

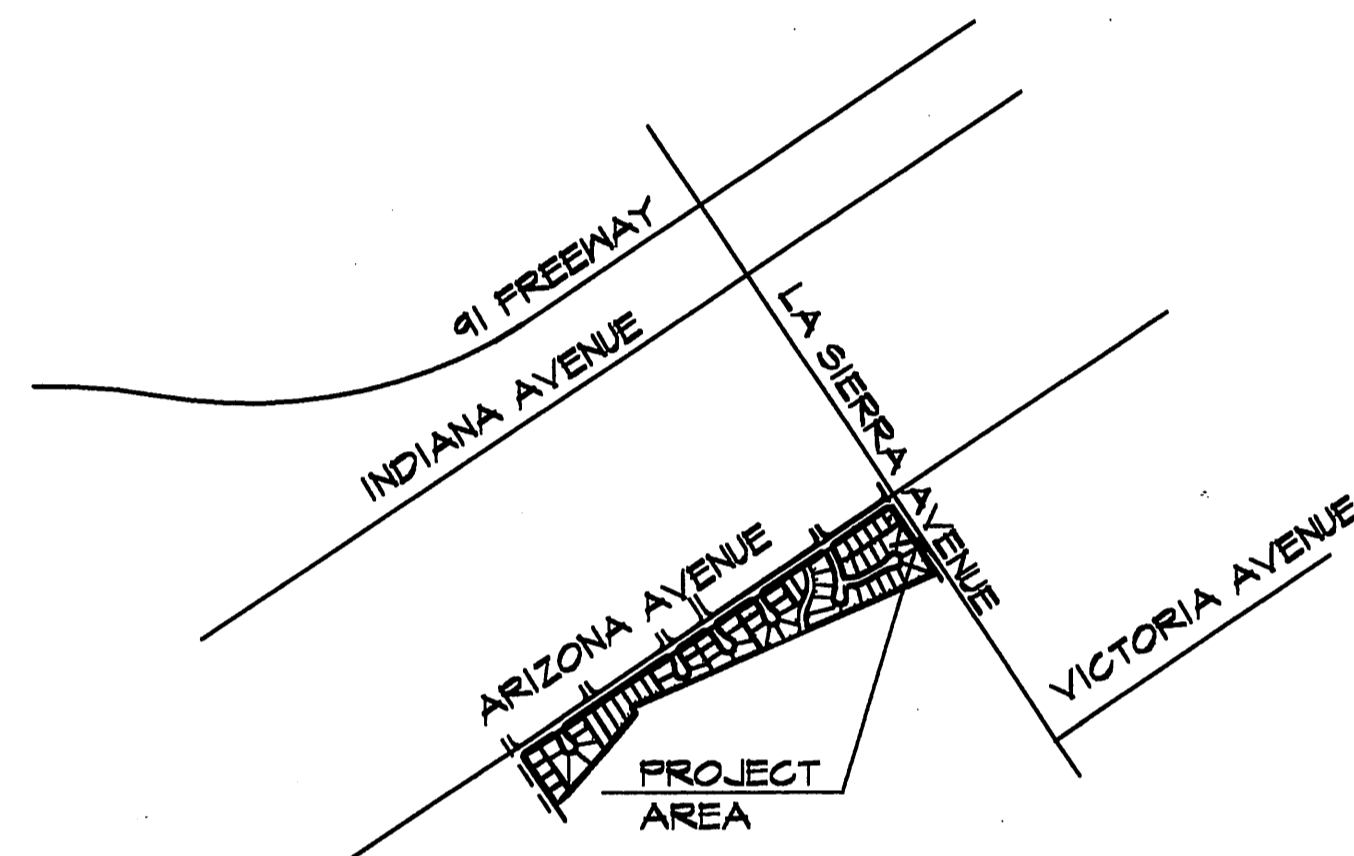
Highmark Public Landscape Area

Tract 31028 Riverside, California

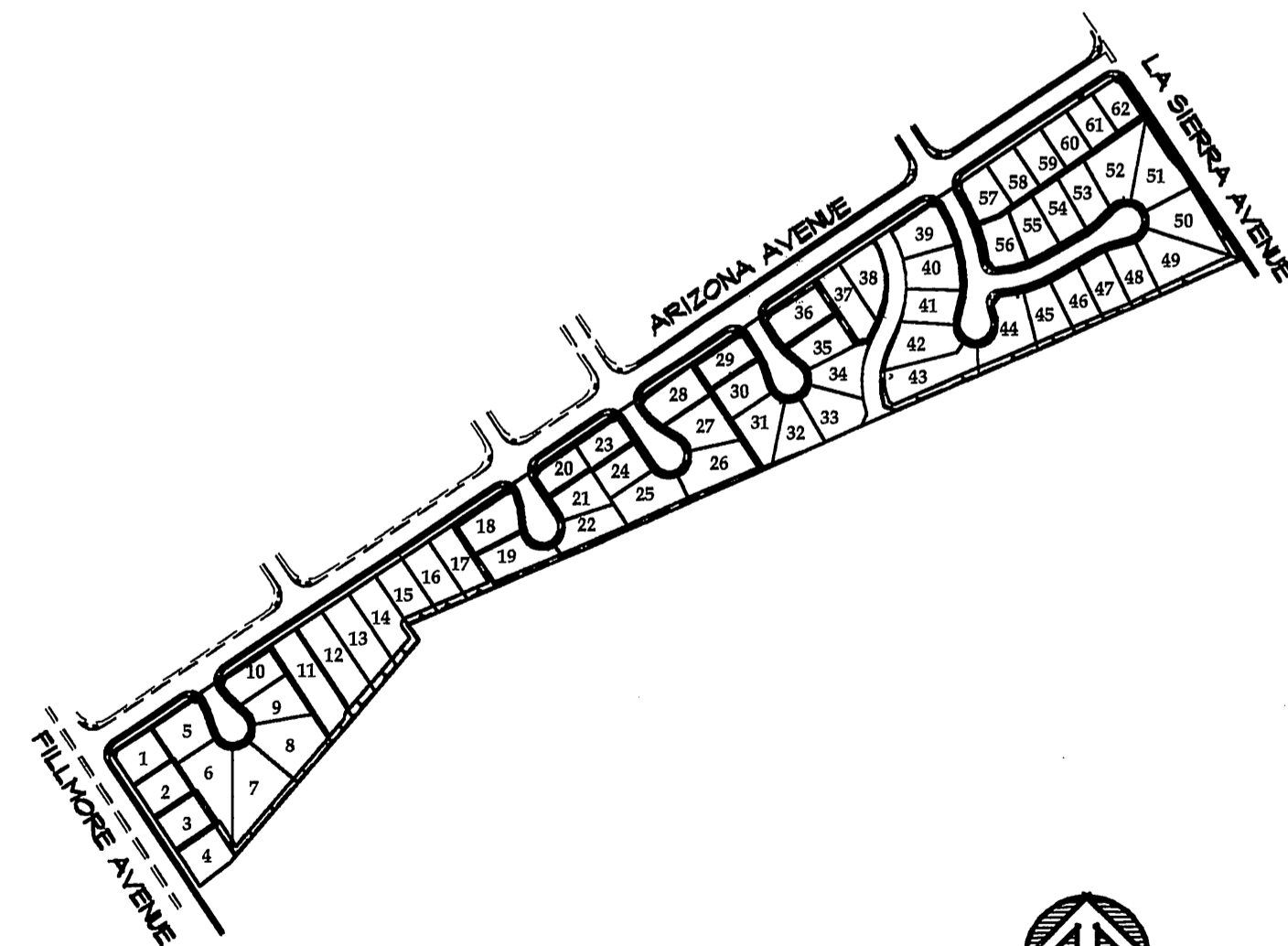
RICHMOND AMERICAN HOMES - INLAND EMPIRE

2191 5TH STREET, SUITE 105 - NORCO, CALIFORNIA 92860

(909) 738-8318



VICINITY MAP
NO SCALE



LOCATION MAP
N.T.S.

SHEET INDEX		SHEET #
T-1	TITLE SHEET	1 of 7
L-1	PLANTING AND CONSTRUCTION PLAN	2 of 7
L-2	IRRIGATION PLAN	3 of 7
L-3	SPECIFICATIONS	4 of 7
L-4	SPECIFICATIONS	5 of 7
L-5	IRRIGATION DETAILS	6 of 7
L-6	PLANTING DETAILS	7 of 7

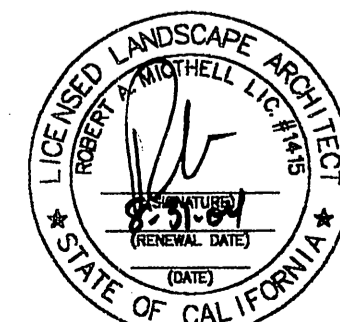
TOTAL PLANTING AREA: 3,489 S.F.			
TREES:	COMMON NAME	SIZE	QUANTITIES
WAR	WASHINGTONIA ROBUSTA	MEXICAN FAN PALM	8'-10' B.T. 11

GENERAL NOTES FOR PUBLIC LANDSCAPES

- All related work shall conform to the City of Riverside Park and Recreation Department Standards and Specifications for Planting and Irrigation work. (Specifications section 02441 and 02480).
- A "Public Landscape" permit, as issued by the Park and Recreation Department is required. Contact the Park Projects Inspector at (909) 351-6254 to schedule a pre-construction meeting and to obtain the permit.
- When calling for inspections contact the Park Projects Inspector a minimum of 48 hours in advance at to schedule an inspection. A written approval will be provided on the Public Landscape Permit card for each stage of inspection. A verbal approval will not be acceptable. Inspections are required per the standard specifications, and include but are not necessarily limited to the following:
 - After completion of final grading and when all utility services have been marked, but prior to initiating any landscape work within in the public right of way;
 - At time of installation of irrigation sleeves and constant pressure mainlines, but prior to backfill of trenches for same (Note: mainlines must be pressure tested in the presence of the Park Projects Inspector);
 - At time of installation of irrigation valves, laterals and heads;
 - For spotting of all trees prior to digging planting pits;
 - While digging plant pits and planting/relocating trees;
 - After planting and all other indicated or specified work has been completed, for start of maintenance;
 - At substantial completion of the project for City's acceptance to start the required maintenance period;
 - At the end of the Maintenance Period, the Contractor/Developer shall call the Park Projects Inspector at the number listed above for a final acceptance inspection in order to be released from maintenance. Developers bonds will not be released until after receipt of written notification from the City that the project has passed final inspection and the Park and Recreation Department is assuming maintenance responsibilities.
- The Developer shall be responsible to acceptably maintain all plantings for a minimum period of one (1) year.

(D:\b\docs\WordPerfect\Doc\MAS\PLAND\PubLSC\GenNotes.Rev0203.wpd)

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PLANS PREPARED BY:
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web: rmalandscapes.com
contact: Dan Wilson

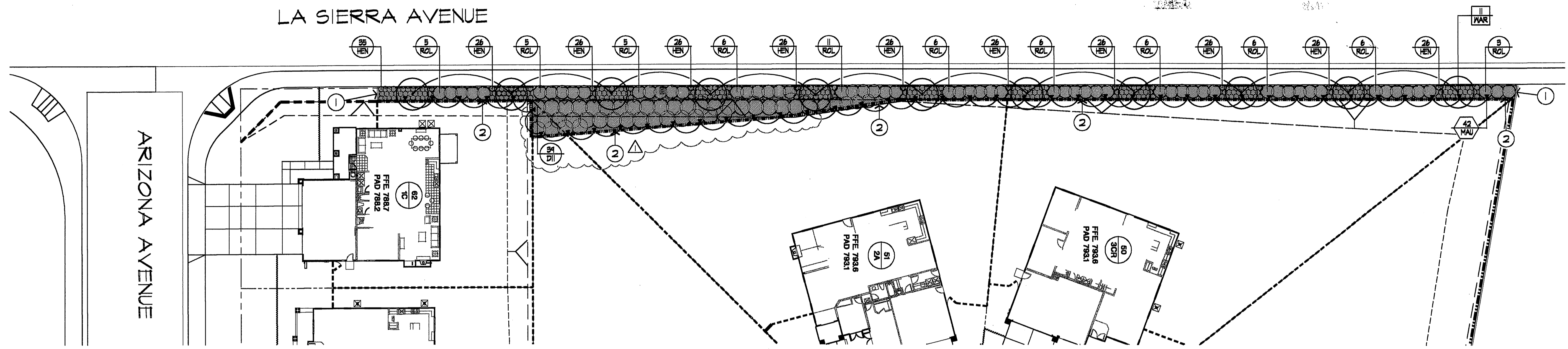
BENCHMARK: E2-P2
CITY OF RIVERSIDE
CHISELED SQUARE ON THE TOP OF CURB AT THE WESTERLY END OF A CATCH BASIN FRONTING THE SOUTHERLY CURB OF INDIANA AVENUE AT THE SOUTHEAST CORNER OF INDIANA AVENUE AND FILLMORE STREET.
ELEVATION: 738.410

MARK	REVISIONS	APPR.	DATE
△	Sheets L-1 & L-2 Altered plantings & Irrigation	925	1/21/04

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
APPROVED BY: [Signature]
DATE: 1/20/04
PRINCIPAL ENGINEER
PARK DEPARTMENT
TRAFFIC DIVISION
STREET SERVICES
PLANNING DEPARTMENT

TITLE SHEET		PW03-0100
LA SIERRA AVENUE		T-1
A.P.N. 136-030-003-8, 136-030-001-6 and 136-030-009-4		(R-3726-L) SHEET 1 OF 7
SCALE:	9/16/03	J.N. 6371

INDEXED 10-12-04 LH



NOTES: • MOWCURB TO BE PLAIN (NATURAL GREY) WITH A SMOOTH TROWEL FINISH.
 • PROVIDE 1/2" TOOLED RADIUS ON ALL EXPOSED EDGES.
 • PROVIDE 1" DEEP SCORE JOINTS AT 10'-0" O.C. AND 1/4" BITUMINOUS FELT EXPANSION JOINTS AT 20'-0" O.C. WITH MASTIC SEALANT.

