Section 308-5.6.2 to read: Pressure test the mains - 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.

END OF SECTION

BJ/0017o/c
05/12/87

Irrigation design is based on * psi available water pressure at * gpm. Systems are designed to a maximum psi. Contractor shall verify working water pressure prior to construction. Should a discrepancy exist, notify Landscape Architect prior to beginning construction.

* SEE EACH P.O.C. FOR THIS INFORMATION

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC		

REGISTERED LANDSCAPE ARCHITECT
TIMOTHY I. MALONEY NO. 2110
Signature
3-20-88
Date
STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY______ DRAWN BY______ CHECKED BY______ FREDD

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	WE
PARK DEPARTMENT	2-13-90	BB
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY [signature]
PUBLIC WORKS DIRECTOR
DATE 3/2/90

IRRIGATION SPECIFICATIONS

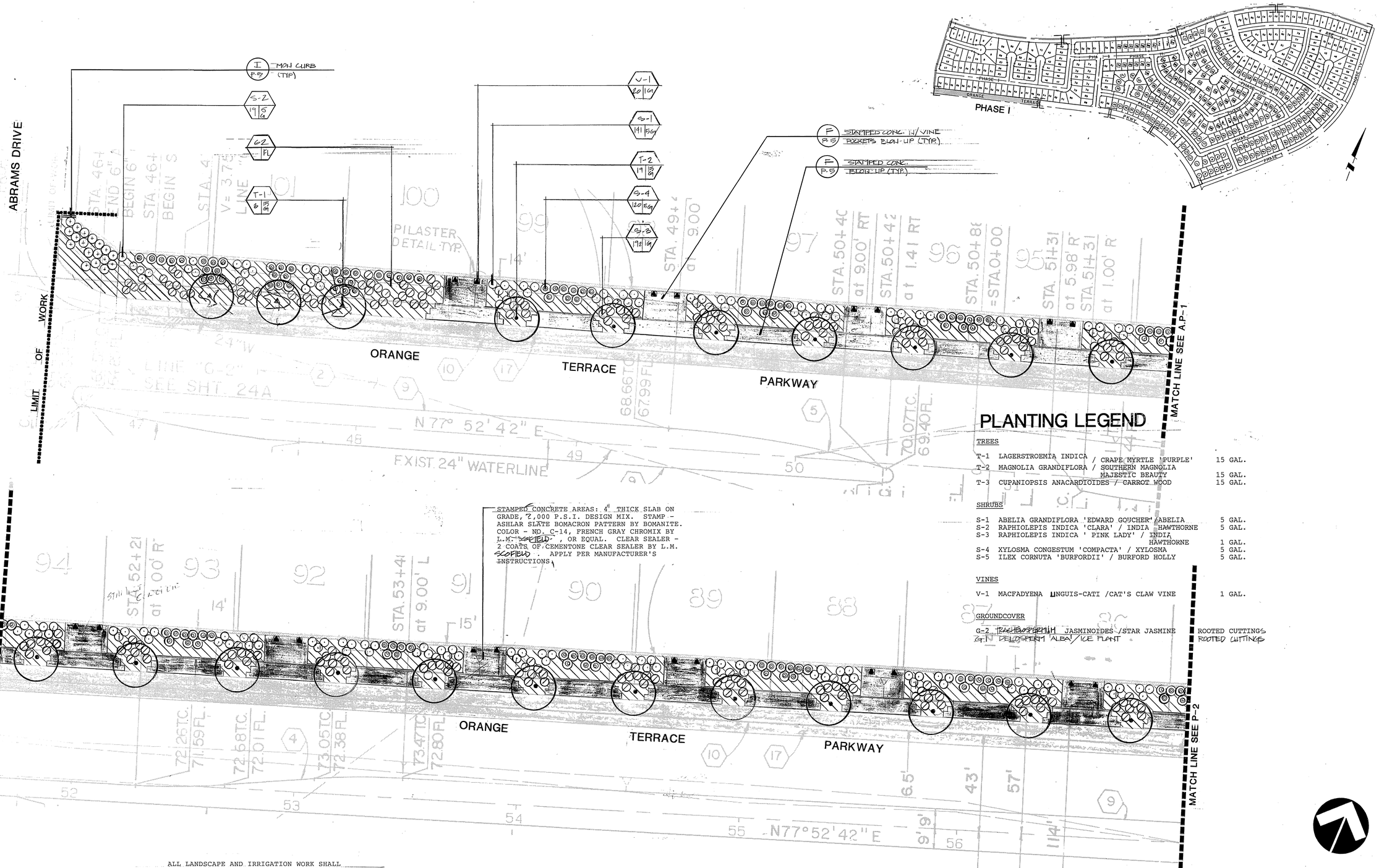
TRACT 22275 PHASE I
RIVERSIDE, CA
S.I.C. CORPORATION

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

ACCOUNT NO. R-3008 L
I-6
SHEET 7 OF 14
881287

PC 2645

INDEXED 3-16-90 4H



PLANTING LEGEND

TREES

T-1	LAGERSTROEMIA INDICA / CRAPE MYRTLE 'PURPLE'	15 GAL.
T-2	MAGNOLIA GRANDIFLORA / SOUTHERN MAGNOLIA MAJESTIC BEAUTY	15 GAL.
T-3	CUPANIOPSIS ANACARDIOIDES / CARROT WOOD	15 GAL.

SHRUBS

S-1	ABELIA GRANDIFLORA 'EDWARD GOUCHER' / ABELIA	5 GAL.
S-2	RAPHIOLEPIS INDICA 'CLARA' / INDIA HAWTHORNE	5 GAL.
S-3	RAPHIOLEPIS INDICA ' PINK LADY' / INDIA HAWTHORNE	1 GAL.
S-4	XYLOSMA CONGESTUM 'COMPACTA' / XYLOSMA	5 GAL.
S-5	ILEX CORNUTA 'BURFORDII' / BURFORD HOLLY	5 GAL.

