

SYMBOL LEGEND

	12" PVC DRAINLINE PER ADKAN ENG. STREET IMPROVE. PLANS
	DRAIN INLET LOCATION (PROPOSED)
	CONCRETE MAINTENANCE CURB SEE DETAIL THIS SHEET.

CONSTRUCTION NOTES

1.0 SITE WORK

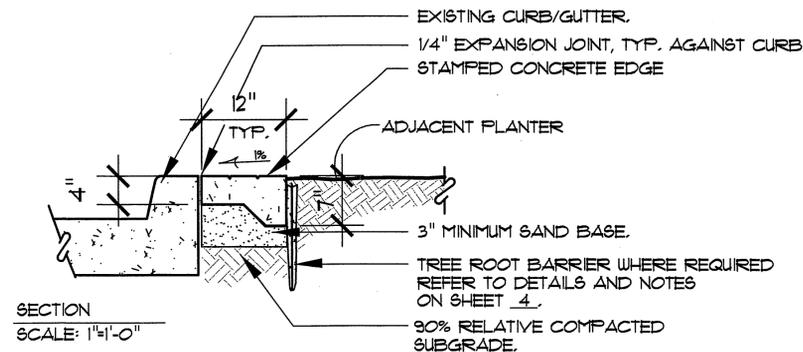
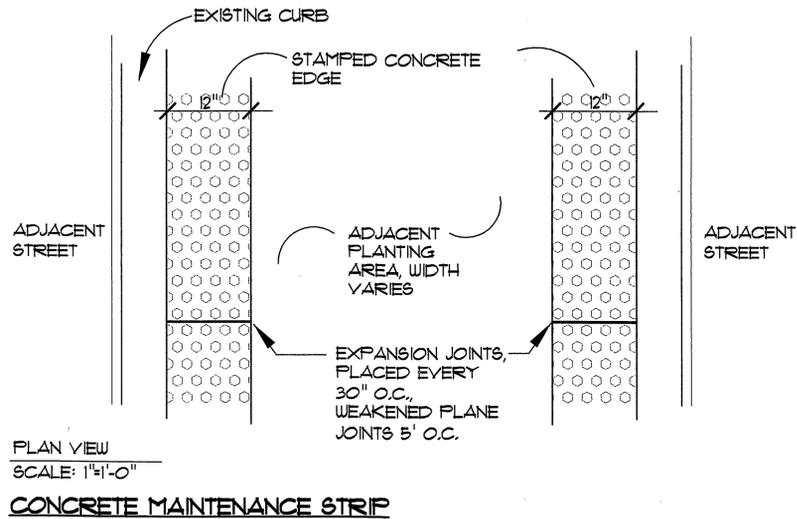
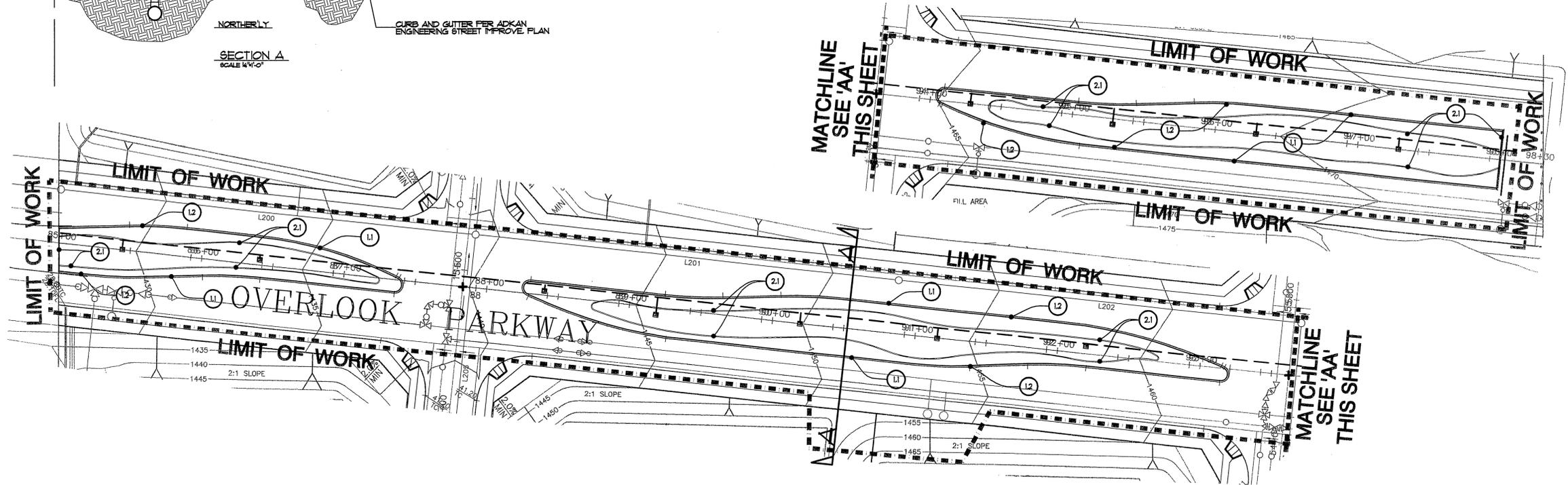
(11) CURB AND GUTTER PER ADKAN ENGINEERING CIVIL STREET IMPROVEMENT PLANS - N.I.C.

(12) STAMPED CONCRETE MAINTENANCE STRIP PER DETAIL THIS SHEET.

2.0 CONCRETE

(21) CONSTRUCT CONCRETE MAINTENANCE CURB PER DETAIL THIS SHEET.

NOTES:
REFER TO SHEET L-1 FOR ABBREVIATIONS AND GENERAL NOTES.



CONCRETE NOTES:

1. CONTRACTOR SHALL PREPARE A 12" X 36" ON-SITE MOCK-UP FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT AND CITY PRIOR TO INSTALLATION. SAMPLE SHALL BE CURED, AND STAMPED AS SPECIFIED.

- FINISH SCHEDULE:**
- 1. CONCRETE SHALL BE BOMANITE PATTERN 'RUNNING BOND USED BRICK' STAMPED CONCRETE.
 - 2. CONCRETE SHALL BE SALT & PEPPER GREY GRANITE COBBLE COLOR AND FINISH.

Claram 7/13/06

CONSTRUCTION PLAN AND MAINTENANCE STRIP DETAIL

IMPORTANT NOTICE
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City of Riverside
WATER SYSTEM

APPROVED BY: *MW Muel* DATE: *7/13/06*

City of Riverside
PUBLIC UTILITY DEPARTMENT
OVERHEAD AND UNDERGROUND

APPROVED BY: *Wm* DATE: _____

LANDSCAPE ARCHITECT IN RESPONSIBLE CHARGE

Robert B. Clark
ROBERT B. CLARK
RLA 4233 expires 12/31/06
DATE: *6/28/06*



MARK	REVISIONS	APPR.	DATE

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY: *DK* DATE: *7/13/06*
P.W. PRINCIPAL ENGINEER
P.W. STREET SERVICES
PLANNING DIVISION

APPROVED BY: *Alan Best*
CITY ENGINEER
DATE: *7/13/06*

LMD LANDSCAPE PLANS
OVERLOOK PARKWAY
MEDIANS TR 29515

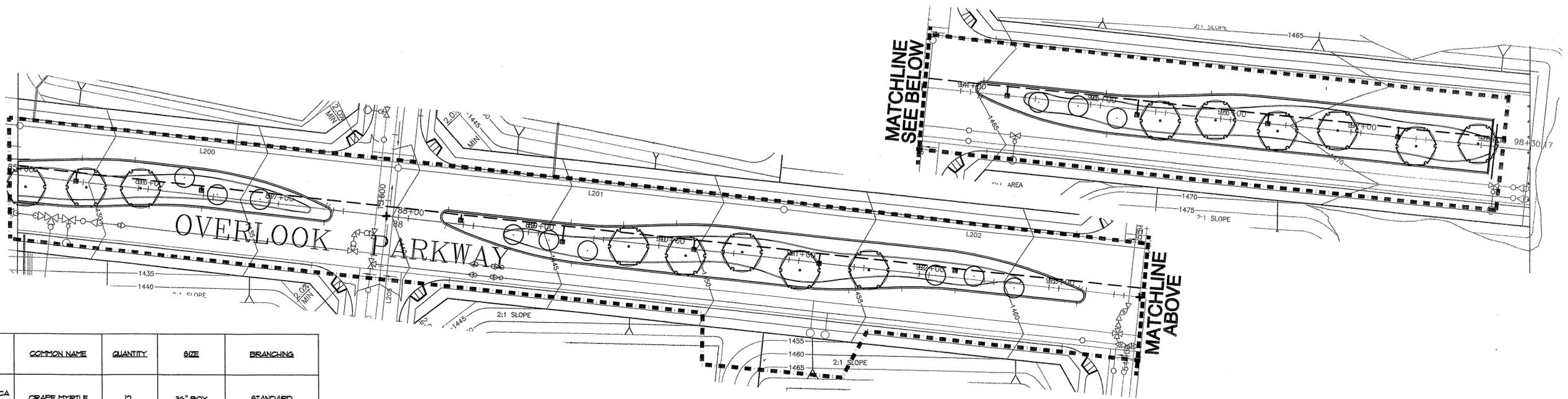
CONSTRUCTION PLAN

SCALE: 1" = 40'