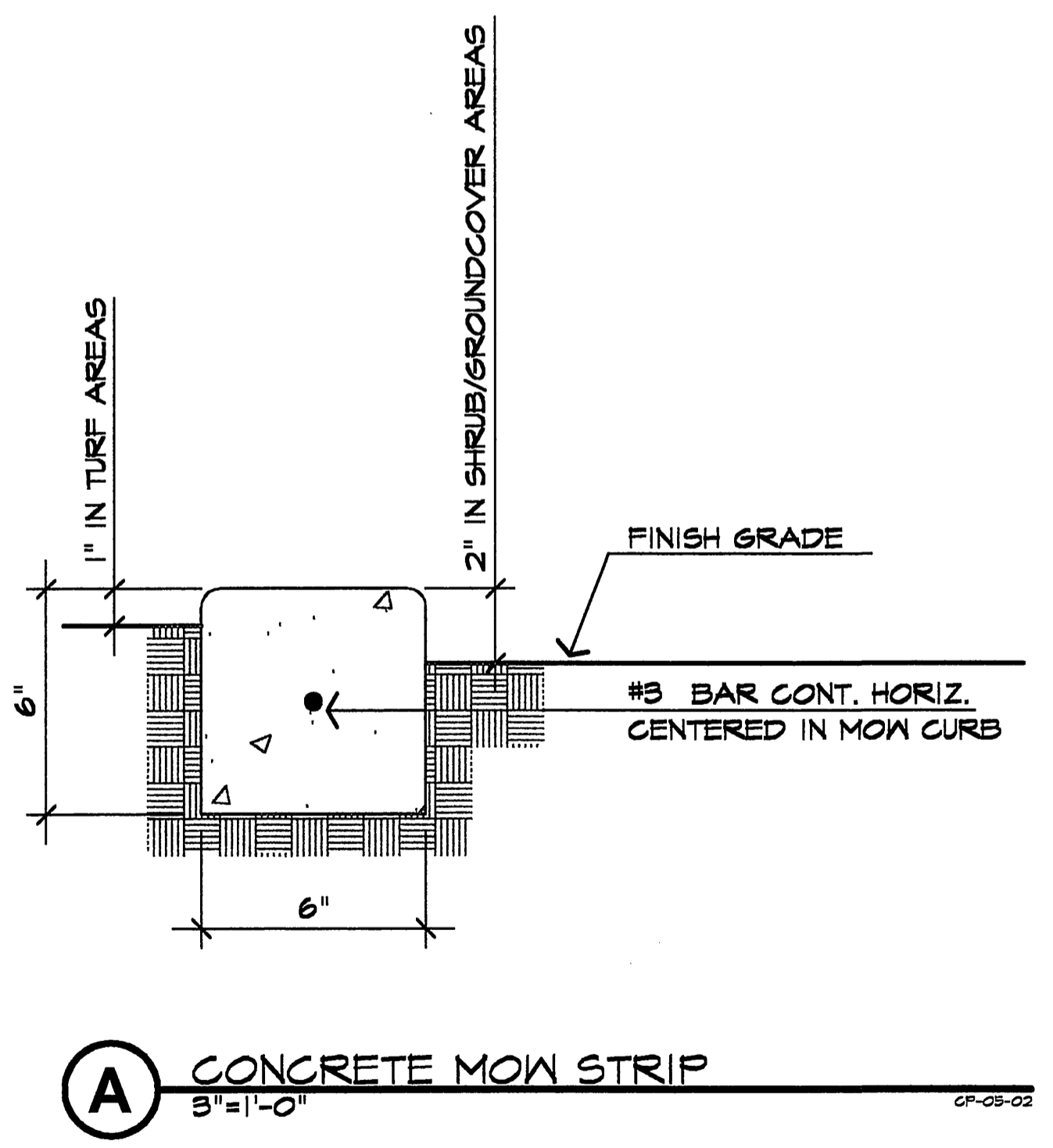
PLANT LIST

NOTE: THE KC CATEGORY FOR ANY SPECIES NOT FOUND IN THE CITY OF RIVERSIDE WATER EFFICIENT LANDSCAPING AND IRRIGATION ORDINANCE (1994) HAS BEEN APPROXIMATED FROM WUCOLS INFORMATION.

KEY	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITIES	KC CATEGORY
TREES:					
WAR	WASHINGTONIA ROBUSTA	MEXICAN FAN PALM	8'-10' B.T.	11	2
SHRUBS:					
DII	DIETES IRIDIODES	FORTNIGHT LILY	5 GALLON	39	2
ROL	ROSMARINUS LOCKWOOD DE FOREST	LOCKWOOD ROSEMARY	5 GALLON	65	2
HEN	HELIANTHEMUM NUMMULARIUM	SUNROSE	1 GALLON	268	2
VINES:					
MAU	MACFADYENA UNGUIS-CATI	CAT'S CLAW	5 GALLON	42	2
GROUND COVER:					
	VERBENA PERUVIANA:				
	ROOTED CUTTINGS @ 12" O.C.				

TOTAL PLANTING AREA : 3,489 S.F.

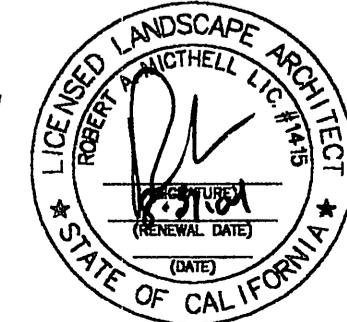
- ### PLANTING NOTES
- SEE SHEET L-6 FOR PLANTING DETAILS.
 - REFER TO SPECIFICATIONS FOR ACCEPTABLE STANDARDS OF MATERIAL AND WORKMANSHIP.
 - ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO GOVERNING CODES AND ORDINANCES OF THE CITY OF RIVERSIDE.
 - ALL ROOTED CUTTINGS GROUND COVER TO BE TRIANGULARLY SPACED.
 - REMOVE VINES FROM STAKE OR TRELIS AND ATTACH TO ADJACENT WALL, FENCES, GRILLE OR POST.
 - ASSUMED SMALLEST SIZE FOR THE PLANT SHOWN ON PLANT LIST, UNLESS OTHERWISE INDICATED ON THE PLAN.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND/OR ENSURE AVAILABILITY OF ALL PLANT MATERIAL SPECIFIED ON THE PLANS BEFORE ANY INSTALLATION IS BEGUN. IF SPECIAL ARRANGEMENTS NEED TO BE MADE TO OBTAIN PLANT MATERIAL THIS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER AND THE LANDSCAPE ARCHITECT, SO THAT ANY ISSUES POTENTIALLY AFFECTING CONTINUITY AND DESIGN INTENT MAY BE RESOLVED IN A TIMELY MANNER.
 - OBTAIN INSPECTION AND APPROVAL OF THE PARK PROJECTS INSPECTOR FOR ALL PLANT MATERIAL, PLANT LOCATIONS AND PLANTING PITS PRIOR TO INSTALLATION OF PLANTINGS.
 - KEEP BARK MULCH 2" CLEAR FROM TREE TRUNKS.



- ### CONSTRUCTION LEGEND
- (FOR THIS SHEET ONLY)
- CONCRETE MOW CURB PER DETAIL "A" ON THIS SHEET.
 - PROTO II SPLITFACE CONCRETE BLOCK PRODUCTION SCREEN WALL PER JOB # 778 P PLANS, PREPARED BY ROBERT MITCHELL & ASSOCIATES.

- ### CONSTRUCTION NOTES
- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO ALL APPLICABLE GOVERNING CODES AND ORDINANCES. WHEREVER THESE PLANS VARY FROM THOSE CODES AND/OR ORDINANCES, THE CONTRACTOR SHALL FOLLOW THE PLANS AS LONG AS THEY MEET OR EXCEED THOSE CODES AND/OR ORDINANCES. IF THE PLANS DO NOT MEET CODE, THEN CODE SHALL BE FOLLOWED.
 - THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER/BUILDER OR HIS REPRESENTATIVE AND THE LANDSCAPE ARCHITECT.
 - WRITTEN DIMENSIONS AND DETAILS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
 - ALLOW FOR ADJOINING CONSTRUCTION TRADES.
 - ALL GRADE UNDER CONCRETE IS TO BE COMPACTED TO 90% RELATIVE. NO LOOSE OR NON-CONSOLIDATED MATERIAL IS ALLOWED.
 - CEMENT SHALL CONFORM TO A.S.T.M. C150 AND AGGREGATE SHALL CONFORM TO A.S.T.M. C33.
 - ALL CONCRETE SHALL OBTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2500 P.S.I. AT TWENTY-EIGHT (28) DAYS. (VERIFY WITH GEOTECHNICAL REPORT FOR ANY NOTED VARIATIONS)
 - CONCRETE SHALL HAVE A MAXIMUM SLUMP NO GREATER THAN 4" EXCEPT FOR FOUNDATIONS WHICH MAY HAVE A 5" MAXIMUM SLUMP. (VERIFY WITH SOILS REPORT FOR ANY NOTED VARIATIONS)

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BENCHMARK : E2-P2
 CITY OF RIVERSIDE
 CHISELED SQUARE ON THE TOP OF CURB AT THE WESTERLY END OF A CATCH BASIN FRONING THE SOUTHERLY CORNER OF INDIANA AVENUE AND FILLMORE STREET.
 ELEVATION : 738.410

MARK	REVISIONS	APPR.	DATE
1	Altered plantings behind lots 51 & 52		07-21-07

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
 APPROVED BY: [Signature]
 DATE: 1/20/04
 TRAFFIC DIVISION
 STREET SERVICES
 PLANNING DEPARTMENT

CONSTRUCTION & PLANTING PLAN		PW03-0100
LA SIERRA AVENUE		L-1
A.P.N. 136-030-003-8, 136-030-001-6 and 136-030-009-4		(R-3726-L) SHEET 2 OF 7
SCALE: 1"=20'-0"	9/16/03	J.N. 6371

INDEXED 10-12-04

ELECTRIC SERVICE INFORMATION	
CONTROLLER REF. NO.:	A
TYPE OF ELECTRIC SERVICE:	NON-METERED
SERVICE BUS SIZE:	120 VOLTS 100 AMPS
ELECTRIC SERVICE ADDRESS ***:	2980 La Sierra Avenue
ELECTRIC METER NUMBER ***:	
*** ELECTRIC SERVICE ADDRESS AND METER NUMBER TO BE PROVIDED BY THE CONTRACTOR ON THE RECORD DRAWINGS.	

WATER SERVICE INFORMATION	
WATER METER REF. NO.:	A
TYPE OF SOURCE:	POTABLE
SERVICE LINE SIZE **:	1"
WATER METER SIZE **:	3/4"
(** PER STREET and/or WATER IMPROVEMENT PLANS)	
METER SERVICE ADDRESS ***:	
METER NUMBER ***:	
EXISTING WATER PRESSURE:	55 - 60 PSI.
MINIMUM OPERATING PRESSURE:	53 PSI.
PEAK IRRIGATION DEMAND:	12 GPM.
IRRIGATED AREA:	0.7 ACRES
*** METER SERVICE ADDRESS AND METER NUMBER TO BE PROVIDED BY THE CONTRACTOR ON THE RECORD DRAWINGS.	

**CITY OF RIVERSIDE
PUBLIC UTILITIES DEPARTMENT**

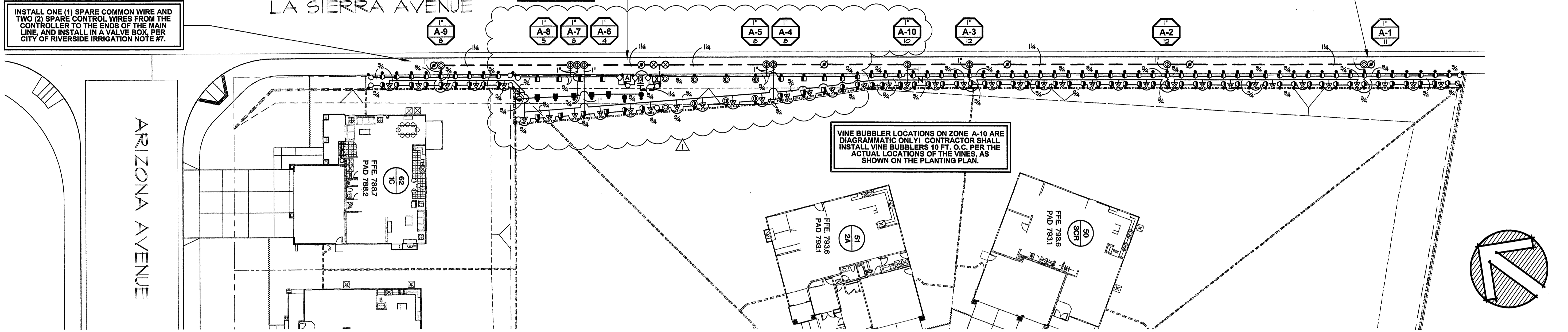
PUBLIC UTILITIES - ELECTRIC	PUBLIC UTILITIES - WATER
APPROVAL OF PROPOSED ELECTRIC SERVICE LOCATION:	APPROVAL OF PROPOSED WATER METER LOCATION:
DATE: 12/10/03	DATE: 12/10/03

INSTALL ONE (1) SPARE COMMON WIRE AND TWO (2) SPARE CONTROL WIRES FROM THE CONTROLLER TO THE ENDS OF THE MAIN LINE, AND INSTALL IN A VALVE BOX, PER CITY OF RIVERSIDE IRRIGATION NOTE #7.

INSTALL ONE (1) SPARE COMMON WIRE AND TWO (2) SPARE CONTROL WIRES FROM THE CONTROLLER TO THE ENDS OF THE MAIN LINE, AND INSTALL IN A VALVE BOX, PER CITY OF RIVERSIDE IRRIGATION NOTE #7.