VINES

V-1	MACFADYENA UNGUIS-CATI /CAT'S CLAW VINE	1 GAL.

GROUNDCOVER

G-2	TRACHELOSPERMUM JASMINOIDES /STAR JASMINE	ROOTED CUTTINGS
G-1	DELOSPERM 'ALBA' / ICE PLANT	ROOTED CUTTINGS

STAMPED CONCRETE AREAS: 4" THICK SLAB ON GRADE, 2,000 P.S.I. DESIGN MIX. STAMP - ASHLAR SLATE BOMACRON PATTERN BY BOMANITE. COLOR - NO. C-14, FRENCH GRAY CHROMIX BY L.M. SCOFIELD, OR EQUAL. CLEAR SEALER - 2 COATS OF CEMENTONE CLEAR SEALER BY L.M. SCOFIELD. APPLY PER MANUFACTURER'S INSTRUCTIONS.

ALL LANDSCAPE AND IRRIGATION WORK SHALL BE SUPERVISED BY THE LANDSCAPE ARCHITECT. ~~[illegible]~~ UPON COMPLETION OF THE PROJECT, THE LANDSCAPE ARCHITECT WILL CERTIFY THAT THE WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS. CONTACT THE PARK AND RECREATION DEPARTMENT BEFORE COMMENCING WORK.

FOR REVERSE FRONTAGE WALL CONSTRUCTION AND PLACEMENT DETAILS, SEE APPROVED STREET IMPROVEMENT PLANS.

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC		

REGISTERED LANDSCAPE ARCHITECT — TIMOTHY MALONEY NO. 2110 — Signature — Date — STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY ____ DRAWN BY ____ CHECKED BY ____

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	WLK
PARK DEPARTMENT	2-13-90	BB
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY Barry Beal
PUBLIC WORKS DIRECTOR
DATE 3/2/90

TRACT 22275 PHASE I
RIVERSIDE, CA
ORANGE TERRACE PARKWAY
S.I.C. CORPORATION

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

ACCOUNT NO. R-3008 L
P-1
SHEET 8 OF 14
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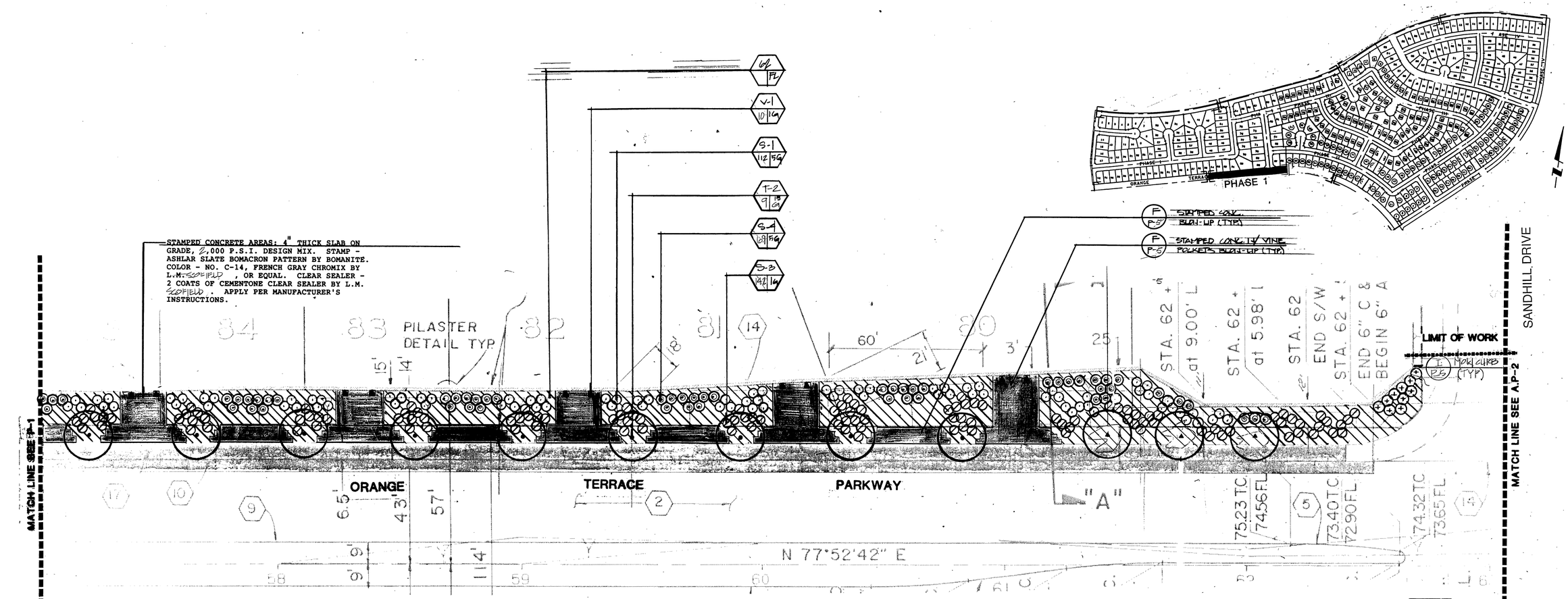
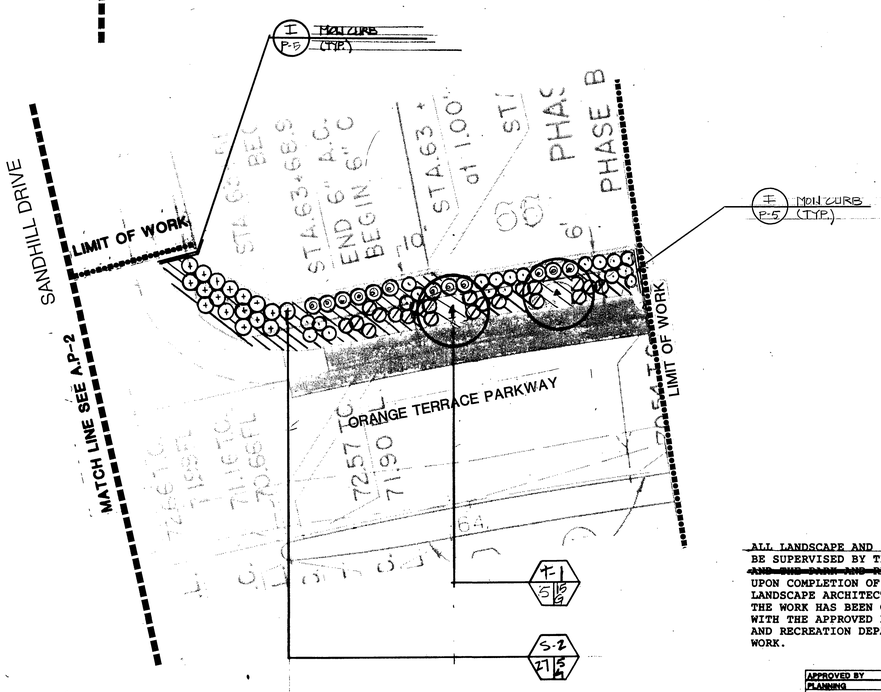
INDEXED 3-16-90 LFH