ACCT. NO.
PWS-PC-03-3001-M1
R-3892-ML
PW06-0168
SHEET L-20F 9



I:\04-046 CAGNEY\LANCH\WDCAGNEY\LANCH\LMD_MEDIANS\CONCRETE.dwg, 6/23/2006 4:14:29 PM, Cpl 36.pcd

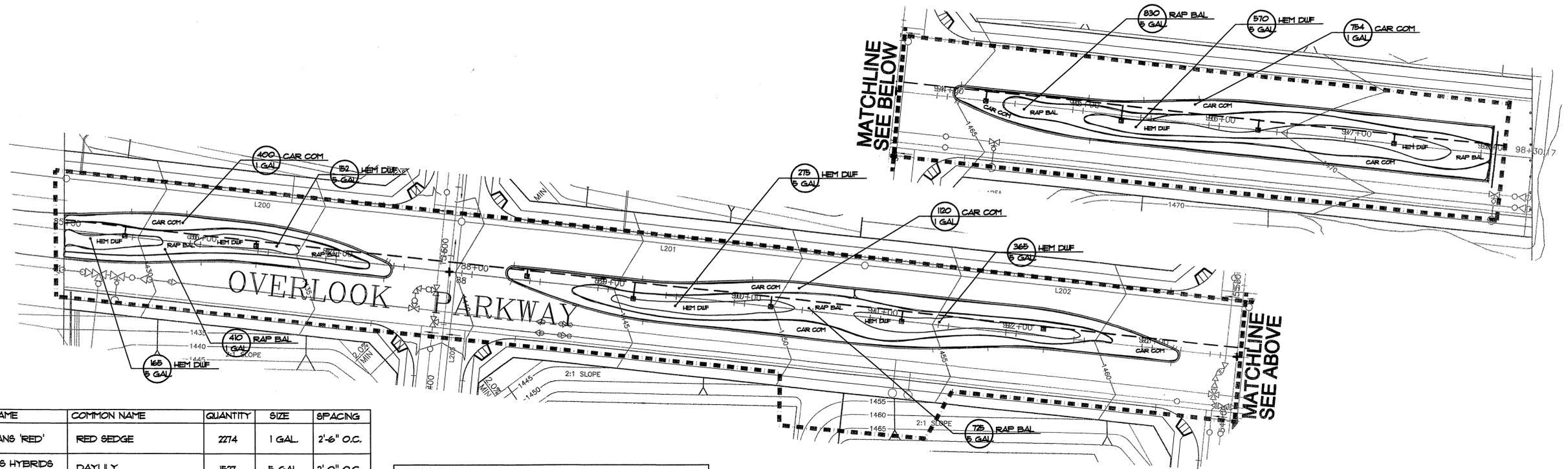


TREE LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	BRANCHING
	LAGERSTROEMIA INDICA MUSKOGEE	GRAPE MYRTLE	12	36" BOX	STANDARD
	PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	14	36" BOX	STANDARD

NOTE: REFER TO PLANTING DETAILS AND NOTES SHEET L-7; CONTRACTOR TO REFER TO CITY'S SPECIFICATIONS AND GENERAL NOTES. CONTRACTOR SHALL FURNISH AND INSTALL FERTILIZER AND AMENDMENTS PER THE SOILS REPORT AS RECOMMENDED.

TREE PLANTING PLAN



QUANTITY PLANT
SIZE

SHRUB LEGEND

SYMBOL	ABBREVIATION	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	SPACING
	CAR COM	CAREX COMANS 'RED'	RED SEDGE	2274	1 GAL	2'-6" O.C.
	HEM HYB	HEMEROCALLIS HYBRIDS ORANGE	DAYLILY	1527	5 GAL	2'-0" O.C.
	RAP BAL	RAPHIOLEPIS 'BALLERINA'	INDIAN HAWTHORNE	1265	5 GAL	2'-6" O.C.

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MULCH NOTE:
MULCH ALL LANDSCAPE AREAS (EXCEPT HYDROSEED AREAS) WITH A 3" LAYER MINIMUM OF FOREST FLOOR (0'-4"), AS MANUFACTURED BY AGUINAGA FERTILIZER COMPANY OR APPROVED EQUAL.

AGUINAGA FERTILIZER CO.
PHONE: (949)-786-2828
FAX: (949)-786-2874

SHRUB PLANTING PLAN



City of Riverside
WATER SYSTEM

APPROVED BY *MW McRed*

City of Riverside
PUBLIC UTILITY DEPARTMENT
OVERHEAD AND UNDERGROUND

APPROVED BY *Wm*

LANDSCAPE ARCHITECT IN
RESPONSIBLE CHARGE

ROBERT B. CLARK
RLA 4233 expires 12/31/06

DATE *6/28/06*



MARK	REVISIONS	APPR.	DATE

DESIGNED BY *KL/BC*, DRAWN BY *JC/EM/KL*, CHECKED BY *KL/BC*

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY
P.W. PRINCIPAL ENGINEER
P.W. STREET SERVICES
PLANNING DIVISION

BY *KL* DATE *7/31/06*

APPROVED BY
CITY ENGINEER
DATE *7/31/06*

LMD LANDSCAPE PLANS
OVERLOOK PARKWAY
MEDIANS TR 29515

TREE AND SHRUB PLANTING PLAN

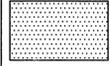
SCALE: 1" = 40'

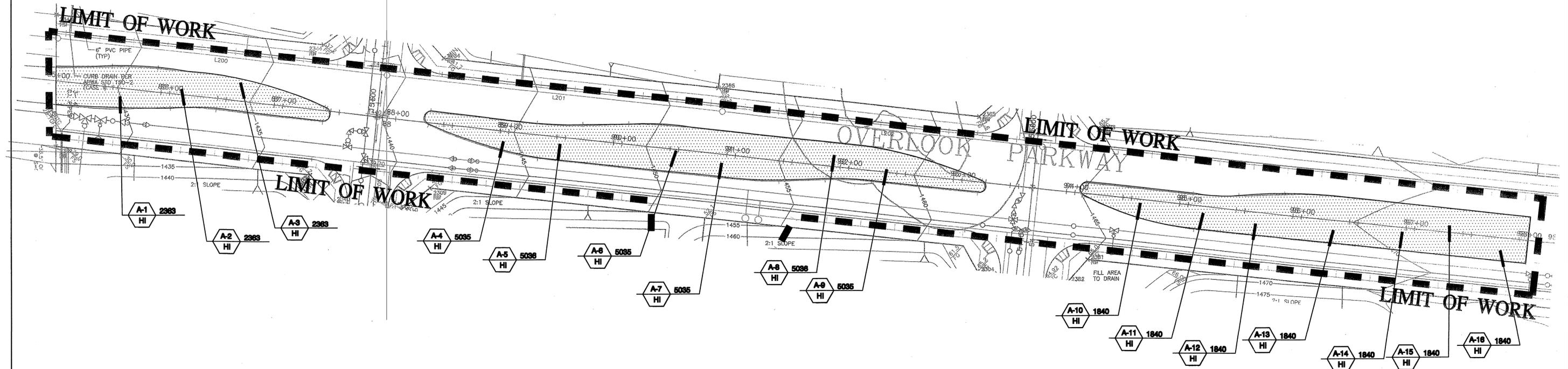
ACCT. NO.

PWS-PC-03-3001-M1
R-3892-ML
PW06-0168

SHEET L-3 OF 9

HYDROZONE LEGEND

SYMBOL	HYDROZONE	TOPOGRAPHICAL CHARACTERISTICS	PLANT TYPE AND KC CATEGORY	TOTAL AREA
	HYDROZONE I	FLAT	SMALL SHRUBS - KC-1, KC-2, KC-3	36075 S.F.
TOTAL S.F.				36075 S.F.