LA SIERRA AVENUE

ARIZONA AVENUE



VINE BUBBLER LOCATIONS ON ZONE A-10 ARE DIAGRAMMATIC ONLY. CONTRACTOR SHALL INSTALL VINE BUBBLERS 10 FT. O.C. PER THE ACTUAL LOCATIONS OF THE VINES, AS SHOWN ON THE PLANTING PLAN.

city of Riverside IRRIGATION NOTES

- INSTALL ALL EQUIPMENT AS SHOWN IN THE DETAILS AND/OR AS STATED IN THE PROJECT SPECIFICATIONS AND PER CITY STANDARDS.
- THIS DESIGN IS DIAGRAMMATIC. ANY EQUIPMENT SHOWN IN PAVED AREAS IS FOR DESIGN CLARIFICATION ONLY, AND IS TO BE INSTALLED WITHIN PLANTED AREAS WHEREVER POSSIBLE.
- THE IRRIGATION CONTRACTOR SHALL NOT WILLFULLY INSTALL THE IRRIGATION SYSTEM AS INDICATED ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS OR GRADE DIFFERENCES EXIST THAT WERE NOT KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE PARK PROJECTS INSPECTOR AND THE LANDSCAPE ARCHITECT, OTHERWISE THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY NECESSARY REVISIONS.
- THE SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE SHOWN AT EACH POINT OF CONNECTION. THE IRRIGATION CONTRACTOR SHALL VERIFY ALL PRESSURES ON SITE PRIOR TO COMMENCING WITH THE INSTALLATION OF THE IRRIGATION SYSTEM.
- FINAL LOCATION OF AUTOMATIC CONTROLLER TO BE DETERMINED IN THE FIELD BY THE PARK PROJECTS INSPECTOR.
- 117 VOLT 60HZ SINGLE PHASE ELECTRICAL POWER OUTLET FOR THE IRRIGATION CONTROLLER IS TO BE PROVIDED BY THE OWNER/DEVELOPER. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE HOOK-UP FROM THE POWER OUTLET TO THE CONTROLLER.
- ALL LOW-VOLTAGE CONTROL WIRE FROM THE CONTROLLER TO THE REMOTE CONTROL VALVES SHALL BE AWG-UP DIRECT BURIAL COPPER WIRE #14 CONTROL AND #12 COMMON. CONTROL WIRES SHALL BE COLOR CODED BY CONTROLLER AND COMMON GROUND WIRES SHALL BE WHITE WITH IDENTIFYING COLOR STRIPE CODED FOR EACH CONTROLLER. CONTRACTOR SHALL INSTALL ONE (1) SPARE COLOR CODED COMMON AND TWO (2) SPARE CONTROL WIRES FROM THE CONTROLLER TO THE ENDS OF THE MAIN LINE, AND TERMINATE SAME WITHIN A VALVE BOX FOR FUTURE USE.
- ALL WIRE CONNECTIONS SHALL BE MADE IN VALVE BOXES PER CITY STANDARDS. WIRE SPLICES ARE NOT PERMITTED EXCEPT AS APPROVED BY THE PARK PROJECTS INSPECTOR. WIRE SPLICES SHALL BE LOCATED IN VALVE BOXES ONLY AND SHALL BE RECORDED ON THE RECORD DRAWINGS PER CITY STANDARDS AS SPECIFIED.
- PROVIDE A MINIMUM OF 18" TO A MAXIMUM OF 24" OF COVER OVER ALL PRESSURE MAIN LINE PIPING AND A MINIMUM OF 12" TO A MAXIMUM OF 16" COVER OVER ALL NON-PRESSURE LATERAL LINE PIPING. ALL MAIN LINE AND LATERAL LINE PIPING UNDER PAVED AREAS SHALL BE INSTALLED IN SCH 40 PVC SLEEVES.
- THE IRRIGATION CONTRACTOR SHALL FLUSH ALL LINES AND ADJUST ALL HEADS FOR MAXIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO ALL WALKS, WALLS, FENCES, DRIVES, AND BUILDINGS AS MUCH AS POSSIBLE. THIS WORK SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT ANY EXISTING SITE CONDITIONS.
- THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANTI-DRAIN VALVES AS REQUIRED BY FIELD CONDITIONS TO PREVENT DAMAGE AND EROSION DUE TO EXCESSIVE LOW HEAD RUNOFF. ANTI-DRAIN VALVES SHALL EITHER BE INTEGRAL TO THE IRRIGATION HEAD, OR SHALL BE INSTALLED WITHIN THE HEAD RISER ONLY. DO NOT INSTALL WITHIN LATERAL LINES.
- UPON COMPLETION OF THE JOB, THE CONTRACTOR IS TO PROVIDE THE OWNER WITH A SEPIA MYLAR OF THE RECORD IRRIGATION PLANS, AND IS TO PROVIDE THE CITY WITH A PHOTO MYLAR OF THE RECORD DRAWINGS.
- THE IRRIGATION SYSTEM SHALL BE FULLY GUARANTEED FOR A PERIOD OF ONE YEAR. ANY DEFECTIVE MATERIAL OR POOR WORKMANSHIP SHALL BE REPLACED OR CORRECTED BY THE IRRIGATION CONTRACTOR AT NO COST TO THE OWNER(S).

FRICTION LOSS CALCULATION	
WATER METER REF. NO.:	A
VALVE STATION NO.:	A-1
SPRINKLER HEAD	20.0
ANTI-DRAIN VALVE (ADV)	1.0
LATERAL LINE & FITTINGS	3.7
CONTROL VALVE	2.9
MIN. RCV PRV DIFFERENTIAL PRESSURE MAIN LINE	2.9
FLOW SENSOR	
REGULATOR VALVE	13.5
BACKFLOW PREVENTER	1.0
STRAINER / FILTER	1.9
WATER METER	2.2
SERVICE LINE	4.0
ELEVATION DIFFERENCE	2.6
5% CONTINGENCY	52.8
MINIMUM PSI. REQ'D	(55.0)
(EXISTING PSI.)	2.2
RESIDUAL PSI.	

IRRIGATION LEGEND

VINE BUBBLER IRRIGATION

TORO	570Z-6P-SI-COM	F	20 PSI
NOZZLE	DESCRIPTION	360° GPM	DETAIL
FB-25-PC	PRESSURE-COMPENSATING FLOOD BUBBLER	0.3	#4040

OVERHEAD SPRAY IRRIGATION

TORO	570Z-12P-SI-COM	Q	T	H	TT	TQ	F	V-15	20 PSI		
NOZZLE	DESCRIPTION	RADIUS	90° GPM	120° GPM	180° GPM	240° GPM	270° GPM	360° GPM	varies	GPM	DETAIL
8 SERIES	SPRAY	5'-7'	0.2	0.2	0.4	0.6	0.6	0.7			#4040
10 SERIES	SPRAY	7'-9'	0.3	0.4	0.6	0.7	0.8	1.1			#4040
12 SERIES	SPRAY	8'-11'	0.4	0.6	1.0	1.1	1.1	1.7			#4040
15 SERIES	SPRAY	10'-13'	0.7	1.0	1.4	1.8	2.1	2.9	< 3.0		#4040

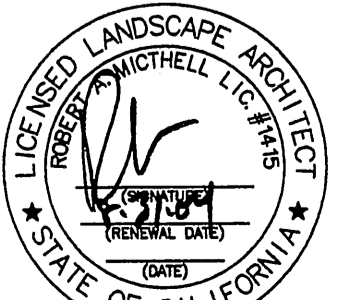
DISTRIBUTION & CONTROL EQUIPMENT

SYMBOL	MFR.	MODEL NUMBER	DESCRIPTION	REMARKS	DETAIL
(A)	STRONG BOX	SB-185S	CONTROLLER ASSEMBLY 'A', CONSISTING OF: CONTROLLER ENCLOSURE (STAINLESS STEEL)		#4070
(no symbol)	RAINBIRD	RC-126C	AUTOMATIC CONTROLLER	12 STATION	#4070
(no symbol)	WCS	RG	RAIN GUARD RAIN SHUT OFF DEVICE	INSTALL ONE FOR EACH CONTROLLER INSTALLED	
(no symbol)	WCS	RGVR-S	RAIN GUARD VANDAL RESISTANT ENCLOSURE	INSTALL CLEAR OF SPRAY FROM IRRIGATION WATER SURFACE MOUNT WHERE RAINFALL IS UNOBSTRUCTED	
(X)	FEBCO	860U	REDUCED PRESSURE BACKFLOW PREVENTER	1", INSTALL W/ Y-STRAINER NOTED BELOW	#4011
(no symbol)	FEBCO	650 SERIES	BRONZE Y-STRAINER (THREADED)	1", w/ 40 MESH STAINLESS STEEL SCREEN	#4011
(no symbol)	STRONG BOX	SBBC-30SS	"SMOOTH TOUCH" BACKFLOW PREVENTER ENCLOSURE	28" L, 27" H, 14" W. (INSIDE DIMENSIONS)	#4011
(no symbol)	(N/A)	(N/A)	BACKFLOW BARRIER POSTS	INSTALL FOUR (4) POSTS PER CITY STD.'S	#4019
(X)	NIBCO	T-580	BRONZE BALL VALVE (THREADED)	LINE SIZE	#4052
(N)	KING BROS.	KSC-S SERIES	SCH. 40 PVC SWING CHECK VALVE (SLIP x SLIP)	LINE SIZE: INSTALL IN 10" DIAMETER VALVE BOX	
(N)	RAINBIRD	EPB-CP SERIES	ELECTRIC CONTROL VALVE	1", w/ FLOW CONTROL	#4030
(N)	RAINBIRD	44 LRC	QUICK-COUPLING VALVE w/ YELLOW RUBBER COVER	FOR POTABLE WATER, 1", LOCKING COVER	#4050
(-)	(APPROVED)	SCHEDULE 40 PVC	PRESSURE MAIN LINE PIPING ON POTABLE WATER SYSTEM: 1-1/2" DIAMETER AND SMALLER	FOR UNDERGROUND INSTALLATION	#4010
(-)	(APPROVED)	CLASS 200 PVC	NON-PRESSURE LATERAL LINE PIPING ON POTABLE WATER SYSTEM: 3/4" DIAMETER AND LARGER	SIZES NOTED FOR UNDERGROUND INSTALLATION	#4010
(no symbol)	ELECTRIC SERVICE		120-VOLT SINGLE-PHASE NON-METERED (BY OTHERS) (ELECTRIC SERVICES ARE INSTALLED UNDER SEPARATE CONTRACT PER UTILITY and/or ELECTRICAL IMPROVEMENT PLANS)		#4062
(W)	WATER METER		3/4" POTABLE WATER METER (BY OTHERS) (WATER METERS ARE INSTALLED UNDER SEPARATE CONTRACT PER THE STREET and/or WATER IMPROVEMENT PLANS)		
(#)	POINT OF CONNECTION (P.O.C.) FOR IRRIGATION SYSTEM		CONNECT TO OUTLET OF WATER METER. METER LOCATIONS ARE APPROXIMATE - IRRIGATION CONTRACTOR SHALL VERIFY IN THE FIELD.		
(size)	INDICATES CONTROL VALVE SIZE				
(STA.#)	INDICATES CONTROLLER STATION NUMBER				
(GPM)	INDICATES FLOW IN GALLONS PER MINUTE				

WHENEVER ANY ITEM OF "DISTRIBUTION & CONTROL EQUIPMENT" IS SIZED SMALLER THAN THE MAIN LINE OR LATERAL LINE PIPING ON WHICH IT IS PLACED, THE REDUCTION IN PIPE SIZE SHALL ONLY OCCUR AT THE THREADED FITTING WHICH ADAPTS THE PIPE TO THE PIECE OF EQUIPMENT.

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Contact: Nikki Talarico



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1-800-227-2600

PLANS PREPARED BY:
ROBERT MITCHELL & ASSOCIATES
22982 BI TORO ROAD LAKE FOREST, CA. 92630
(949) 581-9112 FAX (949) 581-9809
web: rmaadecolutions.com
contact: Dan Wilson

PLANNING & DESIGN
LANDSCAPE ARCHITECTURE

BENCHMARK: E2-P2

CITY OF RIVERSIDE
CHISELED SQUARE ON THE TOP OF CURB AT THE WESTERLY END OF A GATEWAY FRONTING THE SOUTHEAST CORNER OF INDIANA AVENUE AND FILLMORE STREET.

ELEVATION: 738.410

MARK: REVISIONS
REVIS: IRRIGATION FOR RELOCATED WALL
APPR. DATE: 12/10/03
DESIGNED BY: MJ DRAWN BY: MJ CHECKED BY: RWM

**CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT**

APPROVED BY: DATE: 12/10/03
PRINCIPAL ENGINEER: [Signature]
TRAFFIC DIVISION: [Signature]
STREET SERVICES: [Signature]
PLANNING DEPARTMENT: [Signature]

IRRIGATION PLAN

LA SIERRA AVENUE

A.P.N. 136-030-003-8, 136-030-001-6 and 136-030-009-4

SCALE: 1"=20'-0"

9/16/03

J.N. 6371

PW03-0100
L-2
(R-3726-L)
SHEET 3 OF 7

INDEXED 10-12-04

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 (PC-4393-R/PRF03-0008)

SECTION 02441 - IRRIGATION

PART 1 - GENERAL

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

1.02 SCOPE: The Work of this Section shall consist of furnishing all labor, materials, equipment, appliances and services necessary for the execution and completion of all Irrigation Work as shown on the Plans and as described in the Specifications including, but not necessarily limited to, the following:

- Provide complete operating irrigation systems;
Installation of new irrigation systems as necessary to provide complete operating irrigation systems for all planting areas within the Work Limits;
120 volt electrical service for and connection to the controller;
Irrigation Controller within lockable Controller Enclosure as designated on the Approved Plans;
Coordination with Work of other Sections;
Testing;
Clean-up;
Replacements, Repairs, Guarantees and Warranty Work.

1.03 RELATED WORK:
Planting 02480

1.04 SUBMITTALS:

A. Materials List: Contractor shall submit a complete materials list for approval by the Park Projects Inspector prior to performing any Work. Catalog data and full descriptive literature must be submitted whenever the use of items different than those specified is proposed.