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FOR REVERSE FRONTAGE WALL CONSTRUCTION AND PLACEMENT DETAILS, SEE APPROVED STREET IMPROVEMENT PLANS.

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC		

REGISTERED LANDSCAPE ARCHITECT — TIMOTHY L. MALONEY NO. 2170 — STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY ____ DRAWN BY ____ CHECKED BY ____

PLANTING PLAN

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	LHK
PARK DEPARTMENT	2-13-90	BB
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY Barry Bed
PUBLIC WORKS DIRECTOR
DATE 3/2/90

TRACT 22275 PHASE I
RIVERSIDE, CA
ORANGE TERRACE PARKWAY
S.I.C. CORPORATION

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

ACCOUNT NO. R-3008 L
P-2
SHEET 9 OF 14

PC 2645

INDEXED 3-16-90 LH

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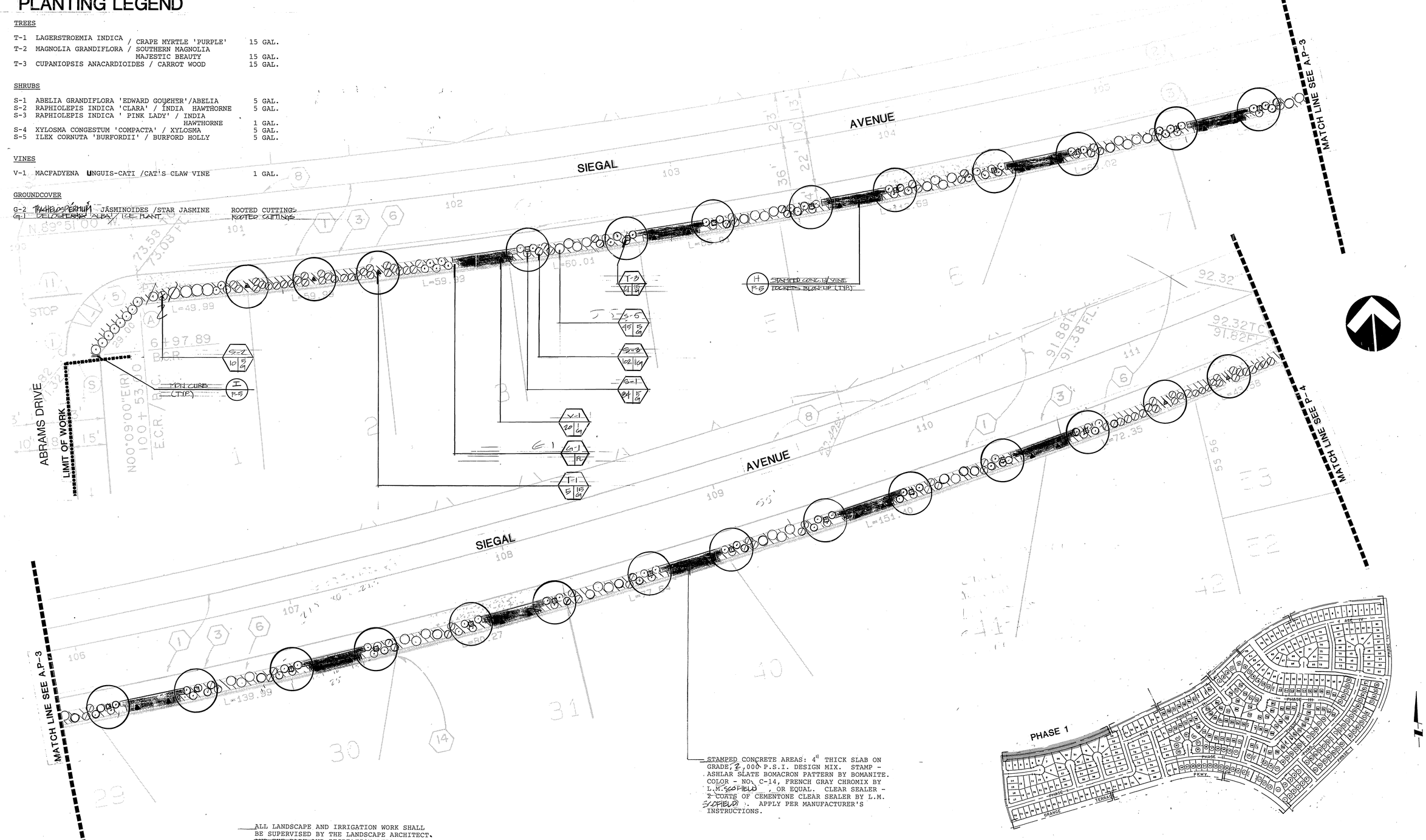

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FOR REVERSE FRONTAGE WALL CONSTRUCTION AND PLACEMENT DETAILS, SEE APPROVED STREET IMPROVEMENT PLANS.