Claram. 7/12/06



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City of Riverside
 WATER SYSTEM
 APPROVED BY *MW McLeod* DATE *7/19/06*

City of Riverside
 PUBLIC UTILITY DEPARTMENT
 OVERHEAD AND UNDERGROUND
 APPROVED BY *Wam* DATE

LANDSCAPE ARCHITECT IN RESPONSIBLE CHARGE
 ROBERT B. CLARK
 RLA 4233 expires 12/31/06
 DATE *6/28/06*

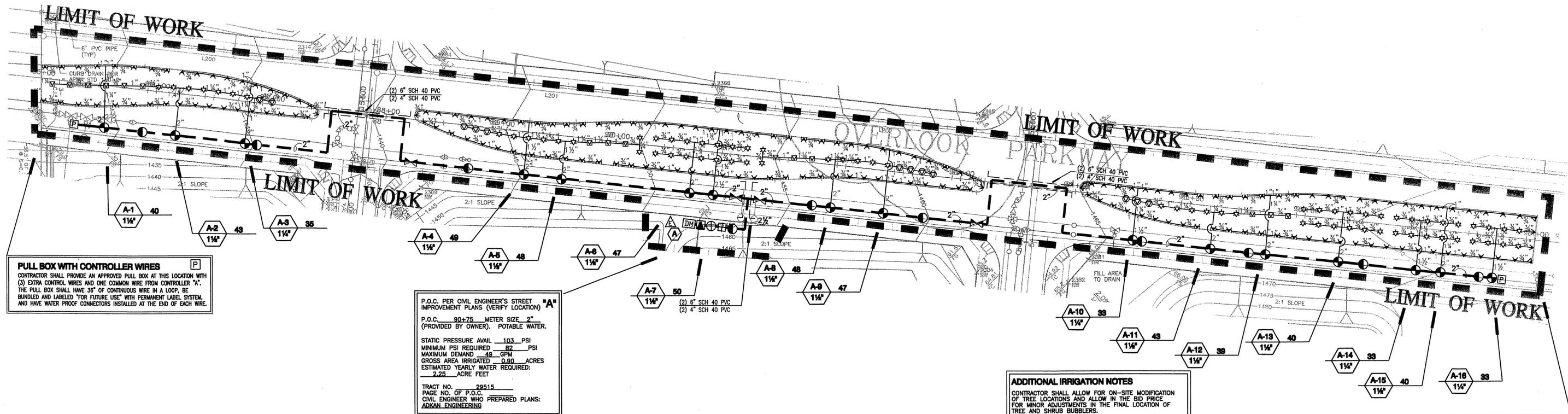


MARK	REVISIONS	APPR.	DATE

CITY OF RIVERSIDE, CALIFORNIA
 PUBLIC WORKS DEPARTMENT
 APPROVED BY *[Signature]* DATE *7/19/06*
 P.W. PRINCIPAL ENGINEER
 P.W. STREET SERVICES
 PLANNING DIVISION
 APPROVED BY *[Signature]* DATE *7/20/06*
 CITY ENGINEER

LMD LANDSCAPE PLANS
 OVERLOOK PARKWAY
 MEDIANS TR 29515
 HYDROZONE PLAN
 SCALE: 1" = 40'

ACCT. NO.
 PWS-PC-03-3001-MI
 R-3892-ML
 PW06-0168
 SHEET L-4 OF 9



PULL BOX WITH CONTROLLER WIRES
 CONTRACTOR SHALL PROVIDE AN APPROVED PULL BOX AT THIS LOCATION WITH (3) EXTRA CONTROL WIRES AND ONE COMMON WIRE FROM CONTROLLER "A". THE PULL BOX SHALL HAVE 3/8" OF CONTINUOUS WIRE IN A LOOP, BE BUNDLED AND LABELED "FOR FUTURE USE" WITH PERMANENT LABEL SYSTEM, AND HAVE WATER PROOF CONNECTORS INSTALLED AT THE END OF EACH WIRE.

P.O.C. PER CIVIL ENGINEER'S STREET IMPROVEMENT PLANS (VERIFY LOCATION) "A"
 P.O.C. 80+75 METER SIZE 2" (PROVIDED BY OWNER). POTABLE WATER.
 STATIC PRESSURE AVAIL 103 PSI
 MINIMUM PSI REQUIRED 82 PSI
 MAXIMUM DEMAND 49 GPM
 GROSS AREA IRRIGATED 0.80 ACRES
 ESTIMATED YEARLY WATER REQUIRED: 2.25 ACRE FEET
 TRACT NO. 29515
 PAGE NO. OF P.O.C.
 CIVIL ENGINEER WHO PREPARED PLANS:
 ADKIAN ENGINEERING

ADDITIONAL IRRIGATION NOTES
 CONTRACTOR SHALL ALLOW FOR ON-SITE MODIFICATION OF TREE LOCATIONS AND ALLOW IN THE BID PRICE FOR MINOR ADJUSTMENTS IN THE FINAL LOCATION OF TREE AND SHRUB BUBBLERS.
 CONTRACTOR SHALL REVIEW VALVE SEQUENCING WITH THE CITY TO OBTAIN APPROVAL OF SEQUENCING PLAN PRIOR TO INSTALLATION.

PULL BOX WITH CONTROLLER WIRES
 CONTRACTOR SHALL PROVIDE AN APPROVED PULL BOX AT THIS LOCATION WITH (3) EXTRA CONTROL WIRES AND ONE COMMON WIRE FROM CONTROLLER "A". THE PULL BOX SHALL HAVE 3/8" OF CONTINUOUS WIRE IN A LOOP, BE BUNDLED AND LABELED "FOR FUTURE USE" WITH PERMANENT LABEL SYSTEM, AND HAVE WATER PROOF CONNECTORS INSTALLED AT THE END OF EACH WIRE.

- NOTES:**
- ALL PIPING SHALL MEET IAPMO AND NSF STANDARDS FOR PVC TYPE 1, GRADE 1 PIPE.
 - ALL IRRIGATION SLEEVING TO EXTEND A MINIMUM 12" PAST ANY HARD-SCAPE.
 - FOR GENERAL IRRIGATION NOTES REFER TO CIVIL ENGINEER SPECIFICATION MANUAL.
 - PIPE ROUTING IS DIAGRAMMATIC, LOCATE ALL PIPING IN PLANTER AREAS WHEREVER POSSIBLE.
 - THREE FOOT (3') CONTROL WIRE EXPANSION LOOPS SHALL BE PLACED AT ALL 45, 90 DEGREE TURNS, AND EVERY 100' IN THE TRENCH.
- NOTE: USE RAINBIRD 1800 PCS SCREEN AND VAN NOZZLES WHERE REQUIRED TO ACHIEVE PROPER COVERAGE AND AVOID OVER SPRAY ONTO STREET.

1800 PCS SCREEN PERFORMANCE - MPR NOZZLES
 PRESSURE COMPENSATING SCREENS (PCS) SHALL BE ON 15 FT. RADIUS HALF PATTERN HEADS THROWING BETWEEN A 10 FT. TO 12 FT. RADIUS, ON 10 FT. AND 15 FT. RADIUS HEADS THROWING BETWEEN A 5 FT. TO 8 FT. RADIUS, AND ON 8 FT. HEADS TO 12 FT. Q RADIUS HEADS THROWING LESS THAN 3 FT. RADIUS.

MODEL:	PCS-010	PCS-020	PCS-030	PCS-040	PCS-060	PCS-090	PCS-125	PCS-175	PCS-260	PCS-370
GPM:	1	2	3	4	6	9	1.25	1.75	2.6	3.7
COLOR:	PURPLE	BROWN	SILVER	ORANGE	BLACK	WHITE	GREEN	YELLOW	BLUE	RED
5F	4'	5'	5'	8'						
5H	4'	5'	5'	8'						
5T	4'	5'	5'	8'						
5Q	4'	5'	5'	8'						
8F		6'	7'	8'	8'					
8H		6'	7'	8'	8'					
8T		6'	7'	8'	8'					
8Q		6'	7'	8'	8'					
10F		6'	8'	10'	10'					
10H		6'	8'	10'	10'					
10T		6'	8'	10'	10'					
10Q		6'	8'	10'	10'					
12F		6'	8'	10'	12'					
12TQ		6'	8'	10'	12'					
12T		6'	8'	10'	12'					
12H		6'	8'	10'	12'					
12T		6'	8'	10'	12'					
12Q		6'	8'	10'	12'					
15F		6'	8'	10'	12'					15'
15H		6'	8'	10'	12'					15'
15T		6'	8'	10'	12'					15'
15Q		6'	8'	10'	12'					15'
16F-SLA		6'	8'	10'	12'					16'
16H-SLA		6'	8'	10'	12'					16'
16Q-SLA		6'	8'	10'	12'					16'
18 (90)-VAN		6'	8'	10'	12'					18'
18 (180)-VAN		6'	8'	10'	12'					18'
18 (270)-VAN		6'	8'	10'	12'					18'
18 (330)-VAN		6'	8'	10'	12'					18'
22F-SS		6'	8'	10'	12'					22'
22H-SS		6'	8'	10'	12'					22'
22Q-SS		6'	8'	10'	12'					22'
5F-B		6'	8'	10'	12'					5'
5H-B		6'	8'	10'	12'					5'
5Q-B		6'	8'	10'	12'					5'
5CST-B		6'	8'	10'	12'					5'
15SQ										15'x16'
15SST										15'x16'
15CST										15'x16'
15SST										15'x16'
15EST										15'x16'

BOLD TYPE INDICATE RECOMMENDED NOZZLE /SCREEN COMBINATION TO ACHIEVE CATALOG PERFORMANCE AT 30 PSI.