Table with 4 columns: Item, Description, Manufacturer, Model No.
1 Pressure Supply Line Lasco Sch. 40
2 Lawn Head Rainbird 2400
etc. etc.

B. Record Prints: Record accurately on one set of blue-line prints all changes in the Work constituting departures from the Plans, 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 Park Projects Inspector.

- a) Point of connection.
b) Routing of irrigation pressure lines (dimension maximum 100 feet along routing).
c) Ball valves.
d) Irrigation remote control valves.
e) Quick coupling valves.
f) Routing of control wires.
g) Related equipment (as may be directed).
5. Maintain record prints on site at all times.

1.05 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 a minimum of 48 hours (two working days) in advance for all inspections including the following:
1. Pressure supply line installation and testing
2. System layout
3. Coverage tests
4. Final Inspection

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

D. Requirements for Inspection: No inspection is to commence without "record" prints available on the site. In the event 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 may be canceled.

E. 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 Park Projects Inspector.

F. Coverage test: When the irrigation system is completed, Contractor shall perform a coverage test in the presence of the Park Projects Inspector to determine if the water coverage for planting areas is complete and adequate. This test must be accepted by the Park Projects Inspector before planting may commence.

G. 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 Park Projects Inspector or Inspector's designated representative.

1.06 TURNOVER ITEMS:

A. Controller Charts:
1. "Record" prints must be approved by the Park Projects Inspector before charts are prepared.
2. Provide one controller chart for each automatic controller. The chart shall show the entire area covered by the controller, preferably in a single sheet. The chart shall be a reduced copy of the approved "record" print.

B. Operation and Maintenance Manuals: Within a minimum of 14 calendar days prior to acceptance of construction, prepare and deliver to the Park Projects Inspector all required descriptive materials, properly prepared in two individually bound copies of the operation and maintenance manual.

C. Materials to be furnished: The following items shall be supplied as part of this Contract and shall be turned over to the Park Projects Inspector at the conclusion of the Project at the Final Acceptance Inspection:
1. 4% additional irrigation heads of each type and spray pattern shown.
2. Two (2) special tools/wrenches for disassembly and adjustment of each type irrigation equipment/heads installed that require such special tools/wrenches.
3. Two keys for each type of automatic controller.

- Two quick coupler "quills" with a 3/4" bronze hose bib, bent nose type with hand wheel and two quick coupler locking lid keys.
5. One valve box cover key.
6. "Record" prints and Mylar 'As-Built Plans'.
7. Remove and turn over backflow device valve handles.
8. Documentation of Water Department's inspection and acceptance of backflow device.

1.07 GUARANTEE:

A. General: The entire irrigation 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 Final Acceptance of the Work as documented by the Notice of Completion filed with the Riverside County Recorder's Office.

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

GUARANTEE FOR IRRIGATION SYSTEM

PROJECT: _

LOCATION:

We hereby guarantee the irrigation system we have furnished and installed against defects in materials and workmanship, ordinary wear and tear and unusual abuse, or neglect excepted, and that the Work has been completed in accordance with the Plans and Specifications. We agree to repair or replace any or all of the 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 after the date the Notice of Completion for the above named Project is filed with the County Recorder by the City of Riverside, California, at no additional cost to City.

PRINTED NAME & TITLE:

SIGNATURE:

ADDRESS:

PHONE: ()

C. Operational Instruction: After the system has been completed, Contractor shall instruct the Park Projects Inspector in the operation and maintenance of the system and shall furnish a complete set of operating instructions.

D. Trench Settlement: Any settling of trenches which may occur during the one-year period following acceptance shall be repaired to City's satisfaction by Contractor without any additional expense to City.

PART 2 - MATERIALS

2.01 GENERAL: All materials shall conform with Section 212 - 2 IRRIGATION SYSTEM MATERIALS of the Standard Specification except as modified herein.

2.02 PIPE AND FITTINGS:

- A. 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.
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 Steel Pipe 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 Plans are nominal inside diameter, unless otherwise noted."

C. Plastic Pipe:
1. Add the following to Standard Specifications Section 212-2.1.3 Plastic Pipe for Use with Solvent Weld Socket or Threaded Fittings: "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."
2. Amend Standard Specifications Section 212-2.1.3 Plastic Pipe for Use with Solvent Weld Socket or Threaded Fittings 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."
3. Amend first sentence of Standard Specifications Section 212-2.1.4 Plastic Pipe for Use with Rubber Ring Gaskets 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 ex-filtration or infiltration, cracking or breaking."

D. Asbestos Cement Pipe (ACP): Is not approved for use on City projects.

2.03 VALVES AND VALVE BOXES:

- A. Valves:
1. Ball Valves: All ball valves shall be bronze bodied, capable of withstanding a minimum working pressure of not less than 150 psi.
2. Quick-Coupling Valves: Add the following to Standard Specifications Section 212-2.2.6 Quick Coupling Valves and Assemblies: Quick coupling valves shall have locking vinyl cover and shall be 1" in size.
3. Remote Control Valves: Add the following to Standard Specifications Section 212-2.2.4 Remote Control Valves:
a) Valves shall be spring-loaded, self-cleaning, packless diaphragm activated, of a normally closed type.
b) 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).
c) Valve shall close against flow without chatter and with minimum closing surge pressure (minimum 5 seconds closing time per valve).
d) Valve shall be completely serviceable in the field without removing valve body from line.

B. Boxes:
1. Concrete Valve Boxes: Add the following to Standard Specifications Section 212-2.2.7 Valve Boxes: 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. Ball valve boxes shall be round concrete boxes with non-hinged cast iron covers marked either "Ball Valve" or "G. V." with letters cast or tooled in the cover.

- 2. Plastic Valve Boxes: (For use on Drip Irrigation Systems only)
a) General: Valve boxes and covers shall be fabricated from a durable plastic material resistant to weather, sunlight and chemical reactions. The covers shall be secured with a hidden latch mechanism or bolts. The cover and box shall be capable of sustaining a load of 1,500 pounds. Valve box extensions shall be by the same manufacturer as the valve box. The box covers shall be factory embossed for the designated use and stenciled by the installer with 2" high letters in a contrasting color as noted below. Boxes and covers shall be as manufactured by AMETEK or City approved equal.
b) Rectangular Plastic Boxes and Covers: Shall be a minimum of 12" wide x 18 long", with depths as necessary to protect the valve and provide the clear dimensions as detailed and/or specified. The covers shall be embossed with words or initials to identify the use for the box (e.g. "Flush Valve" or the letters "F.V.", and Air Relief Valve or the letters "A.R.V.") as noted on the Plans.
c) Round Plastic Boxes and Covers: Shall be minimum 12" diameter, round boxes with covers embossed with words to identify the use for the box (e.g. "Quick Coupler Valve" or the letters "Q.C.V.") and shall be marked as noted on the Plans

2.04 BACKFLOW PREVENTION DEVICE: Add the following to Standard Specifications Section 212-2.3 Backflow Preventer Assembly: The backflow prevention unit shall be a reduced pressure type vacuum breaker of the size, manufacture, and model number as indicated on the Plans. If not indicated, the device shall be the same size as the water service and the manufacturer and model number shall be as approved by the Park Projects Inspector.
2.05 IRRIGATION HEADS: All irrigation heads shall be as shown on the Plans and shall conform with Section 212-2.4 Sprinkler Equipment of the Standard Specifications. All heads used on the same control valve shall be matched precipitation rate heads. All spray heads used in shrub areas shall be minimum 12" pop-up types.

2.06 ELECTRICAL MATERIALS:
A. Conduit: Amend Standard Specifications Section 212-3.2.1 Conduit to read: All conduit below grade shall be schedule 40 PVC of sufficient size to carry all proposed wiring. Conduit above grade shall be galvanized steel per the Standard Specifications. Low Voltage (24 volt) wiring shall be provided with a separate conduit/sleeve from both high voltage wiring (110/120 volt and higher) and the irrigation mainline sleeve.

B. Electrical Service: Materials for electrical service shall comply with the standard specifications, governing utility agency standards, and requirements of all applicable codes. Controllers serving landscape areas to be maintained by the City shall be powered through a non-metered electrical service.

C. Wire: Add the following to Standard Specifications Section 212-3.2.2 Conductors: "All low voltage conductors shall be 14 gauge for control and 12 gauge for common wires. All low voltage common wires shall be white with a colored stripe. Stripe color shall be different for each controller installed. All low voltage control wire shall be of one color other than white or green. A different color control wire shall be used for each controller installed."

2.07 CONTROLLER UNIT: Add the following to Standard Specifications Section 212-3.3 Controller Unit:
A. Controller: Shall be wall mounted type, as indicated on the Plans, with a heavy duty watertight case and locking hinged cover, installed within a lockable steel enclosure.

B. Controller Enclosure: Shall be metal, sized to fit the controller and the other electrical components as required per Standard Detail 4060, LeMeur - Type V, Strongbox - sized to fit unit, or City approved equal.

PART 3 - EXECUTION

3.01 GENERAL: All Work shall conform with Section 308 LANDSCAPE AND IRRIGATION INSTALLATION 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.

Add the following to Standard Specifications Section 308-5.1 General:
A. Irrigation System Design & Water Supply:
1. The irrigation system design shall be upon an available water pressure of 50 p.s.i. at a flow rate of 12 g.p.m. Individual stations are designed to this minimum p.s.i. The system is also designed to withstand a maximum pressure of 65 p.s.i. Contractor shall verify the size of the existing water supply/meter and the existing operating water pressure at the water supply location shown on the Plans prior to starting construction. Contractor shall notify the Park Projects Inspector in writing of any discrepancies noted. Failure to provide such written notification may cause Contractor to provide for modifications to the irrigation system as necessary to provide for a fully operational system providing 100% coverage at the operating pressure available, all at no additional cost to City.
2. Connection to, or the installation of, the water supply shall be at the location shown on the Plans. Minor changes caused by actual site conditions shall be made at no additional cost to City.

B. Electrical Service: Contractor shall provide a non-metered electrical service (for areas to be maintained by the City) as required.
C. Code Requirements: Prior to all Work of this Section, Contractor shall 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 the 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 Plans or in the Specifications is in conflict with local codes, immediately notify the Park Projects Inspector prior to installing the Work. If this notification is not provided, Contractor shall assume full responsibility for the cost of all revisions necessary to comply with all codes.

D. Grades: Contractor is to keep within the specified material depths with respect to finish grade. Failure to obtain specified material depths may subject Contractor to adjusting the grades or depth of lines until acceptable depths of cover are achieved, all as directed by the Park Projects Inspector and at no additional cost to City.

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

F. Maintain Record Prints: Contractor shall maintain "record" prints on site at all times. Upon completion of the Work, transfer all "record" information on changes and dimensions to reproducible sepia Mylar or photo Mylar 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 Trench Excavation and Backfill: 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, Subparagraph 2 Waterlines continuously pressurized) 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, Subparagraph 3 Lateral sprinkler lines) to read: Lateral irrigation lines - minimum 12 inches and maximum 16 inches. All main lines and lateral lines running parallel to other such lines shall have a minimum horizontal separation of 12".
4. Add the following to Standard Specifications Section 308-2.2 Trench Excavation and Backfill: Where it is necessary to excavate adjacent to existing trees, 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 General: All surface improvements damaged or removed as a result of Contractor's operations shall be reconstructed by 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. Backfills:
1. Amend Standard Specifications Section 308-2.2 Trench Excavation and Backfill 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."

2. Add the following to Standard Specifications Section 308-2.2 Trench Excavation and Backfill:
a) Flooding in lieu of tamping is not allowed without specific prior written approval of the Park Projects Inspector.
b) 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 Irrigation Pipeline Installation, General:
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 in writing by Park Projects Inspector. When approved, all necessary repairs and replacements will be made at no additional cost to 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, ball 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 Plastic Pipeline:
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 Installation of Valves, Valve Boxes, and Special Equipment: 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:

A. Valves:
1. Amend Standard Specifications Section 308-5.3 Installation of Valves, Valve Boxes, and Special Equipment to read: Valves shall be the same size as the pipeline in which valves are installed unless otherwise specified on the Plans. Valves shall be installed a minimum of three feet in horizontal distance apart, each with its own connection to the pressure main line.
2. Amend Standard Specifications Section 308-5.3 Installation of Valves, Valve Boxes, and Special Equipment to read: Install quick coupler valves, valves, heads and fittings per the Park and Recreation Department's standards at maximum 75 o.c., and maximum 50' from ends of all planting areas.
3. Add the following to Standard Specifications Section 308-5.3 Installation of Valves, Valve Boxes, and Special Equipment: Valves shall be installed in shrub areas whenever possible. No valves or valve boxes other than quick coupler valves shall be installed within a designated turf area.

B. Valve Boxes:
1. General: Valve boxes shall be installed with a minimum of 2" vertical clearance between the box and all pipelines and valve components and/or special equipment within the box. Valve boxes found resting on either the valve, special equipment or pipelines shall be cause for rejection of the installation.
2. Uses:
a) Concrete Valve Boxes:
1) Rectangular: Unless noted otherwise on the Plans, each remote control valve, all wire splices, and each master control valve shall be installed within a rectangular concrete valve box.
2) Round: Unless noted otherwise on the Plans, each quick coupler valve (except where located within the infield of a baseball/softball field) and each ball valve shall be installed within a round concrete valve box.
c) Plastic Valve Boxes: (for drip irrigation systems only)
1) Rectangular: Unless noted otherwise on the Plans, each drip irrigation flush valve, and each air relief valve shall be installed within a rectangular plastic valve box.
2) Round: Unless noted otherwise on the Plans, ball valves shall be installed within a round plastic valve box.

3.06 IRRIGATION HEAD INSTALLATION: Amend Standard Specifications Section 308-5.4.1 Sprinkler Head Installation and Adjustment, General to read: Irrigation heads shall be installed as designated on the Plans and per the Park and Recreation Department's standard details. Upon coverage testing of the system if 100% coverage is not afforded by the system as designed, additional heads shall be added as necessary to achieve 100% coverage.