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC		

REGISTERED LANDSCAPE ARCHITECT — TIMOTHY I. MALONEY NO. 2110 — Signature — Date — STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY ____ DRAWN BY ____ CHECKED BY ____

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	WLK
PARK DEPARTMENT	2-13-90	BRS
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY Barry Beck
PUBLIC WORKS DIRECTOR
DATE 3/2/90

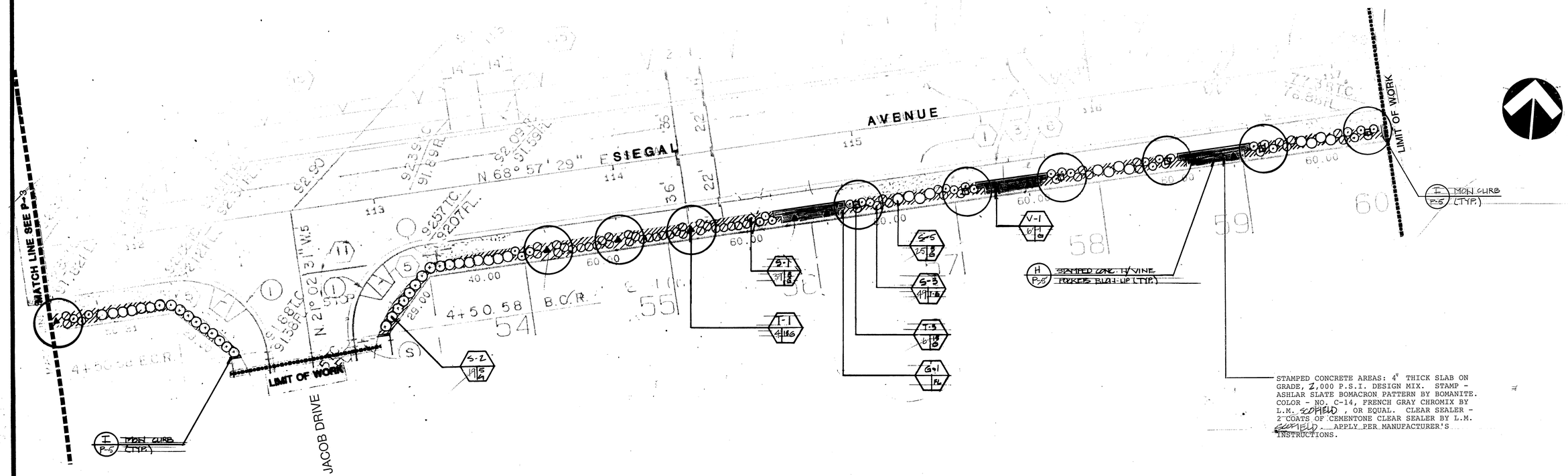
PLANTING PLAN

TRACT 22275 PHASE I
RIVERSIDE, CA
SIEGAL AVE.
S.I.C. CORPORATION

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

ACCOUNT NO. R-3008 L
P-3
SHEET 10 OF 14
881287

INDEXED 3-16-90 4H



STAMPED CONCRETE AREAS: 4" THICK SLAB ON GRADE, 2,000 P.S.I. DESIGN MIX. STAMP - ASHLAR SLATE BOMACRON PATTERN BY BOMANITE. COLOR - NO. C-14, FRENCH GRAY CHROMIX BY L.M. SCOFIELD, OR EQUAL. CLEAR SEALER - 2 COATS OF CEMENTONE CLEAR SEALER BY L.M. SCOFIELD. APPLY PER MANUFACTURER'S INSTRUCTIONS.

PLANTING LEGEND

TREES

T-1	LAGERSTROEMIA INDICA / CRAPE MYRTLE 'PURPLE'	15 GAL.
T-2	MAGNOLIA GRANDIFLORA / SOUTHERN MAGNOLIA MAJESTIC BEAUTY	15 GAL.
T-3	CUPANIOPSIS ANACARDIOIDES / CARROT WOOD	15 GAL.

SHRUBS

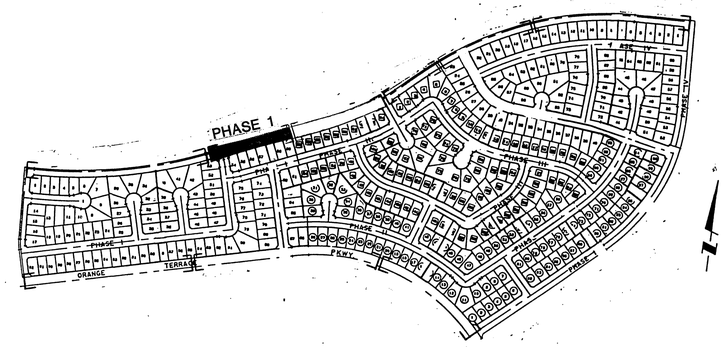
S-1	ABELIA GRANDIFLORA 'EDWARD GOUCHER'/ABELIA	5 GAL.
S-2	RAPHIOLEPIS INDICA 'CLARA' / INDIA HAWTHORNE	5 GAL.
S-3	RAPHIOLEPIS INDICA ' PINK LADY'' / INDIA HAWTHORNE	1 GAL.
S-4	XYLOSMA CONGESTUM 'COMPACTA' / XYLOSMA	5 GAL.
S-5	ILEX CORNUTA 'BURFORDII' / BURFORD HOLLY	5 GAL.

VINES

V-1	MACFADYENA UNGUIS-CATI /CAT'S CLAW VINE	1 GAL.