CAGNEY RANCH - TRACT 29515 9/23/05

PRESSURE LOSS DATA VALVE A-15

- STATIC PRESSURE @ POINT OF CONNECTION 103.00 PSI
- POINT OF CONNECTION ELEV. sta. 90+75 1452.00 FT.
PVB AT MEDIAN 0.00
- REMOTE CONTROL VALVE ELEV. 1472.00 FT.
HIGHEST NOZZLE ELEVATION sta. 98+07 1475.00 FT.
- STATIC PRESSURE @ RC VALVE 94.34 PSI
- MAX SYSTEM FLOW REQUIRED 48.00 GPM
- PRESSURE LOSS @ VALVE A-15

2" WATER METER	40.00 GPM	1.30 PSI
2" MASTER VALVE	40.00 GPM	1.00 PSI
2" BACKFLOW PREVENTER	40.00 GPM	13.00 PSI
FLOW SENSOR	40.00 GPM	1.00 PSI
2.5" MAIN LINE	0.00 FT. 40 GPM	0.00 PSI
2" MAIN LINE	750.00 FT. 40 GPM	9.60 PSI
GATE/BALL VALVE	40.00 GPM	2.00 PSI
AIR VALVE	0.00 GPM	0.00 PSI
REMOTE CONTROL VALVE	40.00 GPM	3.30 PSI
LATERAL LINE	140.00 FT.	4.16 PSI
HEADS PSI REQUIRED		25.00 PSI
10% PSI LOSS THROUGH ALL FITTINGS		7.04 PSI
ELEVATION CHANGE (PRESSURE LOSS/GAIN)		0.00 PSI GAIN
		9.96 PSI LOSS
	SUBTOTAL	77.35 PSI
15% CONTINGENCY		11.60 PSI
	TOTAL FRICTION LOSS	88.96 PSI
	AVAILABLE PRESSURE	103.00
	RESIDUAL PRESSURE	14.04

15% CONTINGENCY

DATE: 6/28/06

IRRIGATION CONTROLLER

CAUSENSE 24 STATION, ET2000 CONTROLLER MOUNTED WITHIN A STAINLESS STEEL ENCLOSURE, MODEL NUMBER: MYERS POWER PRODUCTS: MEU222Z-DIC-RV S.S. CONTROLLER CAT NUMBER: ET2000-24-IR-RR w/IR-DOME-RR ANTENNA w/TP-1 BOARD AND TP-110 SURGE PROTECTOR

- CONTRACTOR SHALL APPLY FOR ELECTRICAL PERMIT AND IS RESPONSIBLE FOR PAYING ALL FEES AND COSTS ASSOCIATED WITH PERMIT, PURCHASE AND SETTING OF ELECTRICAL METER.
- CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY CONDUITS, SWEEP, CONDUCTORS ETC. FROM ELECTRICAL STUB TO THE ELECTRICAL METER REGARDLESS OF LENGTH OF RUN. VERIFY LENGTH PRIOR TO BID. NO ADDITIONAL COMPENSATION ALLOWED.
- CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY CONDUITS, SWEEP, CONDUCTORS ETC. FROM ELECTRICAL P.O.C. TO IRRIGATION CONTROLLERS REGARDLESS OF LENGTH OF RUN. VERIFY LENGTH PRIOR TO BID. NO ADDITIONAL COMPENSATION ALLOWED.
- CONTRACTOR SHALL INSTALL AND CONNECT THE COMMUNICATION CABLE AND CONDUIT FROM TO CONTROLLERS AND PULL BOXES REGARDLESS OF LENGTH OF RUN. VERIFY LENGTH PRIOR TO BID. NO ADDITIONAL COMPENSATION ALLOWED.
- CONTRACTOR SHALL COORDINATE POWER UP OF ALL DEVICES AND SHALL COORDINATE WITH CAUSENSE TO CERTIFY THE FLOW SENSING, BOOSTER PUMP, AND COMMUNICATION, PRIOR TO THE START OF THE ESTABLISHMENT & MAINTENANCE PHASE(S).
- CONTRACTOR SHALL PROVIDE A GROUNDED WATERPROOF OUTLET WITHIN ENCLOSURES.

INSTALL AUTOMATIC CONTROLLER AND ENCLOSURE ON A 6" THICK CONCRETE PAD AND ALLOW 6" CLR. ON ALL SIDES.
 CONTRACTOR SHALL COORDINATE FINAL ELEC. P.O.C., AND CONTROLLER(S) LOCATION WITH THE CITY.

SEE ADDITIONAL IRRIGATION NOTES.

CAUSENSE
 ERIC HANSON
 2075 CORTE DEL NOGAL, SUITE P
 CARLSBAD, CA 92009
 800-572-8608
 714-533-3881 CELL
 760-438-2619 FAX
 erich@causens.com

IRRIGATION LEGEND

HEAD SYMBOL	LEGEND	MAKER	MODEL NUMBER-DESCRIPTION	NOZZLE	PATTERN	GPM	PSI	RADIUS	DETAIL
☐	M	RAINBIRD	1812 SAM-PRS 12" POP-UP SHRUB SPRAY	18-VAN	180' 90'	2.43	1.22	25	17' A
☆	▽	RAINBIRD	1812 SAM-PRS 12" POP-UP SHRUB SPRAY	15H,15Q (15-VAN IF NEEDED.)	180' 90'	1.65	.83	25	14' A
☉	▽	RAINBIRD	1812 SAM-PRS 12" POP-UP SHRUB SPRAY	12H,12Q (12-VAN IF NEEDED.)	180' 90'	1.20	.60	25	11' A
▽	▽	RAINBIRD	1812 SAM-PRS 12" POP-UP SHRUB SPRAY	10H, 10Q (10-VAN)	180' 90'	.72	.36	25	9' A

REFER TO CITY OF RIVERSIDE STANDARD IRRIGATION DETAILS AND SPECIFICATIONS SHEET L-6 AND L-8.

IRRIGATION LEGEND

SYMBOL	LEGEND	MAKER	MODEL NUMBER-DESCRIPTION	DETAIL
⊕	SUPERIOR	#950-DWPRS OR EQUAL	PRESSURE REDUCING BRASS REMOTE CONTROL VALVE, SEE PLAN FOR SIZE	F
⊕	RAINBIRD	#44LRC OR EQUAL	1" QUICK COUPLING VALVE W/ LOCKING COVER AND KEY.	E
⊕	FEBCO	825YA 2" SIZE	REDUCED PRESSURE BACKFLOW PREVENTER WITH "Y" STRAINER.	G
⊕	SUPERIOR	#950DW OR EQUAL	2" MASTER CONTROL VALVE.	F
⊕	CAUSENSE	FM 2. 2" PVC SCHE 80 TEE	MOUNTED FLOW METER.	H
⊕	NIBCO	#T-113-K	GATE VALVE, LINE SIZE W/ CROSS HANDLE	I
⊕	CAUSENSE	ET-2000 SERIES	CONTROLLER MOUNTED INSIDE ENCLOSURE, SEE PLAN FOR SPECS	D,H,L
⊕	APPROVED	PVC CLASS 315 MAINLINE	SIZE 2" OR GREATER. DOMESTIC WATER. REFER TO PLANS	K
⊕	APPROVED	PVC SCHEDULE 40 MAINLINE	SIZE LESS THAN 2". DOMESTIC WATER. REFER TO PLANS	K
⊕	EXISTING	SCH 40 SLEEVES PER CIVIL ENGINEERING/UTILITY CONSULTANT STREET IMPROVEMENT PLANS		N,P
⊕	APPROVED	PVC SCH 40 LATERAL LINE	SEE PLAN FOR SIZE. DOMESTIC WATER. REFER TO PLANS.	K
⊕	CARSON	1419-13B	INDUSTRY PULL BOX MARKED "SW" W/ 3/8" EXPANSION LOOPS IN BOX, TYP.	M
⊕	PROPOSED	NON-METERED ELECTRICAL SERVICE	FOR CITY USE PER UTILITY CONSULTANT	D
⊕	PROPOSED	2" DOMESTIC WATER METER PER CIVIL ENGINEERING STREET IMPROVEMENT PLANS		D

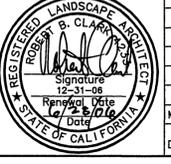
REFER TO CITY OF RIVERSIDE STANDARD IRRIGATION DETAILS AND SPECIFICATIONS SHEET L-6 AND L-8.

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City of Riverside WATER SYSTEM
 APPROVED BY: *MW Muel* DATE: 7/19/06

City of Riverside PUBLIC UTILITY DEPARTMENT OVERHEAD AND UNDERGROUND
 APPROVED BY: *Wan* DATE: _____

LANDSCAPE ARCHITECT IN RESPONSIBLE CHARGE
 ROBERT B. CLARK
 RLA 4233 expires 12/31/06
 DATE: 6/28/06



MARK	REVISIONS	APPR.	DATE

DESIGNED BY: KL/BC. DRAWN BY: JC/EM/KL CHECKED BY: KL/BC.