3.07 CONTROLLER INSTALLATION: Add the following to Standard Specifications Section 308-5.5 Automatic Control System Installation:

A. Controller Installation: The controller location, as shown on the Plans, is diagrammatic. The final location of the controller(s) shall be as approved by the Park Projects Inspector before installation. Typical controller location shall be mid-block 3' behind the sidewalk. Contractor shall install all conduit runs, 120V wire and cable, and 24V control wire, as necessary for a complete and operational system.
B. Controller Enclosure:
(1) Conventional Type: The controller shall be wall mounted within a LeMeur vandal resistant enclosure, unless noted otherwise on the Plans. 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, and shall have the service address painted in a contrasting color on the enclosure door; submit color 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.

B. Coordination of Controller Location with Various Service Connections: Contractor shall coordinate the electrical service with the approved controller location. Contractor shall verify the locations of 120V power prior to installing controller(s) and shall coordinate final assembly mounting locations with the needed utilities. Contractor shall furnish and install grounding rods and ground wires for each controller. Ground rods shall be installed a minimum of eight feet from their respective controller housing and the ground wire run back to the controller.

C. Controller Connections: Contractor shall inspect, test, and certify all low voltage control wire splices and ground rod installations as applicable. Any repairs as necessary to provide properly operating wiring are to be made by Contractor at no additional cost to City. After repairs are satisfactorily completed, Contractor shall connect the ground wires to the ground rods and the controller(s).