GROUNDCOVER

G-2	TRACHELOSPERMUM JASMINOIDES /STAR JASMINE	ROOTED CUTTINGS
G-1	DELOSPERMA 'ALBA' / ICE PLANT	ROOTED CUTTINGS



ALL LANDSCAPE AND IRRIGATION WORK SHALL BE SUPERVISED BY THE LANDSCAPE ARCHITECT. ~~[illegible]~~ UPON COMPLETION OF THE PROJECT, THE LANDSCAPE ARCHITECT WILL CERTIFY THAT THE WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS. CONTACT THE PARK AND RECREATION DEPARTMENT BEFORE COMMENCING WORK.

FOR REVERSE FRONTAGE WALL CONSTRUCTION AND PLACEMENT DETAILS, SEE APPROVED STREET IMPROVEMENT PLANS.

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC		

REGISTERED LANDSCAPE ARCHITECT
TIMOTHY I. MALONEY NO. 2110
STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY ____ DRAWN BY ____ CHECKED BY ____

PLANTING PLAN

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	[illegible]
PARK DEPARTMENT	2-13-90	[illegible]
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY [signature]
PUBLIC WORKS DIRECTOR
DATE 3/2/90

TRACT 22275 PHASE I
RIVERSIDE, CA
SIEGAL AVE.
S.I.C. CORPORATION

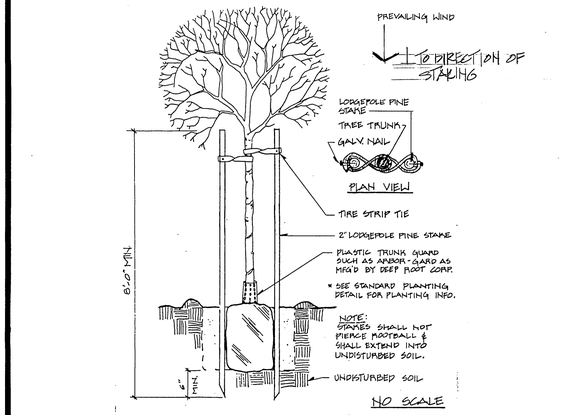
ACCOUNT NO. R-3008 L
P-4
SHEET 11 OF 14
881287

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

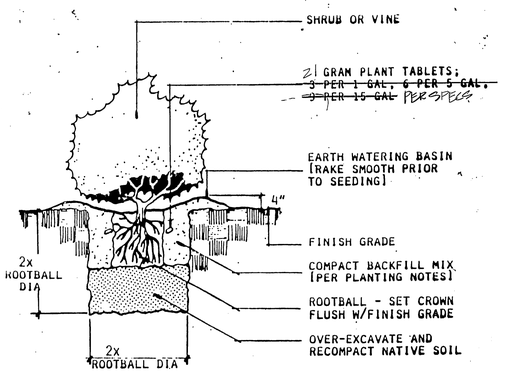
PC 2645

INDEXED 3-16-90 [illegible]

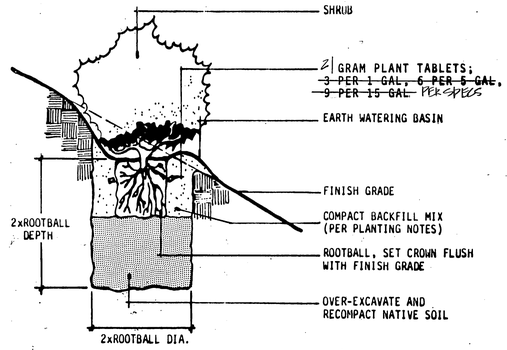
A | TREE PLANTING



B | SHRUB PLANTING



C | SHRUB PLANTING ON SLOPE

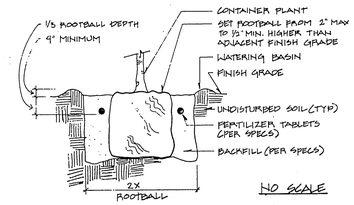


D | PLANTING DETAIL

GENERAL PLANTING NOTES

1) Contact the Park Project Inspector at 782-7223 48 hours prior to installing any plant material.
2) Trees planted in turf areas shall be maintained with a minimum 12" radius around tree free from turf throughout the maintenance period.
3) Watering basins may be removed after the maintenance period.
4) For staking information as applicable, refer to standard staking detail.
5) For guying information as applicable, refer to standard guying detail.
6) For specification information, refer to City of Riverside Park and Recreation Department Standard Specifications sections 02480/02481.
7) Provide Fertilizer Tablets as follows:

1 gallon plant	2 tablets
5 gallon plant	3 tablets
15 gallon plant	5 tablets
24" box plant	8 tablets