CITY OF RIVERSIDE, CALIFORNIA PUBLIC WORKS DEPARTMENT
 APPROVED BY: *[Signature]* DATE: 7/13/06
 P.W. PRINCIPAL ENGINEER
 P.W. STREET SERVICES
 PLANNING DIVISION
 CITY ENGINEER
 DATE: 7/13/06

LMD LANDSCAPE PLANS OVERLOOK PARKWAY MEDIANS TR 29515
 IRRIGATION PLAN
 SCALE: 1" = 40'

ACT. NO. PWS-PC-03-3001-M1
 R-3892-ML
 PW06-0168
 SHEET L-5 OF 9

GENERAL PLANTING NOTES

1. THE CONTRACTOR SHALL MAINTAIN A QUALIFIED SUPERVISOR ON THE SITE AT ALL TIMES DURING CONSTRUCTION THROUGH COMPLETION OF PICK-UP WORK. ALL EMPTY BAGGED AMENDMENTS, FERTILIZERS, SEEDS, ETC. USED ON PROJECT SHALL STAY ON SITE IN A NEAT, CLEAN AND ORDERLY MANNER UNTIL FINAL WRITTEN APPROVAL BY THE CITY INSPECTOR. ALL MATERIALS OTHER THAN SOIL ORGANIC AMENDMENTS SHALL BE DELIVERED IN UNOPENED BAGS. PACKING LISTS SHALL BE PROVIDED TO VERIFY FURNISHED QUANTITIES. ANY EXCESS MATERIALS REMOVED FROM THE JOB SITE SHALL BE IDENTIFIED PRIOR TO THEIR REMOVAL.

2. THE CONTRACTOR SHALL VERIFY ALL PLANT MATERIAL QUANTITIES PRIOR TO INSTALLATION. PLANT MATERIAL QUANTITIES LISTED FOR CONVENIENCE OF CONTRACTOR. ACTUAL NUMBER OF SYMBOLS SHALL HAVE PRIORITY OVER QUANTITY DESIGNATED. (NO ADDITIONAL COMPENSATION SHALL BE PROVIDED.)

3. THE CONTRACTOR SHALL FURNISH AND PAY FOR ALL CONTAINER GROWN TREES, SHRUBS AND VINES, INCLUDING SEEDS AND SODDED TURF, HYDROMULCHES AND FLATTED GROUNDCOVERS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE AND PAY FOR: PLANTING OF ALL PLANT MATERIALS; THE SPECIFIED GUARANTEE OF ALL PLANT MATERIALS; THE STAKING AND GUYING OF TREES AND THE CONTINUOUS PROTECTION OF ALL PLANT MATERIALS UPON THEIR ARRIVAL AT THE SITE.

4. **GROUND COVER PLANTING**
GROUND COVER PLANTING SHALL BE AS SHOWN ON PLAN UNLESS OTHERWISE NOTED. SEE DETAIL A THIS SHEET FOR FLATTED GROUND COVER PLANTING.

5. **PLANT MATERIAL**
ALL PLANT MATERIAL SHALL BE SUBJECT TO APPROVAL BY THE CITY INSPECTOR PRIOR TO INSTALLATION.

6. **BOXED TREES**
ALL BOXED TREES SHALL BE SELECTED AND SPOTTED BY THE CITY INSPECTOR.

7. **VINES (OMIT THIS SECTION)**

8. **LEACHING** - ALL SOILS WHERE THE SOIL SALINITY IS GREATER THAN 3 MILLIMHO/CM SHALL BE PRELEACHED PRIOR TO PLANTING.

AFTER TREE PLANTING PITS HAVE BEEN EXCAVATED, AND PRIOR TO THE INSTALLATION OF TREES, THE PLANTING PITS SHALL BE LEACHED BY FILLING PITS 1/2 FULL WITH GOOD QUALITY WATER AND ALLOW TO DRAIN COMPLETELY PRIOR TO PLANTING.

AFTER THE IRRIGATION IS INSTALLED AND PRIOR TO THE PLANTING OF SHRUBS AND GROUND COVER, THE PLANTING AREA SHALL BE LEACHED SO THAT A MINIMUM OF 6" OF GOOD QUALITY WATER PASSES THROUGH SOIL PROFILE BEYOND ROOT ZONE. PRIOR TO LEACHING, PLANT PITS SHALL BE DUG LEAVING SPOILS IN THE PITS. LEACHING IRRIGATION SHALL BE PROGRAMMED TO AVOID EROSION/RUN-OFF.

9. **SOIL AMENDMENTS, FERTILIZERS & SOIL CONDITIONERS**
THE SOIL AMENDMENTS SPECIFIED BELOW ARE FOR BIDDING AND INSTALLATION. THE CONTRACTOR SHALL PROVIDE AND PAY FOR THE INITIAL SOILS AGRONOMY REPORT FROM AN APPROVED SOILS LABORATORY AND ADDITIONAL SPECIFICATIONS MAYBE PROVIDED BY THE CITY PRIOR TO INSTALLATION OF PLANT MATERIALS. ANY MODIFICATION TO THE BELOW SPECIFICATION MUST BE IN WRITING FROM THE CITY. AT THE DIRECTION OF THE CITY INSPECTOR THE CONTRACTOR SHALL PROVIDE ADDITIONAL SOILS AGRONOMY TESTING. ADDITIONAL SOILS AGRONOMY TESTING SHALL BE PAID FOR BY THE CONTRACTOR AND SHALL BE COLLECTED IN THE MANNER AS DEFINED IN THE SPECIFICATIONS.

10. FOR ALL STAKED TREES, REFER TO CITY OF RIVERSIDE STANDARD DETAILS.

11. FOR ALL GUYED TREES, REFER TO CITY OF RIVERSIDE STANDARD DETAILS.

12. FOR SHRUB PLANTING, REFER TO CITY OF RIVERSIDE STANDARD DETAILS.

13. **SHRUB PLANTING METHOD**
EXCAVATE PLANTING PIT TO TWO (2) TIMES THE DIAMETER OF ROOTBALL AND 1-1/2 TIMES ITS DEPTH. AUGER 4" ON CENTER X 2' DEEP AT BOTTOM OF PIT. LEAVE AUGERED SOIL IN PLACE, UNCOMPACTED. FILL BOTTOM OF PLANTING PIT WITH AMENDED SOIL TO BRING LEVEL TO PROPER PLANTING DEPTH. BACKFILL AROUND ROOTBALL WITH AMENDED SOIL. FORM BASIN ON DOWN-SLOPE SIDE OF PLANTING PIT TO HOLD MOISTURE WITHIN THE ROOT ZONE. REMOVE BASINS 60 DAYS AFTER PLANTING.

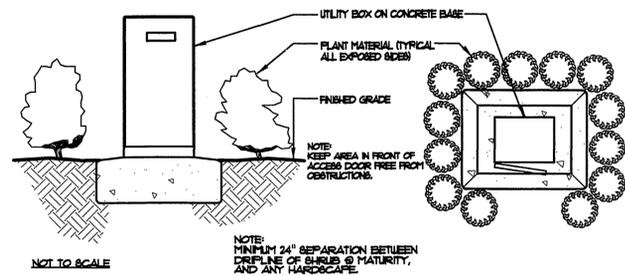
14. **FIRST WATERING OF NEWLY PLANTED MATERIAL**
WET THE ROOT ZONE BY HAND WATERING THE PITS TO THE LOWEST EDGE. BASIN. AFTER AMENDED SOIL HAS BEEN WETTED, THE SPRINKLERS SHOULD CONTROL THE MOISTURE FROM THAT POINT ON.

15. **ESTABLISHMENT/MAINTENANCE PERIOD**
THE CONTRACTOR SHALL PROVIDE FOR A 60 DAY ESTABLISHMENT AND A 1 YEAR MAINTENANCE PERIOD AFTER THE APPROVAL IN WRITING OF THE INSTALLATION OF THE PROJECT. THE MAINTENANCE SHALL BE PER THE ABOVE NOTES AND THE CITY LANDSCAPE SPECIFICATIONS.

16. **TREE ROOT BARRIERS**
INSTALL "DEEP ROOT" (OR APPROVED EQUAL) TREE ROOT BARRIERS ON ALL TREES WITHIN 5'-0" OF SIDEWALKS OR HARD SURFACES. CHECK MANUFACTURERS CALCULATOR CHART FOR NUMBER OF PANELS REQUIRED FOR EACH SIZE TREE.