D. Controller Programming: 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:

A. Wiring: Add the following to Standard Specifications Section 308-5.5 Automatic Control System Installation:
1. All splice connections shall occur in a valve box. All wire runs between the valve and the controller shall be a continuous run with no splices unless noted otherwise on the Plans.
2. 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: Amend Standard Specifications Section 308-5.6.2 Pipeline Pressure Test to read: Pressure test the mains - minimum 2 hours at 150 PSI. Add the following to Standard Specifications Section 308-5.6.2 Pipeline Pressure Test: Center-load all plastic pipe prior to pressure testing. The entire system shall be operating properly before any planting operations commence.

3.10 COMPLETION CLEANING: Add the following to Standard Specifications Section 308 LANDSCAPE AND IRRIGATION INSTALLATION: 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

Table with 2 columns: Specifications, PW03-0100
LA SIERRA AVENUE
A.P.N. 136-030-003-8, 136-030-001-6 and 136-030-009-4
SCALE: 9/16/03 J.N. 6371

RICHMOND AMERICAN HOMES - INLAND EMPIRE
2191 5TH STREET, SUITE 105 - NORCO, CALIFORNIA 92860
phone (909) 738-8318 fax (909) 738-8790 e-mail ntalarico@mcdh.com
Contact: Nikki Talarico



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ROBERT MITCHELL & ASSOCIATES
LAND SOLUTIONS
22982 EL TORO ROAD LAKE FOREST, CA. 92630
(949) 581-2112 FAX (949) 581-9899
www.rmaassociates.com

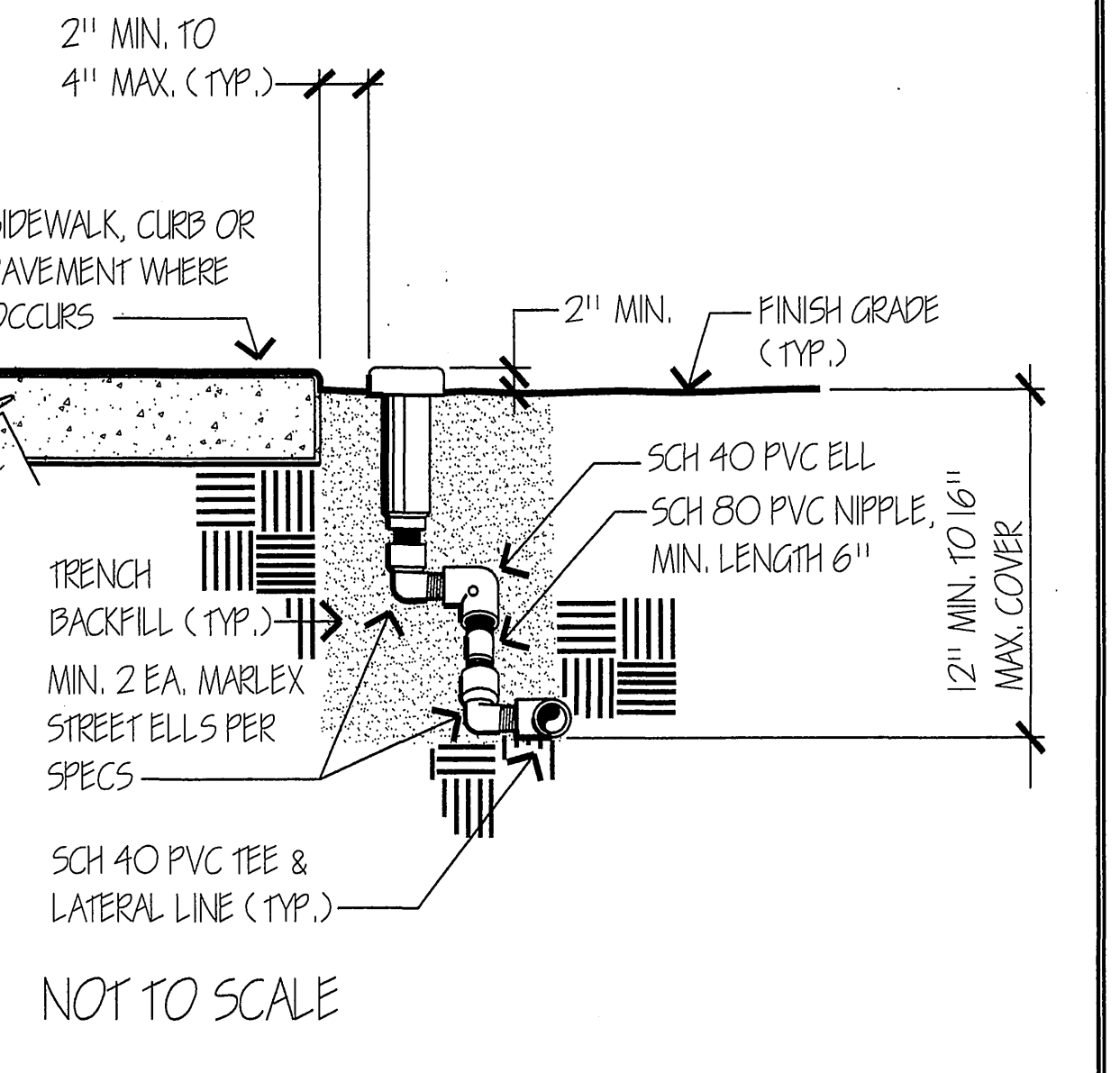
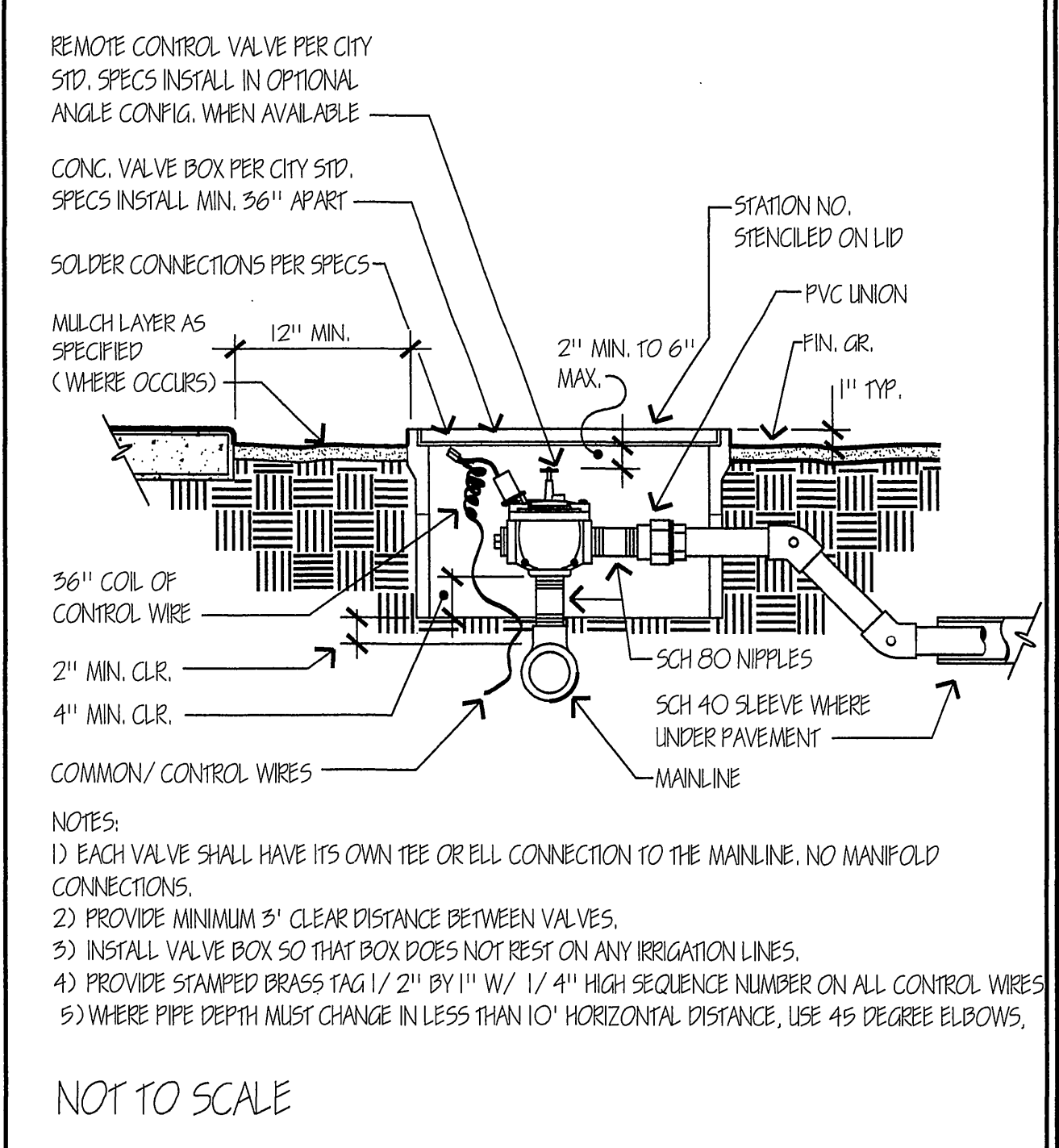
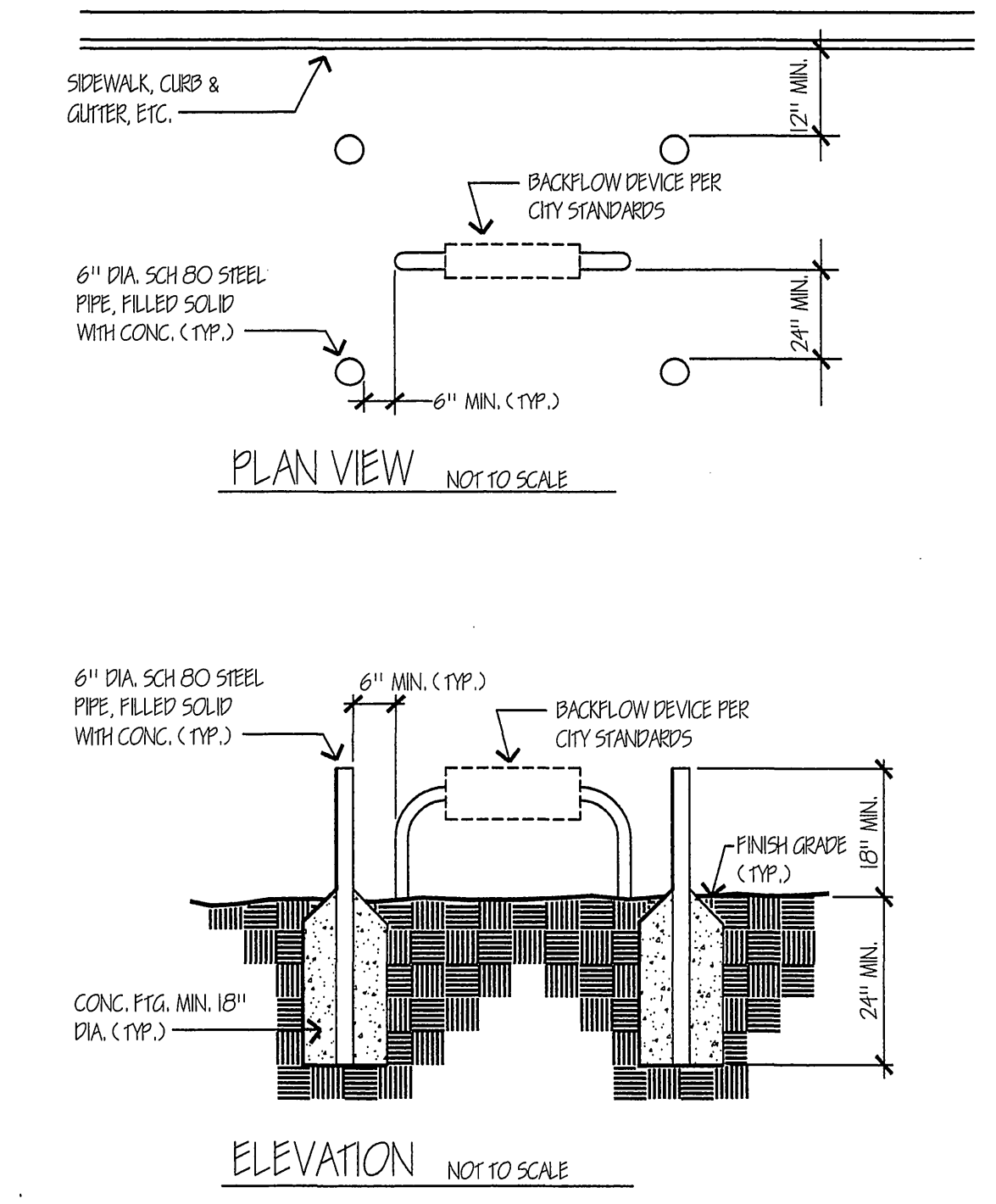
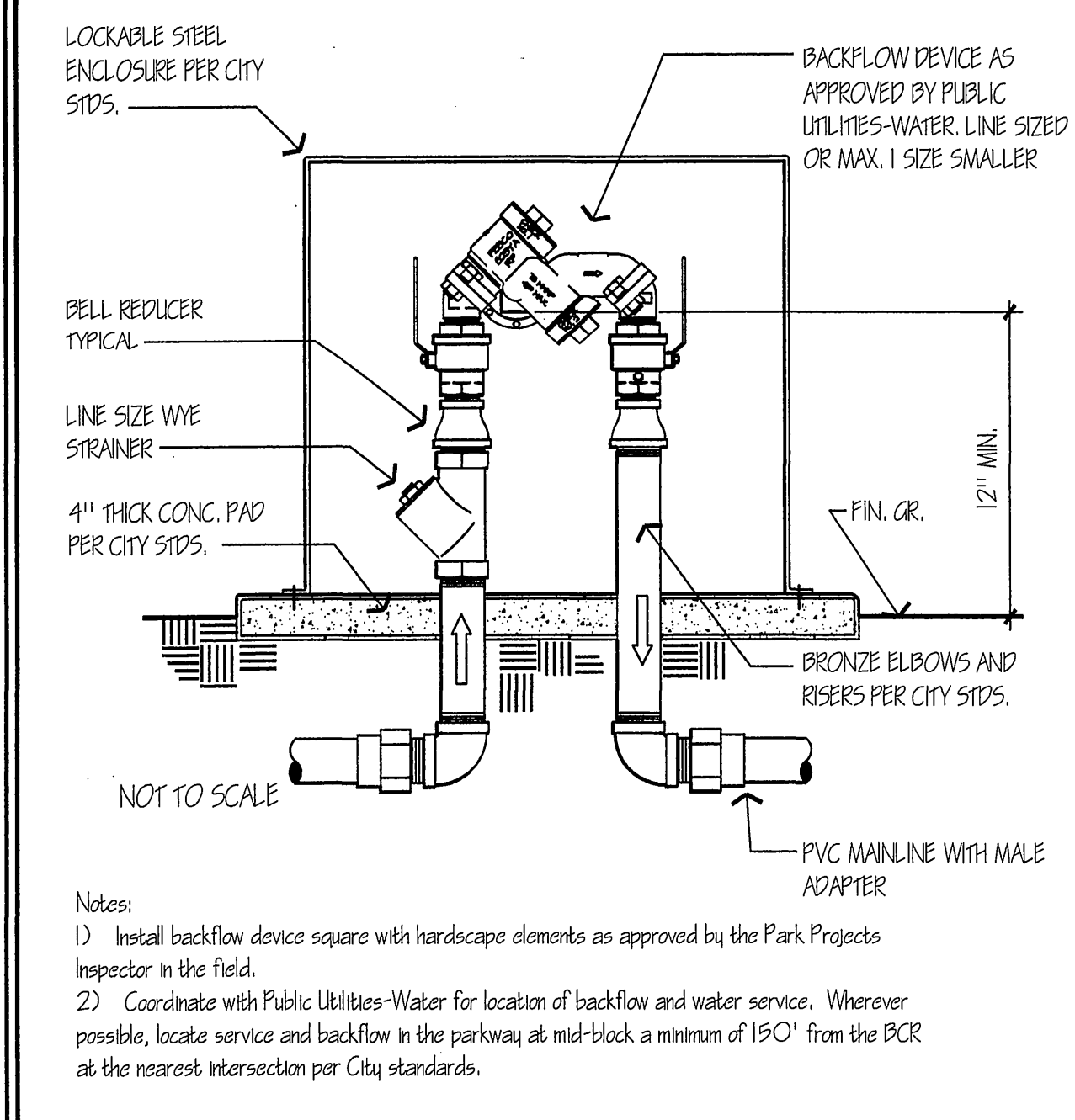
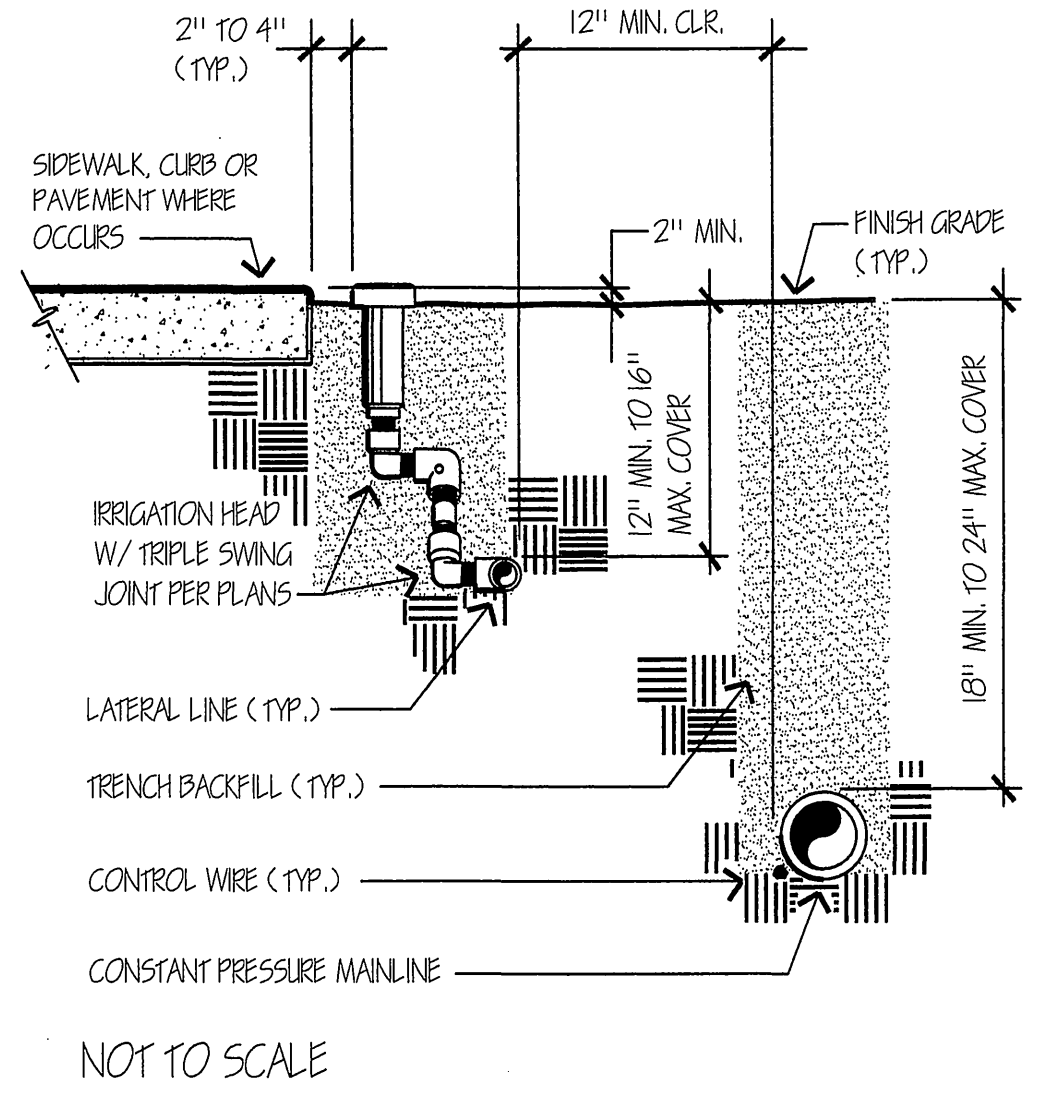
BENCHMARK: E2-P2
CITY OF RIVERSIDE
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ELEVATION: 738.410