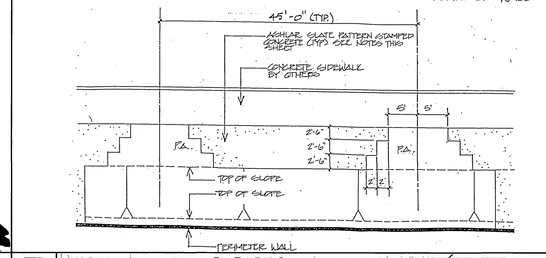


E | PLANTER DETAIL

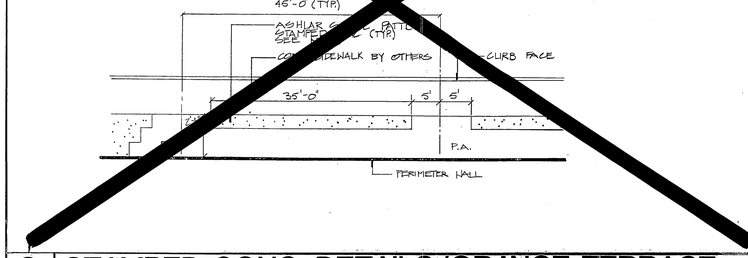
Botanical Name / Common Name	Size	Detail	Remarks: MIN HEIGHT	Remarks: MIN SPREAD
TREES				
T-1 LAGERSTROEMIA INDICA / CRAPE MYRTLE 'PURPLE	15 GAL.	A	7'-8"	2'-3"
T-2 MAGNOLIA GRANDIFLORA / SOUTHERN MAGNOLIA 'MAJESTIC BEAUTY'	↓	A	7'-8"	2'-3"
T-3 CUPANIOPSIS ANACARDIOIDES / CARROT WOOD	↓	A	7'-8"	2'-3"
SHRUBS				
S-1 ABELIA GRANDIFLORA 'EDWARD GOUCHER' / ABELIA	5 GAL.	B		
S-2 RAPHIOLEPIS INDICA 'CLARA' / INDIA HAWTHORNE	5 GAL.	B		
S-3 RAPHIOLEPIS INDICA 'PINK LADY' / INDIA HAWTHORNE	1 GAL.	B		
S-4 XYLOSMA CONGESTUM 'COMPACTA' / XYLOSMA	5 GAL.	B,C		
S-5 ILEX CORNUTA 'BURFORDII' / BURFORD HOLLY	5 GAL.	B		
VINES				
V-1 MACFADYENA UNGUIS-CATI / CAT'S CLAW VINE	1 GAL.			
GROUNDCOVERS				
G-1 DELOSPERMA 'ALBA' / ICE PLANT	ROOTED CUTTING		PLANTED 12" O.C., TRIANGULAR SPACING	
G-2 TRACHELOSPERMUM JASMINOIDES / STAR JASMINE	ROOTED CUTTING		PLANTED 12" O.C., TRIANGULAR SPACING	

PLANTING LEGEND

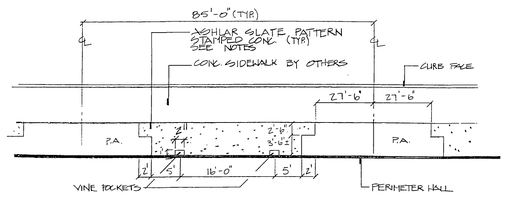
F | STAMPED CONC. DETAILS / ORANGE TERRACE



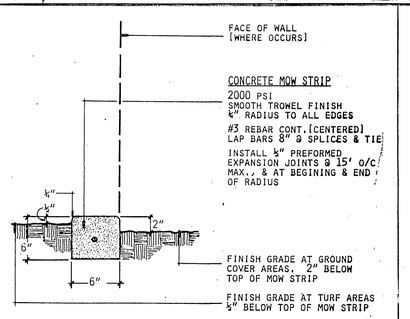
G | STAMPED CONC. DETAILS/ORANGE TERRACE



H | STAMPED CONC. DETAIL/SIEGAL



I | MOW CURB



GENERAL NOTES FOR PLAN CHECK

REVERSE FRONTAGE

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.

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC		

REGISTERED LANDSCAPE ARCHITECT TIMOTHY J. MALONEY NO. 2... STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY ____ DRAWN BY ____ CHECKED BY ____

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	
PARK DEPARTMENT	2/13/90	
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY
PUBLIC WORKS DIRECTOR
DATE 3/2/90

TRACT 22275 PHASE 1
RIVERSIDE, CA
S.I.C. CORPORATION

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

ACCOUNT NO.
R-3008 L
P-5
SHEET 12 OF 14
881287

PLANTING DETAILS

PC 2645

FILED

INDEXED 3-16-90 LH

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; guying and staking trees; planting shrubs and groundcover; ~~hydroseeding turf;~~ 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, planting backfill mix, auger hole requirements, and post plant fertilization program. The soils report recommendations shall take precedence over the minimum amendment and fertilizer application rates specified herein only 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 soils 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 job site:

Total Quantity of commercial fertilizers, by type
Total Quantity of soil amendments and conditioners, by type
Total Quantity of seed, by type
Total Quantity of mulch
Total Quantity of iron sulphate

1.07 PLANT ESTABLISHMENT PERIOD:

The length of the Plant Establishment Period shall be as ~~specified in Section 6-7.4 of the Special Provisions~~ a minimum of one year; see also Subsection 3.08 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: Tightly 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 insoluble nitrogen

Available Phosphoric Acid (P_2O_5). 10%
Derived from calcium phosphate

Soluble Potash (K_2O). 5%

Combined Calcium (Ca). 2.6%
Derived from calcium phosphates

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 sulphate shall be ferric sulphate or ferrous sulphate in pelleted or granular form containing not less than 18.5% 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 1030 of the Agriculture Code.

2.03 SEED:

Add the following to Standard Specifications Section 212-1.3:

Turf Seed Mix	Proportion by weight	Purity	Germination
Perrennial Rye (50% 'Penn Fine', 50% 'Derby')	20%	95%	90%
PJ Bluegrass (50% 'Rugby' 50% 'Parade')	60%	98%	80%
Un-Hulled Bermuda (Certified Arizona Common)	20%	98%	85%

(Note: For applications in May through September, use Hulled Bermuda.)

Seeding rate: 218 pounds per acre (5 pounds per 1,000 square feet)

2.04 HYDROSEEDING MATERIALS:

Add the following to Standard Specifications Section 212-1.3:

Water: All water used shall be potable domestic water as drawn from the City pressure main. See General Provisions section 7-8.5 regarding temporary construction meter and charges for water drawn from City fire hydrants.

Seed: Turf seed mix as specified.

Mulch: Fiber shall be produced from cellulose such as wood pulp or similar organic material and shall be of such character that it will disperse into a uniform slurry when mixed with water. The fiber shall be of such character that when used in the applied mixture, an absorptive or porous mat, but not a membrane, will result on the surface of the ground. Materials which inhibit germination or growth shall not be present in the mixture.