17. **MULCH**
CONTRACTOR SHALL PROVIDE 3" LAYER OF FOREST FLOOR (0"-4") OR EQUAL MULCH IN ALL SHRUB PLANTING AREAS INCLUDING SLOPES 2:1 AND LESS. PROVIDE 3" LAYER OF MULCH AROUND TREE TRUNK IN TURF AREAS. MULCH SHALL EXTEND IN A 12" DIAMETER CIRCLE FROM TRUNK, BUT KEEP 3" CLEAR AROUND SURFACE OF BARK. DO NOT MULCH SURFACE OF ROOTBALLS. PROVIDE SAMPLE FOR APPROVAL BY THE CITY PRIOR TO INSTALLATION.

* REFER TO THE CITY OF RIVERSIDE'S PUBLIC LANDSCAPE MANUAL FOR ADDITIONAL INFORMATION, ESPECIALLY PLANTING SPECIFICATIONS 02480



F UTILITY SCREENING

Linear Style Planting with DeepRoot Barriers
Determine the correct number of panels to be used. Depending upon the actual planting plan and the number of trees involved the length of linear barrier will vary, but as a general rule of thumb take the anticipated mature canopy diameter of the tree and add 2 feet (61cm). This will be the number of feet necessary for a Linear style planting application. (See chart below.)

A. For curb and gutter protection or more aggressive roots use the 24" (61cm) (UB 24-2)

B. Dig the trench to the depth based upon the particular barrier chosen.

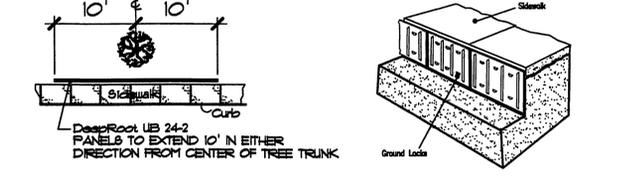
C. Install the barrier. When using DeepRoot Linear Barriers simply pull the appropriate number of panels out of the box (they come preassembled) and separate the joints at the correct length. When installing DeepRoot Universal Barriers in a linear fashion you will need to join the appropriate number of panels together.

D. Next place the barrier in the trench with the vertical ribs facing toward the tree and align in a straight fashion. It is helpful to place the barrier against the hardscape. Use the hardscape as a guide and backfill against the barriers to promote a clean smooth fit to the hardscape. Be sure to keep the barrier's double top edge at least 1/2" (13mm) above grade to ensure roots do not grow over the top.

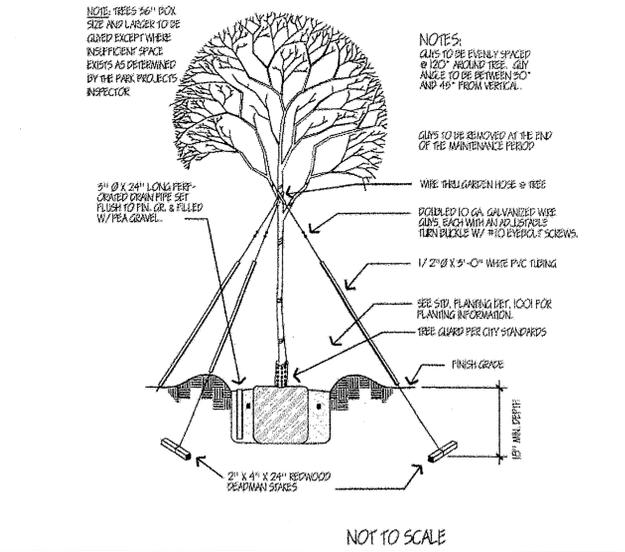
E. Plant the tree(s). The Linear style offers a more expansive rooting growth area, however adverse soil and drainage conditions may exist in the actual planting area. Take steps to ensure healthy growth of the tree at planting. Consult with a local Arbotist for planting tips and recommendations.

For additional information please consult the 16 page DeepRoot Product Selection and Installation Guidelines.

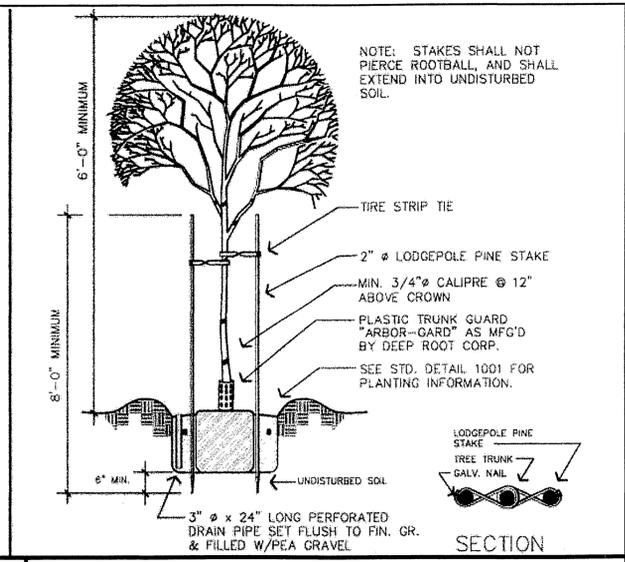
For information regarding distributors please call: 1 800 81V ROOT (458,7668). For help with difficult drainage or other difficult installation questions please call DeepRoot Technical Support at: 1 800 ROOT TEX (766.8835).



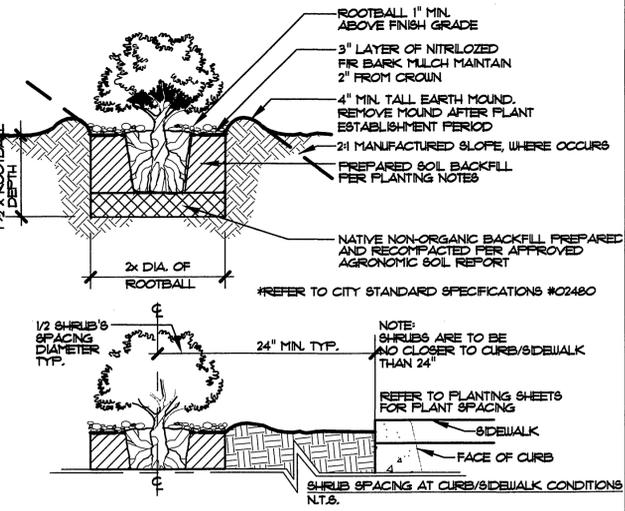
E ROOT BARRIERS



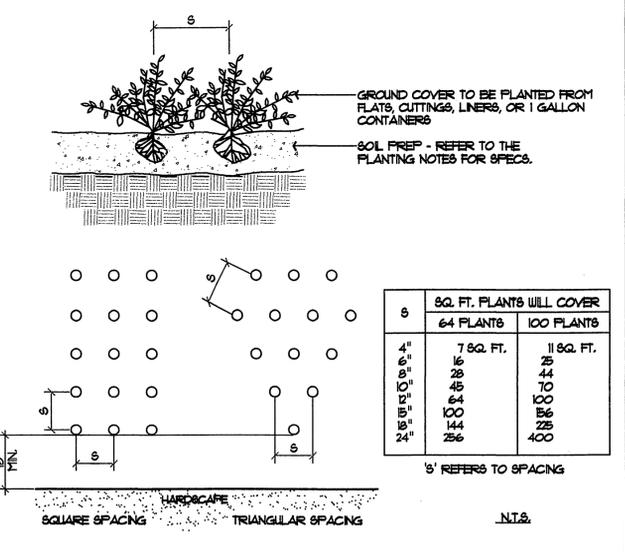
D TREE GUYING (36" BOX AND LARGER) CITY STD. #1003



C TREE PLANTING & STAKING CITY STD. #1002



B PLANTING DETAIL SIMILAR TO CITY STD. #1001



G PLANTING NOTES

IMPORTANT NOTICE
Section 4910/4917 of the Government Code requires a Dig Alert Identification Number to be issued before a "Permit to Excavate" will be valid. For your Dig Alert I.D. Number call CALL TOLL FREE 48 HOURS BEFORE YOU DIG UNDERGROUND SERVICE ALERT 1-800-227-2600

City of Riverside WATER SYSTEM
APPROVED BY: MW M... DATE: 7/19/06

City of Riverside PUBLIC UTILITY DEPARTMENT OVERHEAD AND UNDERGROUND
APPROVED BY: [Signature] DATE: [Blank]

LANDSCAPE ARCHITECT IN RESPONSIBLE CHARGE
ROBERT B. CLARK
RLA 4233 expires 12/31/06
DATE: 6/28/06



MARK	REVISIONS	APPR.	DATE

CITY OF RIVERSIDE, CALIFORNIA PUBLIC WORKS DEPARTMENT
APPROVED BY: P.W. PRINCIPAL ENGINEER, P.W. STREET SERVICES, PLANNING DIVISION
DATE: 7/20/06

LMD LANDSCAPE PLANS OVERLOOK PARKWAY MEDIANS TR 29515
PLANTING DETAILS
ACCT. NO.: PWS-PC-03-3001-MI R-3892-ML P#06-0168
SHEET L-7 OF 9

Claram 7/18/06

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 and refurbishment of existing 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 and/or City Inspectors;
Sleeving;
Testing;
Clean-up;
As-Builts by means of Global Positioning System (GPS);
Replacements, Repairs, Guarantees and Warranty Work.