Table with columns: MARK, REVISIONS, APPR., DATE. Includes design and drawing information.

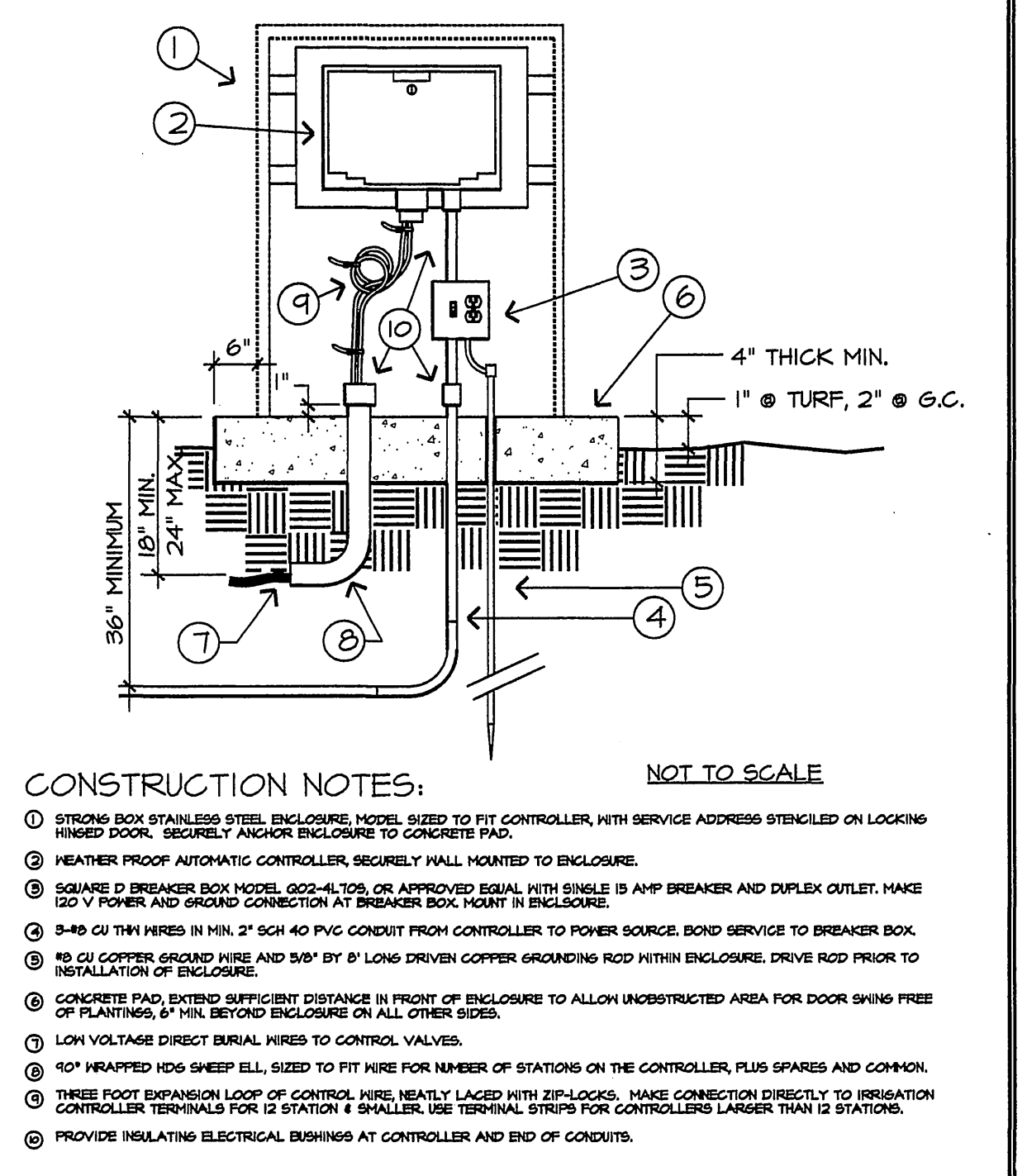
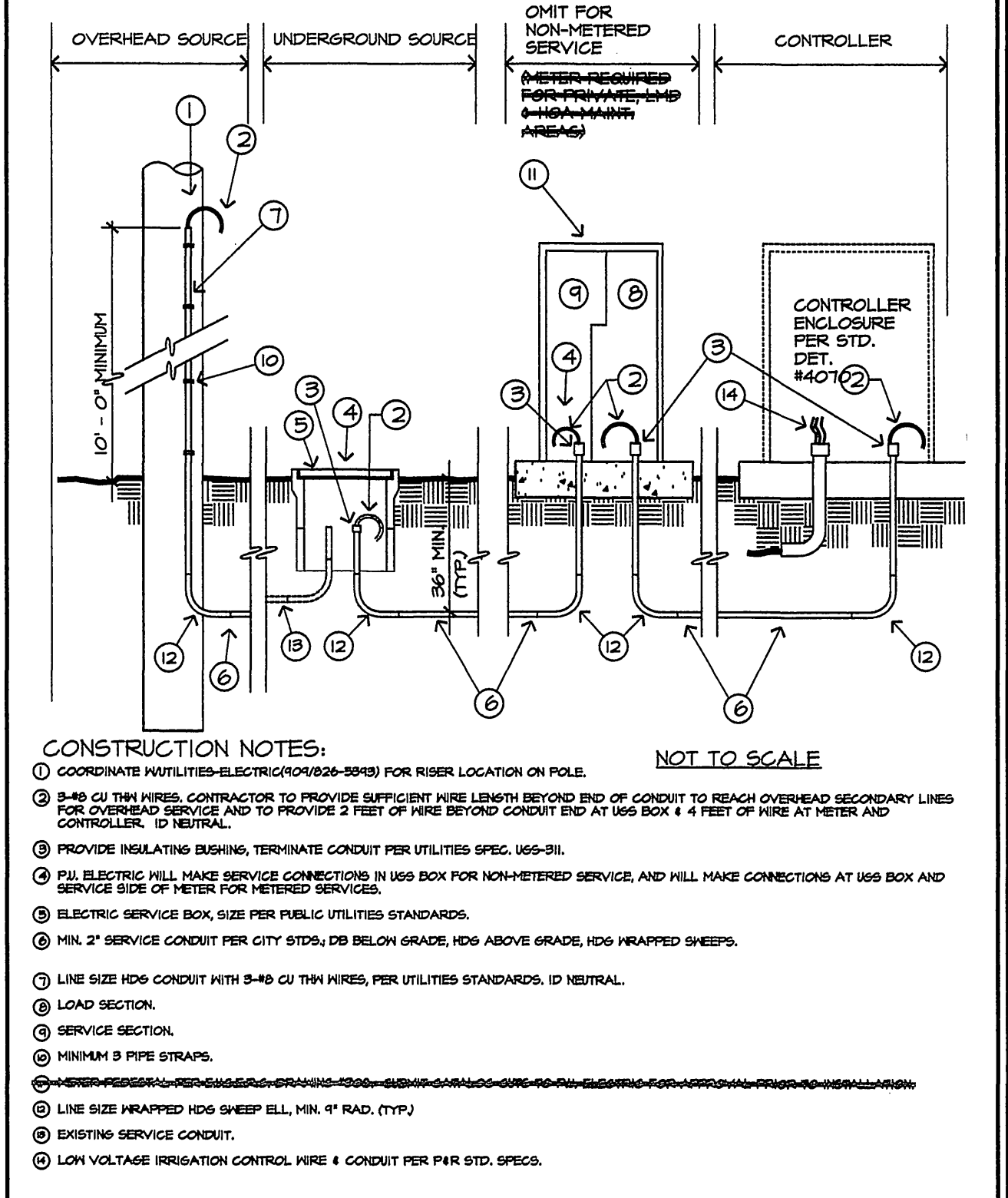
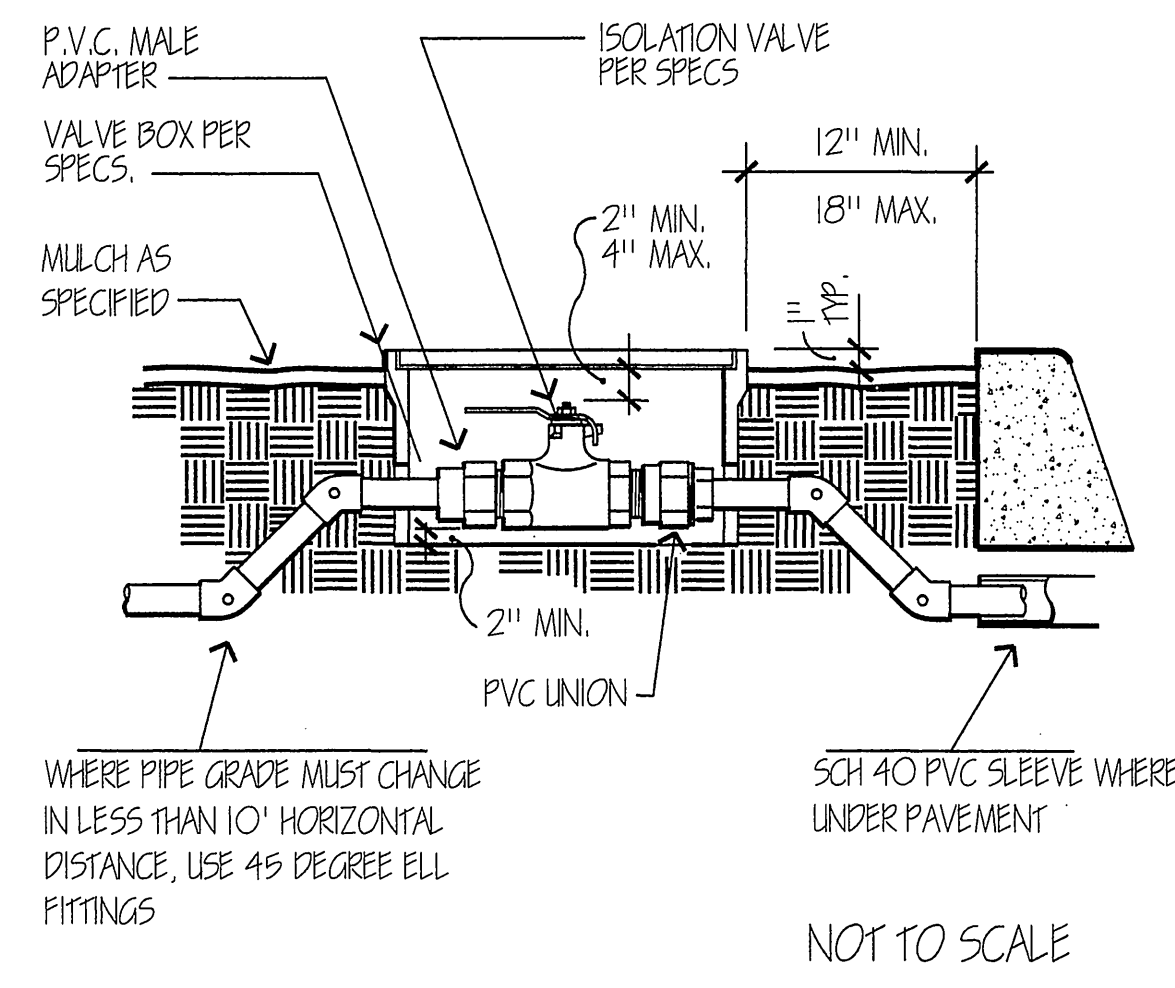
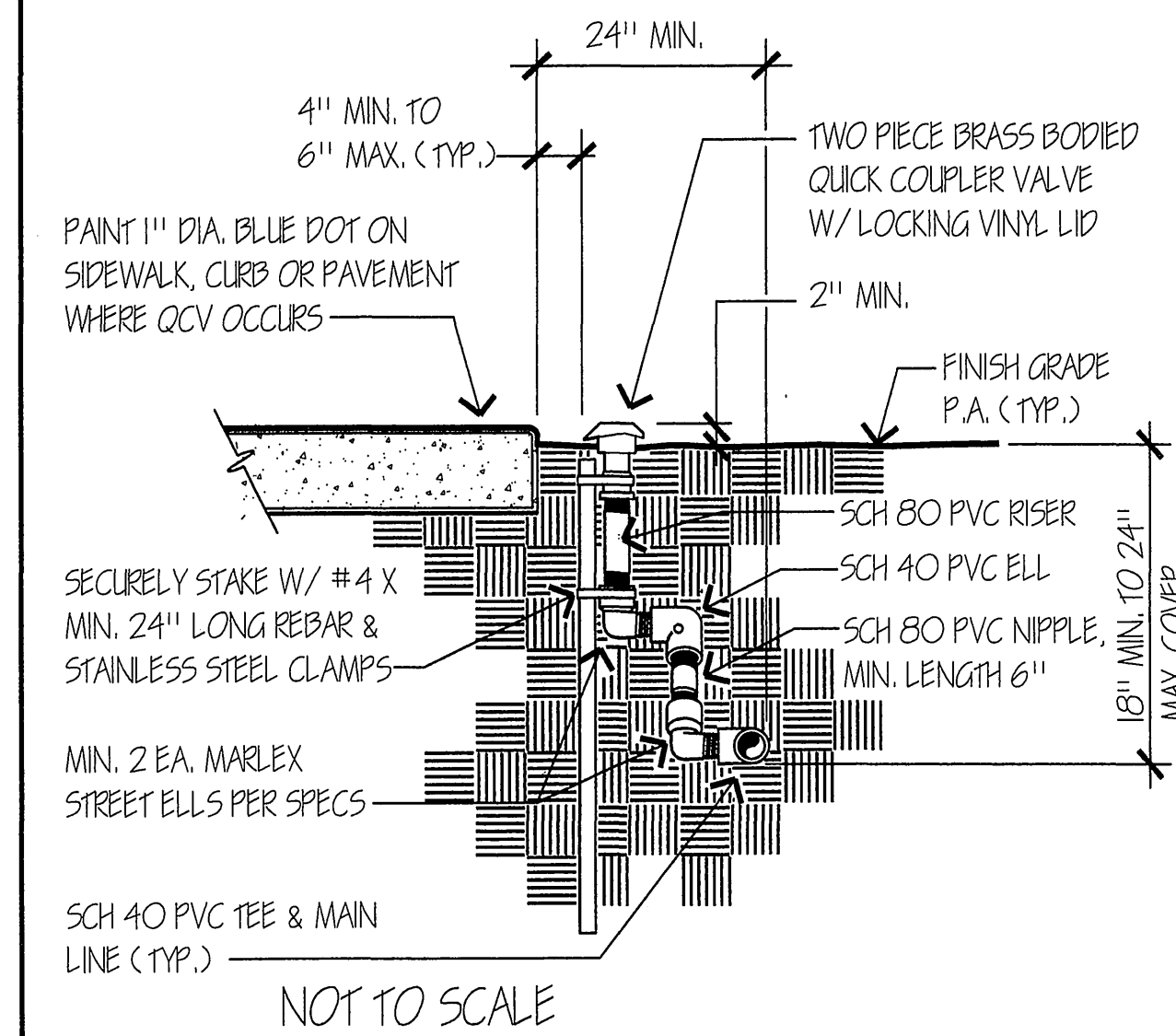
CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT
APPROVED BY: DATE BY:
PRINCIPAL ENGINEER: 12-04-02
PARK DEPARTMENT: 1-1-03
TRAFFIC DIVISION:
STREET SERVICES:
DATE: 1/20/04

Table with 2 columns: SPECIFICATIONS, PW03-0100
LA SIERRA AVENUE
A.P.N. 136-030-003-8, 136-030-001-6 and 136-030-009-4
SCALE: 9/16/03 J.N. 6371
INDEXED 10-12-04

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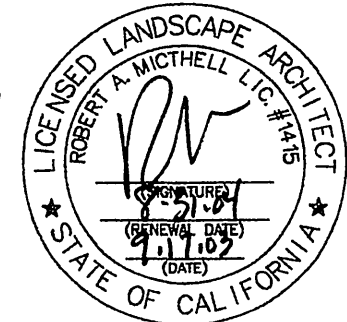


Approved BJ Date 08/28/09 Revised Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No. 4010	Approved BJ Date 08/28/09 Revised Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No. 4011	Approved BJ Date 08/28/09 Revised Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No. 4019	Approved BJ Date 08/28/09 Revised Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No. 4030	Approved BJ Date 08/28/09 Revised Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No. 4040
	TRENCH AND LINE PLACEMENT			REDUCED PRESSURE BACKFLOW DEVICE			BACKFLOW BARRIER POSTS			REMOTE CONTROL VALVE			IRRIGATION SPRAY HEAD	



Approved BJ Date 08/28/09 Revised Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No. 4050	Approved BJ Date 08/28/09 Revised Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No. 4052	Approved BJ Date 05/01/02 Revised Date 08/28/09	Park and Recreation Department CITY OF RIVERSIDE	Detail No. 4062	Approved BJ Date 05/01/02 Revised Date 11/21/02	Park and Recreation Department CITY OF RIVERSIDE	Detail No. 4070
	QUICK COUPLER VALVE			ISOLATION VALVE IN BOX			ELECTRIC SERVICE			IRRIGATION CONTROLLER	

RICHMOND AMERICAN HOMES - INLAND EMPIRE
2191 5TH STREET, SUITE 105 - NORCO, CALIFORNIA 92860
phone (909) 738-8318 fax (909) 738-8790 e-mail ntarlarico@mdch.com
Contact: Nikki Talarico



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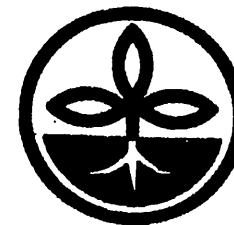
PLANS PREPARED BY:
ROBERT MITCHELL & ASSOCIATES
LAND SOLUTIONS
22982 EL TORO ROAD LAKE FOREST, CA 92630
(949) 581-2112 FAX (949) 581-5809
www.rmatland.com

BENCHMARK: E2-P2
CITY OF RIVERSIDE
CHISELED SQUARE ON THE TOP OF CURB AT THE WESTERLY END OF A CATCH BASIN FRONTING THE SOUTHERLY CURB OF INDIANA AVENUE AT THE SOUTHWEST CORNER OF INDIANA AVENUE AND FILLMORE STREET.
ELEVATION: 738.410

CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT
APPROVED BY: DATE: BY: APPROVED BY: DATE: BY:
PRINCIPAL ENGINEER: 12-01-02: J.N. CIVIL ENGINEER: J.N. Bad
PARK DEPARTMENT: 12-01-02: CIVIL ENGINEER
TRAFFIC DIVISION
STREET SERVICES

IRRIGATION DETAILS PW03-0100
LA SIERRA AVENUE L-5
A.P.N. 136-030-003-8, 136-030-001-6 and 136-030-009-4 (R-3726-L)
SHEET 6 OF 7
SCALE: AS NOTED 9/16/03 J.N. 6371

INDEXED 10-12-04 LHM



SOIL AND PLANT LABORATORY, INC.

Orange Office
Lab No. 47426
August 5, 2003

Robert Mitchell & Associates
22982 El Toro Road, Suite B
Lake Forest, CA 92630

Attn: Carol MacDonald

HIGHMARK FOR RICHMOND AMERICAN - JOB NO. 778 P

Attached are the results of analyses carried out on the soil sample collected July 29 by Bill Darlington from this office. At the time of sampling a chain link fence surrounded the site and therefore a soil sample was collected from along the La Sierra Ave. frontage. Once grading of the production area is complete we would recommend additional samples be collected for analysis.

Analytical Results

The pH is slightly alkaline and favorable with no lime detected. Salinity (ECe) is elevated and appears to be due to an abundance of soluble nitrogen, which may be the result of prior agricultural activity. Soluble sodium is only slightly elevated and is well balanced by calcium and magnesium as reflected by the low sodium adsorption ratio (SAR) value and therefore gypsum is not required.

Nitrogen is over 9 times the sufficiency level and as mentioned above is contributing to the salinity. Phosphorus, potassium, calcium and magnesium are well supplied. Iron is potentially low with the remaining micronutrients ample.