Binding Agent: Dry powder organic concentrate, Ecology Controls M-Binder or equal, as available from Robinson Fertilizer Company 714/538-3575.

Fertilizers:

A. 16-7-12 (+Iron) resin coated prills, Agriform, or City approved equal.

B. Single super phosphate 0-18-0.

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 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 rendered 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 six (6) 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. Wood shavings shall be leached nitrogen fortified 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, split, or disfigurements.

(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.

2.08 JUTE NETTING:

Jute netting shall be new and shall be of uniform, plain-weave, flame-retardant mesh. The mesh shall be dyed green and shall be made from unbleached single jute yarn. The yarn shall be of loosely twisted construction and shall not vary in thickness by more than one-half its normal diameter. Jute netting shall be furnished in rolled strips and shall meet the following requirements:

Width - 48 inches, with a tolerance of one inch wider or narrower.

Minimum 78 warp ends per width of roll.

Minimum 41 weft ends per yard of length.

Weight shall average 1.22 pounds per linear yard, with a tolerance of 5 percent heavier or lighter.

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, swales, and/or a 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 approved 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.

3.05 EROSION CONTROL:

Add new section to the Standard Specifications: 308-4.6(f) Jute Netting:

All slopes areas exceeding 3:1 shall receive jute netting. Netting shall also be provided during the maintenance period, when and as directed by the Park Projects Inspector, along flow lines and other locations where erosion is evident. Jute netting shall be installed loosely, up and down the slope. The installed netting shall fit the soil surface contour and shall be held in place by 9-inch long, 11-gage (minimum) steel wire staples driven vertically into the soil at approximately 24-inch spacing. Jute netting strips shall overlap along the sides at least 6 inches. Ends of strips shall be buried into the soil at least 6 inches. Lap all ends of rolls a minimum of 24".

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 308-4.7:

(1) On slopes exceeding 3:1 ratio, apply 5 gram Agriform tablets, one per plant in lieu of soil preparation work.

(2) 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.

(3) 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.

3.08 TURF PLANTING:

Add the following to Standard Specifications Section 308-4.8.2, b:

Mixing of hydroseed slurry: Mixing shall be performed in a tank, with a built-in continuous agitation and recirculation system of sufficient operating capacity to produce a homogeneous slurry of fiber, M-Binder, seed, fertilizer and water in the designated unit proportions.

Fiber	1,000 lbs./acre
Fertilizers:	
NPK	870 lbs./acre
Single superphosphate	200 lb./acre
Seed	as specified in Section 2.03
M-Binder	100 lbs./acre on slopes exceeding 5:1
Water	3,000 gal./acre
Agricultural Grade Gypsum	500 lb./acre

With agitation system operating at part speed, water shall be added to the tank, good recirculation shall be established. Materials shall be added in such a manner that they are uniformly blended into the mixture in the following sequence:

When tank is 1/3 filled with water:

Add binding agent - 1/2 acre requirement.
Add 3 - 50 pound bales of fiber.
Add seed - 1/2 acre requirement.
Add fertilizer - 1/2 acre requirement.

Agitate mixture at full speed when the tank is half-filled with water.

Add remainder fiber requirement, 7 bales before tank is 3/4 full. Add remainder fertilizers, seed and gypsum. Slurry distribution should begin immediately.

Area to be hydroseeded shall be moistened to a depth of six inches just prior to application.

Application: Hydroseed slurry shall be applied under high pressure evenly and result in a uniform coat on all areas to be treated. Care shall be exercised to assure that plants in place are not subjected to the direct force of the application. Slurry shall be immediately removed from walks, structures, plants, etc., that are inadvertently sprayed.

All bare spots shall be reseeded by the Contractor within 10 days. The Contractor shall be responsible for all reseeded areas for as long after seeding as necessary until acceptable germination and establishment is realized and approved by the City.

The slurry shall not be sprayed on undesignated areas. Any slurry spilled or sprayed into areas other than those designated to receive spray shall be cleaned up at the Contractor's expense to the satisfaction of the City.

3.09 WATERING:

Add the following to Standard Specifications Section 308-4.9.5:

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 in 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 308-6:

A. 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) The plant establishment period for the project shall not begin until after the first mowing of the newly planted turf areas. New turf shall not be mowed until attaining a minimum height of 2 inches. All turf shall be maintained at a mowing height of 1-1/2 inches.~~

(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 recommence 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 and turf 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 Geigy 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 turf areas at a rate of 10 pounds per 1,000 square feet, and~~ 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. Jute netting shall be installed at flow lines and other locations where erosion is evident, when directed by the Park Projects Inspector.

(1) Damage 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 voids. Bare areas will be unacceptable. Contractor shall provide ~~sod or~~ plantings from flats 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 "knit-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.

END OF SECTION

BJ/0020o/c
06/28/88

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC		

REGISTERED LANDSCAPE ARCHITECT — TIMOTHY I. MALONEY NO. 2110 — Signature — Date 2-28-89 — STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY ______ DRAWN BY ______ CHECKED BY ______

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	WU
PARK DEPARTMENT	2-13-90	BS.
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY [signature]
PUBLIC WORKS DIRECTOR
DATE 3/2/90

PLANTING SPECIFICATIONS

TRACT 22275 PHASE I
RIVERSIDE, CA
S.I.C. CORPORATION

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

ACCOUNT NO.
R-3008 L
P-6
SHEET 13 OF 14
881287

PC 2645

FR80

INDEXED 3-16-90 LFH

CITY OF RIVERSIDE
PARK AND RECREATION DEPARTMENT
STANDARD SPECIFICATIONS

SECTION 02480-1 - STREET TREE PLANTING

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:

The work required is indicated on the drawings and includes, but is not necessarily limited to: planting trees; guying and staking trees; maintenance; guarantees; and replacement. The plan quantities are approximate; the actual quantity of trees to be planted will be determined on-site by the inspector to conform with site constraints while providing a minimum of one tree per lot and an average spacing of 45' O.C. whichever results in the greater number of trees.