1.03 RELATED WORK: Planting 02483

1.04 SUBMITTALS

A. Materials List: Contractor shall submit a complete materials list for approval by the Public Works Landscape 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 requested.

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

B. "Record" Prints to Reflect "As-Built" Conditions:
1. 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 Public Works Landscape Inspector.

- Show locations and depths of the following items:
a) Point of connection, Water Meter and Backflow Device. (GPS)
b) Routing of irrigation pressure lines (dimension maximum 100 feet along routing).
c) Gate valves. (GPS)
d) Irrigation remote control valves, master valves filters, etc. (GPS)
e) Quick coupling valves. (GPS)
f) Routing of control wires.
g) Controller(s) (GPS)
h) Flow Meters. (GPS)
i) 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. System layout.
3. Coverage test.
4. Final inspection/start of maintenance.
5. Final acceptance.

B. Inspection Requests: Contractor shall notify the Public Works Landscape 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 Public Works Landscape 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 cancelled.

E. Closing in Un-inspected 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 Public Works Landscape Inspector.

F. Coverage test: When the irrigation system is completed, Contractor shall perform a coverage test in the presence of the Public Works Landscape Inspector to determine if the water coverage for planting areas is complete and adequate. The Public Works Landscape Inspector must accept this test 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 not less than two hours. All valves and pressure gauges shall be installed at all terminating ends of the mainline and the remainder of all points in between shall be 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 Public Works Landscape Inspector or Inspector's designated representative. 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 "record" prints.
3. Contractor shall furnish the necessary force pump and all other test equipment, and shall perform the test.

1.06 TURNOVER ITEMS

A. Controller Charts:
1. "Record" prints must be approved by the Public Works Landscape 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. Reduce the print to a size that is the maximum dimensions that will fit within the controller door without folding. If the controller sequence is illegible at this reduction scale, the chart may be provided as a "multi-sheet" chart to provide adequate legibility.
3. Each control station on the Chart shall be marked with a different color to show its area of coverage.
4. When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being minimum 20 mils in thickness. The chart shall be installed in the controller enclosure using Velcro fasteners, and three different color grease pencils (red, black and blue) shall be provided in the enclosure for maintenance notations on the chart.
5. Controller charts shall be completed prior to the final acceptance inspection.

B. Operation and Maintenance Manuals: Within a minimum of 14 calendar days prior to acceptance of construction, prepare and deliver to the Public Works Landscape Inspector 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 manufacturer's information shall be included for each equipment item installed. Each complete, bound manual shall include the following information:
1. Index sheet stating Contractor's address and telephone number, including names and addresses and telephone numbers of local manufacturer's representatives.
2. Complete operating and maintenance instructions on all major equipment.

C. Materials to be furnished: The following items shall be supplied as part of this Contract and shall be turned over to the Public Works Landscape Inspector at the conclusion of the Project at the Final Acceptance Inspection:
1. Two keys for each type of automatic controller.
2. One valve box cover key.
3. "Record" prints, CD's and Mylar "As-Built" Plans at Final Acceptance.
4. 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. 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 Contractor at no additional expense to City within fourteen (14) calendar days of receipt of written notice from City.

B. Form of Guarantee: Guarantee shall be submitted on Contractor's 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 accepted, 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. We shall make such repairs or replacements within 14 calendar days following written notification by 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 circumstances as deemed an emergency, after City contact 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 force to perform such functions as the Director 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 City. In all cases, the judgment of the Director shall be final in determining whether an operational emergency exists. In the event of our failure to make such repairs or replacements within the time specified after receipt of written notice from City (other than an operational emergency), we authorize City to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefor upon demand.

PRINTED NAME & TITLE: _____

SIGNATURE: _____

ADDRESS: _____

PHONE: () _____

C. Operational Instruction: After the system has been completed, Contractor shall instruct the Public Works Landscape 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. Repairs shall include the complete restoration of all planting, paving or other improvements of any kind, which are damaged as a result of the Work.

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. 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 schedule 40 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, bonded 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 be 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 tee and ell fittings 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. Manual Control Valves: Add the following to Standard Specifications Section 212-2.2.3 Manual Control Valves: "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."
3. 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.
4. 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 numbers shall be welded in two-inch-high (2") numerals on lids. Gate valve boxes shall be round concrete boxes with cast iron covers marked "G." 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 with the designated use and valve station numbers in 2" high letters. 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 Plan.
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 Public Works Landscape 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 heads used on turf shall be minimum 6" pop-up types; all 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/flexible from both high voltage wiring (110/120 volt and higher) and the irrigation mainline sleeves.

B. Electrical Service: Materials for electrical service shall comply with the standard specifications, governing utility agency standards, and requirements of all applicable codes. All controllers serving landscape areas shall be turned over to the City for maintenance, shall be powered through a metered electrical service. 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 gyp for common wires. All low voltage common wire 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 stainless steel enclosure.

B. Controller Enclosure: Shall be Stainless Steel, sized to fit the controller and the other electrical components as required per Standard Detail 4060, irrigation controller electrical pedestal shall be Myers Power Products, Inc. - Catalog # MEUG22X-ENC-RIV Stainless Steel Enclosure, or City approved equal. The equipment shall conform to the requirements of the City of Riverside. Complete pedestal shall be UL Listed under Standard 508, Enclosed Industrial Control Equipment. Enclosure shall be Reinforced NEMA type 3R, fabricated from 12 gauge corrosion resistant stainless steel, minimum grade 304. Enclosure shall include vandal resistant hinged door with 3-point latch assembly and folding "T" handle behind lockable cover. Enclosure shall be equipped with stainless steel mounting pins, adjustable from front to back. All interior sheet metal shall be stainless steel. Mounting pins shall have pointed exterior grade plywood panels. Enclosure shall have interior mounting flanges for attachment to padmount base (Myers part number 519100) encased in 4" minimum concrete. Pedestal shall be equipped with insulated neutral and ground lug. Pedestal shall be wired for 120V 1Ph 2W with a 15 ampere circuit breaker, 10,000 A/C rated, installed. All factory wiring shall be 600 volt rated copper.

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 is based upon an available water pressure of _____ p.s.i. at a flow rate of _____ g.p.m. Individual stations are designed to this minimum p.s.i. The system is also designed to withstand a maximum pressure of _____ p.s.i. Contractor shall verify the size of the existing water supply/mainline and the existing operating pressure at the water supply location shown on the Plans prior to starting construction. Contractor shall notify the Public Works Landscape Inspector in writing of any discrepancies noted. Failure to provide such written notification may constitute a modification 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 either a metered (for areas to be maintained by other than the City, such as HOA) or non-metered electrical service (for areas to be maintained by the City) as required, and shall make the final 120 V connection to the irrigation controller.
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 Public Works Landscape 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 Public Works Landscape 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 the Work of other trades. 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 and CD's. The changes and dimensions shall be recorded in a legible and workmanlike manner, to the satisfaction of the Public Works Landscape 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 3 (Lateral lines 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 shall be minimum 12 inches and maximum 18 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 trench through 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 scorching and 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 Public Works Landscape Inspector prior to sawcutting for Removal Work.

B. Backfill:
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 Public Works Landscape Inspector.
b) Under no circumstances shall the wheels of any vehicle be designed for the purpose of soils compaction to 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 Public Works Landscape 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 connections. Except where noted otherwise, all other connections shall be made with constant pressure piping under pavement shall be sleeved using class 315 solvent weld PVC and non-pressure lines in schedule 40 PVC sleeves. All wiring shall be sleeved under pavement using gray schedule 40 PVC sleeves.
7. 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.

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IMPORTANT NOTICE
Section 4216/4217 of the Government Code requires a Dig Alert Identification Card to be placed before any excavation work is started.
CALL TOLL FREE 48 HOURS BEFORE YOU DIG UNDERGROUND SERVICE ALERT 1-800-227-2600

City of Riverside WATER SYSTEM
APPROVED BY: [Signature] DATE: 7/31/06

City of Riverside PUBLIC UTILITY DEPARTMENT OVERHEAD AND UNDERGROUND
LANDSCAPE ARCHITECT IN RESPONSIBLE CHARGE
ROBERT B. CLARK
RLA 4233 expires 12/31/06
APPROVED BY: [Signature] DATE: 7/31/06

LANDSCAPE ARCHITECT IN RESPONSIBLE CHARGE
STATE OF CALIFORNIA
Professional Seal of Robert B. Clark, RLA 4233

Table with 4 columns: MARK, REVISIONS, APPR., DATE

CITY OF RIVERSIDE, CALIFORNIA PUBLIC WORKS DEPARTMENT
APPROVED BY: [Signature] DATE: 7/31/06

LMD LANDSCAPE PLANS OVERLOOK PARKWAY MEDIANS TR 29515 IRRIGATION SPECIFICATIONS
ACCT. NO. PWS-PC-03-3001-M R-3892-ML PWO6-0168 SHEET L-BOF 9

INDEXED 8-14-06

SECTION 02490 - PLANTING
PART 1 - GENERAL

- 1.01 RELATED DOCUMENTS:
A. Standard Specifications: The provisions of the Standard Specifications shall apply except as modified herein.
B. Reference Standards: American Association of Nurserymen Standards.