This soil is classified as gravelly sandy loam as determined utilizing the USDA soil classification methodology. The water infiltration rate is estimated at a midrange 0.3 inches per hour based on the particle size distribution data. The actual infiltration rate may vary depending upon the degree of compaction.

P. O. Box 6566, Orange, California 92663-6566 / (714) 282-8777 FAX (714) 282-8775
P. O. Box 153, Santa Clara, California 95052-0153 / (408) 727-0330 FAX (408) 727-5125
P. O. Box 1648, Bellevue, Washington 98009-1648 / (425) 746-6665 FAX (425) 562-9231



SOIL AND PLANT LABORATORY, INC.

Page 3
Robert Mitchell & Associates
August 5, 2003

Tree & Shrub Planting Guidelines (continued)

- 4. Organic material is not required in the backfill; however if you wish, the amended surface soil or a soil blend consisting of no more than 20% by volume organic matter can be placed in the upper 12 inches of backfill only.
5. Place slow release fertilizer tablets in the upper 12 inches of backfill at manufacturer's recommended rates.
6. Do not cover the original rootball with other soil. Often times a temporary soil berm is constructed around the outer edge of the rootball to help channel water into the rootball and then into surrounding soil.
7. Ideally a weed and turf free zone should be maintained just beyond the diameter of the planting hole. A 2-4 inch deep layer of coarse mulch can be placed around the tree or shrub; mulch should be kept a minimum 4-6 inches from the trunk.

Maintenance Fertilization

For turf, groundcover and mass planting areas uniformly broadcast sulfur coated urea at the rate of 5 lbs. per 1000 sq. ft. The first application should occur approximately 45 days after planting with repeat applications every 60-90 days or as growth and color dictate. In early fall and spring, substitute a complete fertilizer such as 16-6-8 or equal for the sulfur coated urea at the rate of 6 lbs. per 1000 sq. ft. to insure continuing supplies of phosphorus and potassium.

If we can be of any further assistance, please call.

JACK DAMONTE



SOIL AND PLANT LABORATORY, INC.

Page 2
Robert Mitchell & Associates
August 5, 2003

Comments

Following soil preparation and prior to planting thorough soaking irrigations should be made to help leach some of the excess soluble salts from the root zone. We would estimate that approximately 2.5-3 inches of water should be applied prior to planting to reduce the salinity in the surface soil.

The following are soil preparation recommendations, tree and shrub planting guidelines and maintenance fertilizer suggestions for your reference. These recommendations may require revision based on additional samples taken from the production area once grading is complete.

Due to the already favorable nutrient status of this soil no additional granular fertilizers will be required prior to planting.

Surface Soil Preparation for Turf, Groundcover and Mass Planting

Prior to amending, the surface soil in areas to be landscaped should be ripped or tilled to alleviate compaction, preferably to a 9 inch depth. Uniformly broadcast and blend the following with existing soil to a 6 inch depth.

AMOUNT PER 1000 SQ. FT.

3 cu. yds. nitrogen fortified organic amendment (compost* or redwood or fir sawdust)

*Rates may have to be adjusted depending on analysis of selected compost.

Hydroseed Fertilizer

For amended and unamended areas to be hydroseeded the following should be added to the hydromulch mix.

AMOUNT/ACRE

200 lbs. Nitroform (38-0-0, WIN 27%)

Tree & Shrub Planting Guidelines

- 1. Excavate planting pits at least twice the diameter of the rootball.
2. The top of the rootball should be at or slightly above final grade.
3. To improve soil chemistry, uniformly blend 2 lbs. of iron sulfate per cubic yard of backfill soil. Handle iron sulfate with caution since it will severely stain moist concrete.



Soil and Plant Laboratory, Inc.

ROBERT MITCHELL & ASSOCIATES
22982 El Toro Rd., Suite B
Lake Forest, CA 92630

COMPREHENSIVE SOIL ANALYSIS

P. O. Box 6566, Orange, California 92663-6566 / (714) 282-8777 FAX (714) 282-8775
P. O. Box 153, Santa Clara, California 95052-0153 / (408) 727-0330 FAX (408) 727-5125
P. O. Box 1648, Bellevue, Washington 98009-1648 / (425) 746-6665 FAX (425) 562-9231

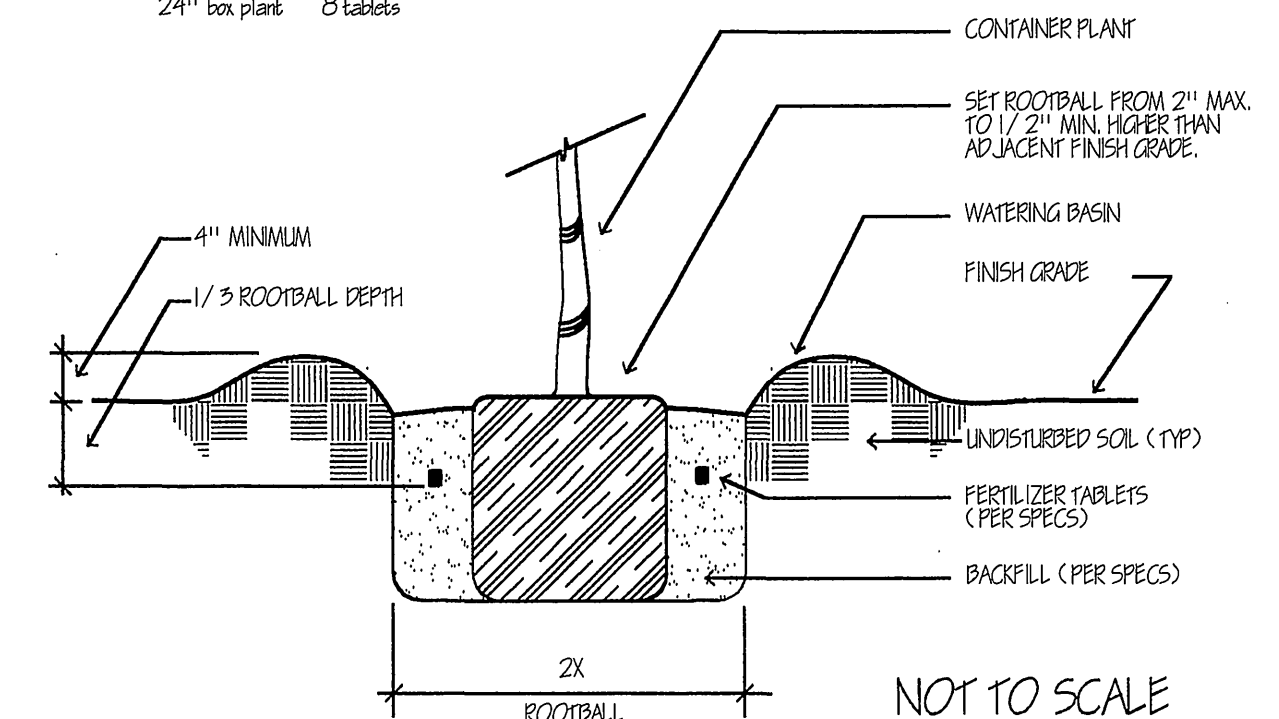
Table with columns for pH, ECe, NO3, NH4, PO4, K, Ca, Mg, Cu, Zn, Mn, Fe, Organic, and Sample Description & Log Number. Includes data for La Sierra Ave Frontage.

Table with columns for Saturation Extract Values (pH, Ca, Mg, Na, K, S, SO4, SAR) and Percent of Sample Passing 2 mm Screen (Gravel, Sand, Silt, Clay). Includes data for Gravelly Sandy Loam.

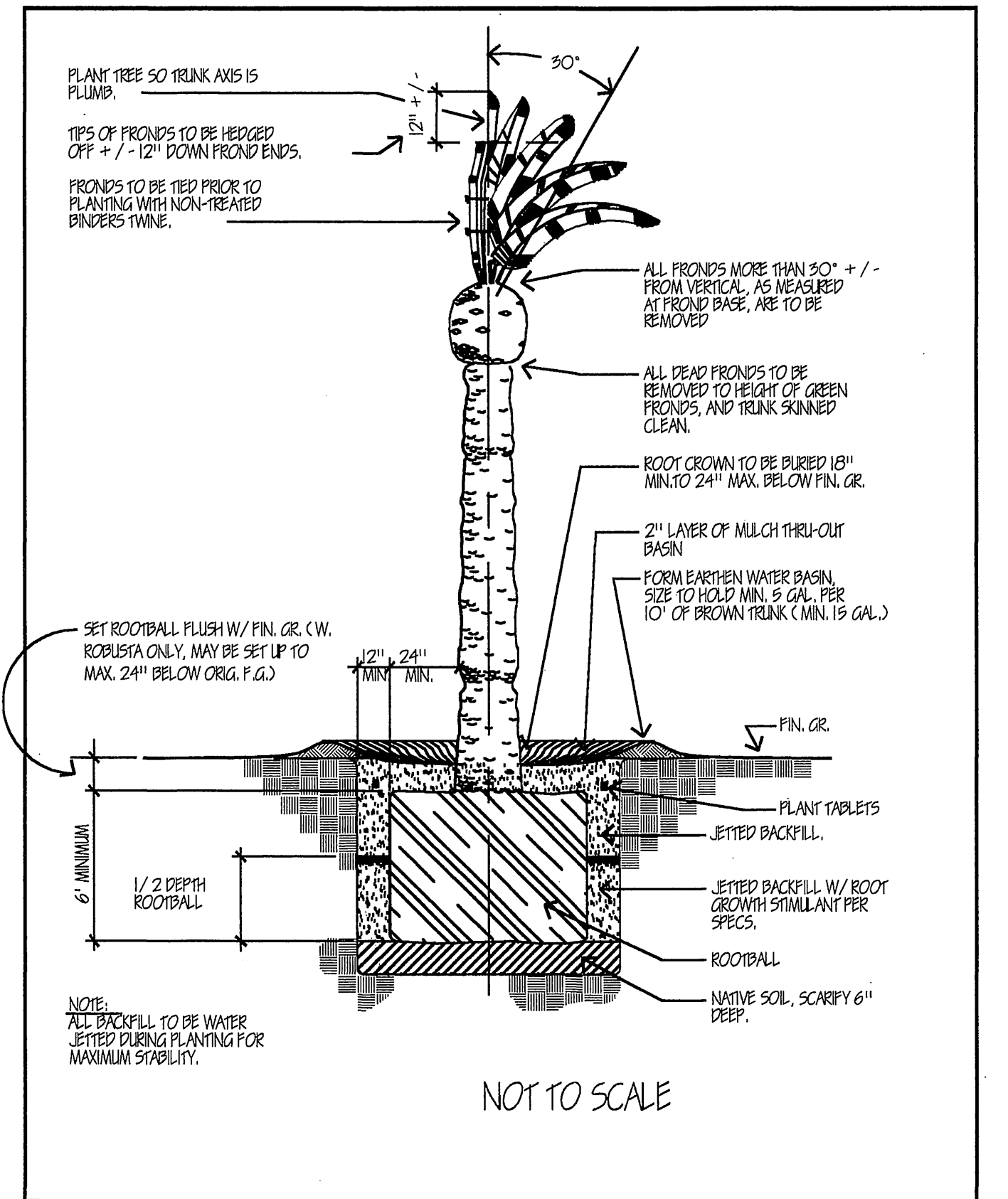
Sufficiency factor (1.0=sufficient for average crop) below each nutrient element. N factor based on 200 ppm constant feed. Half Saturation %=approx field moisture capacity. Salinity ECe (dS/m at 25 deg.C.) by sat ext method. Major elements by sodium chloride extraction (phosphorus by sodium bicarbonate extraction). Cu, Zn, Mn & Fe by DTPA extraction. SAR=Sodium adsorption ratio. Na=sodium (meq/l). TEC (listed below Half Sat.)=Estimated Total Exchangeable Cations (meq/kg) Gravel fraction expressed as percent by weight of oven-dried sample passing a 12mm (1/2 inch) sieve. Particle sizes in millimeters.

GENERAL PLANTING NOTES

- 1) Contact the Park Projects Inspector at 951-6254 two working days (48 hours) prior to installing any plant material.
2) Trees planted in turf areas shall be maintained with a minimum 12" radius around the tree free of turf throughout the maintenance period.
3) Watering basins may be removed after the maintenance period.
4) For staking information as applicable, refer to Standard Detail 1002.
5) For spacing information as applicable, refer to Standard Detail 1003.
6) For specification information, refer to City of Riverside Park and Recreation Department Standard Specifications, Section 02450 Planting.
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

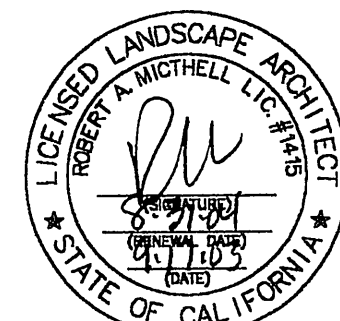


Approved: BJ Date: 08/28/03
Revised: Date:
Park and Recreation Department
CITY OF RIVERSIDE
PLANTING DETAIL
Detail No. 1001



Approved: BJ Date: 08/28/03
Revised: Date:
Park and Recreation Department
CITY OF RIVERSIDE
PALM TREE RELOCATION
Detail No. 1004

RICHMOND AMERICAN HOMES - INLAND EMPIRE
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contact: Dan Wilton

PLANNING
DESIGN
LANDSCAPE ARCHITECTURE

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Table with columns for MARK, REVISIONS, APPR., DATE, DESIGNED BY, DRAIN BY, CHECKED BY.

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
APPROVED BY: DATE BY:
PRINCIPAL ENGINEER: 12-04-04
TRAFFIC DIVISION: 1-16-04
STREET SERVICES

PLANTING DETAILS
PW03-0100
LA SIERRA AVENUE
A.P.N. 136-030-003-8, 136-030-001-6 and 136-030-009-4
SCALE: 9/16/03
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INDEXED 10-12-04