1.03 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. Guarantee period shall run concurrently with maintenance period.

B. During the guarantee period, any material found to be dead, missing, or in poor condition, whether or not due to the fault of the contractor, 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.

1.04 INSPECTIONS:

Inspections will be required. The Contractor shall contact the Park Department Representative 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. When plants are spotted for planting, but before planting holes are excavated.

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

C. At start of plant establishment and maintenance period.

D. Final inspection (end of maintenance) prior to release of project. This release will be confirmed in writing by the Park and Recreation Department.

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: Tightly 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 insoluble nitrogen

Available Phosphoric Acid (P_2O_5) 10%
Derived from calcium phosphate

Soluable Potash (K_2O) 5%

Combined Calcium (Ca) 2.6%
Derived from calcium phosphates

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: 14 - 16% nitrogen, 7% phosphoric acid, and 5% potash.

C. Organic Soil Amendment:
Type 1 organic soil amendment, nitrogen stabilized, shall be used.

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.

2.03 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 may 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 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 may be checked by the Parks Department Representative at his option. The selection of plants to be checked will be made by the Park Representative. All plants rendered 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 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 six (6) inches above the crown roots. The trees shall stand erect without support.

C. Bare root stock shall conform to the American Nurseryman's Association standards. Minimum caliper shall be 2"0' and minimum height shall be 12 feet.

~~D. All palm trees shall be of a minimum overall height of 8 to 12 feet as measured from the crown of the rootball to the tips of the fronds, or four feet of brown trunk whichever is greater.~~

D. All container grown plants shall be of a minimum 15 gallon container size, with minimum calipre and height in accordance with the American Association of Nurseryman standards for container plants.

2.04 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. Wood shavings shall be leached nitrogen fortified 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:

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

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

2.05 STAKES AND TIES:

Add the following to Standard Specifications Section 212-1.5.3:

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

(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.

PART 3 - EXECUTION

3.01 GENERAL:

All work shall conform with Section 308 of the Standard Specification except as modified herein.

3.02 PLANTING:

A. Amend the Standard Specifications Section 308-4.5 to coordinate with Section 2.04 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 equal. A minimum of 3 tablets for bare root stock, 5 tablets for 15 gallons, and 8 tablets for a 24" box. Complete backfilling to finish grade.

(3) Trees 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.

3.03 TREE STAKING:

Amend the Standard Specifications Section 308-4.6.1 and 308-4.6.2 to read: Stake trees as per Parks and Recreation Department standard detail.

3.04 WATERING:

Add the following to Standard Specifications Section 308-4.9.5:

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 in 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.

3.05 MAINTENANCE:

Amend the Standard Specifications Section 308-6 to read: All trees planted by the Contractor under this contract shall be maintained by him for a period of not less than one calendar year from the date of written acceptance for start of maintenance. Start of maintenance date will be confirmed in writing by the Park and Recreation Department.

A. Add the following to Standard Specifications Section 308-6: Start of maintenance criteria:

(1) Maintenance period shall not start until all elements of the project are completed in accordance with the contract documents. Projects will NOT be segmented into phases.

(2) Written acceptance of the City must be obtained prior to the beginning of the maintenance period.

(3) If the project maintenance fails to continuously meet standards required for start of maintenance, the project will be placed on extended maintenance. The required one year maintenance period will not resume until Contractor has corrected all deficiencies.

B. End of Maintenance:

(1) On completion of the maintenance period and meeting of the criteria required for the start of maintenance, the Contractor shall call for inspection of the project.

(2) Deficiencies noted during inspection shall extend the maintenance period until all are corrected.

(3) The contractor's responsibility for maintenance shall end only upon receipt of the City's written acceptance of the project.

C. During the maintenance period provide all watering, weeding, fertilizing, cultivation, and spraying necessary to keep the plants in a healthy growing condition and to keep the planted areas neat, edged, and attractive. All trees shall be pinched 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 no major tree pruning without prior written approval of the City.

D. After planting and during the maintenance period, in the event that trees exhibit iron chlorosis symptoms, apply FE 138 Geigy or equivalent at manufacturer's recommended rates.

E. During the maintenance period, should the appearance of any plant indicate weakness, or should any plant be missing, that plant shall be replaced immediately with a new, healthy plant. At the end of the maintenance period, all plant materials shall be in a healthy, growing condition and spaced as indicated on the plans.

F. Damage to planting shall be repaired immediately and throughout the maintenance period.

(1) Depressions caused by vehicles, bicycles, or foot traffic shall be filled and leveled.

(2) Exterminate gophers and moles, and repair damage as above.

G. Any plants that do not show a prompt establishment shall be replaced at 30-day intervals until plantings show evidence of establishment as accepted by the Park Department Representative.

3.06 DISEASE AND PEST CONTROL:

Add the following to Standard Specifications Section 308-6: Throughout the maintenance 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.

3.07 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, walkways, and trails, and remove construction equipment from the premises.

END OF SECTION

BJ/0136o/c
05/28/87

APPROVED BY	DATE	BY
PLANNING		
PARK AND RECREATION		
PUBLIC UTILITIES ELECTRIC		

REGISTERED LANDSCAPE ARCHITECT
TIMOTHY I. MALONEY NO. 2110
Signature 3-20-90
Date
STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY ______ DRAWN BY ______ CHECKED BY ______

FRED

PLANTINGING SPECIFICATIONS

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3/1/90	WK
PARK DEPARTMENT	2-13-90	BB
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER		

APPROVED BY Barry Beck
PUBLIC WORKS DIRECTOR
DATE 3/2/90

TRACT 22275 PHASE I
RIVERSIDE, CA
S.I.C. CORPORATION

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

ACCOUNT NO.
R-3008 L
P-7
SHEET 14 OF 14
881287

PC 2645

INDEXED 3-16-90 LH