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 Planting Work as shown on the Plans and as described in the Specifications including, but not necessarily limited to, the following:

- Soil preparation;
- Fine grading;
- Finish grading, as distinguished from fine grading;
- Planting trees;
- Guying and staking trees;
- Planting shrubs and groundcover;
- Hydroseeding turf;
- Soil erosion control;
- Maintenance;
- Plant establishment;
- Coordination with Work of other Sections;
- Testing;
- Clean-up;
- Replacements, Repairs, Guarantees and Warranty Work.

1.03 RELATED WORK Irrigation 02441

1.04 SOILS TEST: Contractor shall notify the Park Projects Inspector upon completion of fine grading and prior to commencement of soil preparation work. Contractor shall obtain agronomic soil 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, sugar hole requirements, and post plant fertilization program. The soils report recommendations will only take precedence over the minimum amendment and fertilizer application rates specified herein if and when the soils report recommendations exceed the specified minimums. Contractor shall allow a minimum two week period for the soils testing work commencing upon the Park Projects Inspector's acceptance of the fine grading work.

1.05 GUARANTEE: The guarantee requirements of the Standard Specifications are supplemented as follows as such requirements pertain to the tree planting portion of the Work. 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 the date the Project Notice of Completion is filed with the County Recorder. During the guarantee period, any trees found to be dead, missing, or in poor condition shall be replaced by Contractor within ten (10) days of written notification. Park Projects Inspector shall be the sole judge as to the condition of the trees. Replacement shall be made in accordance with City standards. Material and labor involved in replacing trees shall be provided by Contractor at no additional cost to City.

- 1.06 INSPECTIONS: Inspections will be required. 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. Fine Grade Prior to Commencement of Soil Preparation: Upon completion of fine grading and prior to commencement of soil preparation, for Final Acceptance for maintenance, either by the Home Owner's Association or the City, will be required, and post plant fertilization program. The soils report recommendations will only take precedence over the minimum amendment and fertilizer application rates specified herein if and when the soils report recommendations exceed the specified minimums. Contractor shall allow a minimum two week period for the soils testing work commencing upon the Park Projects Inspector's acceptance of the fine grading work.
B. Finish Grade: Inspection of completed finish grade work following soil preparation work.
C. Plant Material: Inspection of plant materials upon delivery to the job site, but prior to planting.
D. Plant Locations: When container plants and/or bare root stock are spotted for planting, but before planting holes are excavated.
E. Completed Planting: When planting and all other indicated or specified work has been completed.
F. Chemical Applications: During application of pre-emergent chemical.
G. Start of Plant Establishment: At the start of the Plant Establishment Period.
H. End of the Plant Establishment: Prior to Final Acceptance of the Project, the project will be inspected for and of the Plant Establishment Period. Acceptance for maintenance, either by the Home Owner's Association or the City, will be confirmed in writing. Contractor shall remain responsible for maintenance until receipt of this written confirmation of acceptance of the Project for maintenance by others.

1.07 SUBMITTALS: 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 fiber-mulch
- Total quantity of iron sulphate

1.08 PLANT ESTABLISHMENT PERIOD: The length of the Plant Establishment Period shall be as specified in the "Agreement for Installation of Landscape Improvements" as executed by the Developer for this project, but shall be not less than one year; regarding criteria to start, see also Subsections 3.13 Maintenance and Plant Establishment and 3.14 Start of Plant Establishment Period.

PART 2 - MATERIALS

2.01 GENERAL: All materials shall conform with Section 212 - Landscape and Irrigation Materials 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 Commercial Fertilizer:

- 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:

Total Nitrogen (N)	20%
Derived from urea formaldehyde	7.0% water soluble nitrogen
Planting	13.0% water insoluble nitrogen
2.5 Available Phosphoric Acid (P O)	10%
Derived from calcium phosphate	
2 Soluble Potash (K O)	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, 8% phosphoric acid, and 8% potash.
C. Organic Soil Amendment: Shall be type 1 organic soil amendment, wood based product, nitrogen stabilized, and free of foreign matter.
D. Soil Conditioners: Add to Standard Specifications, new Section as follows:
212-1.2.6 Inorganic Conditioners. 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 agricultural mineral with the State Department of Food and Agriculture in compliance with Chapter 5 "Fertilizing Materials", of Division 7 of the Food and Agriculture Code of California, commencing at Section 14501.

2.03 HEADERS, STAKES AND TIES: Add the following to Standard Specifications Section 212-1.5 Headers, Stakes and Ties:
A. Headers: Standard Specifications Section 212-1.5.2 Headers and Stakes replace with the following to read: "Headers shall be Concrete Headers/Now 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." B. Tree Stakes: Shall be straight-grained lardpole pine, or City approved equal. Stakes shall be free from knots, checks, split, or disfigurements. VII Twist Braces are NOT ALLOWED.
C. 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.

2.04 HYDROSEEDING MATERIALS:
A. Binding Agent: Shall be a dry powder organic concentrate, Ecology Controls "M-Binder" as available from Robinson Material Company, Anaheim, CA 714/632-9715 or City approved equal.
B. Fertilizers:
1. Controlled Release Fertilizer (CRF): Shall be Osmocote, a premium quality resin-coated pill-type, slow release (8-9 month formulation) fertilizer product having an analysis of 18-6-12, as manufactured by The Scotts Company, 14111 Scottsblow Road, Marysville, Ohio 43041, 1-888-270-3714, or City approved equal.
2. Triple Super Phosphate: Shall be a premium quality granulated high phosphorus "Best" fertilizer product having an analysis of 0-45-0, as manufactured by J. R. Simplot Company, Lathrop, CA (209) 858-2511, or City approved equal.
C. Fiber-Mulch: 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.
D. Seed: Turf seed mix as specified below.
E. Water: All water used for hydroseeding shall be potable domestic water. See General Provisions Section 7-8.5 Temporary Light, Power, and Water regarding availability of water and temporary construction meter and charges for water drawn from City fire hydrants.

2.05 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.

2.06 PLANTS: Add the following to Standard Specifications Section 212-1.4 Plants:
A. General: Add the following to sub-section 212-1.4.1 General: All plants shall be true to name, with at least one of each bud or lot tagged with the name and size in accordance with the American Association of Nurserymen Standards. In all cases, botanical names shall take precedence over common names. All plants and planting materials shall meet or exceed the specifications of Federal, State, and County Laws requiring inspection for plant disease and insect control.
B. Quality and Size:
1. Quality: All plant material shall comply with the definition for number one nursery stock per the current edition of "Horticultural Standards" as adopted by the American Association of Nurserymen.

- B. Quality and Size:
1. Quality: All plant material shall comply with the definition for number one nursery stock per the current edition of "Horticultural Standards" as adopted by the American Association of Nurserymen.
2. Size: Add the following to Standard Specifications Sections 212-1.4.2 Trees and 212-1.4.3 Shrubs:
a) All container plants supplied by Contractor shall be of the specified standard height and diameter set by the American Standard for Nursery Stock. The height of the tree shall be measured from the root crown to the top of the terminal leader and the diameter shall be measured six (6) inches above the crown roots.
b) All palm trees shall be of a minimum 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.
c) All container grown plants shall be the size(s) as noted on the approved plans, but in no case less than a minimum caliper and height in accordance with the American Association of Nurserymen standards for container plants. Where substitution of bare root stock is approved by the Street Tree Inspector, 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.
D. Cuttings: Modify Standard Specifications Section 212-1.4.6 Cuttings to read: All cuttings used on the project shall be fully rooted cuttings unless otherwise approved in writing by the Park Projects Inspector.

2.07 MULCH:
A. Nitroized Shavings: Shall conform with Standard Specifications Section 212-1.2.5 (c) Type I Mulch.
B. Tree Mulch: Shall be a ground wood product as produced through a wood chipper and shall consist of twigs and branches with pieces of a maximum size of 3/4" diameter by 4" long, free of seeds, trash and debris and other inert non-organic materials.

2.08 TURF PLANTINGS:
A. SEED: Add the following to Standard Specifications Section 212-1.3 Seed:
1. Seeded Turf: For Turf areas being planted solely from seed, use the following seed mix:
Proportion
Turf Seed Mix by weight Purly Ge rmination
Perennial Rye (Mentation 3' - 50% EIT) 60% 95% 90%
FJ Bluegrass (50% ' Rugby' 50% ' Parade') 10% 98% 80%
Un-Hulled Bermuda (Certified Arizona Common)* 30% 98% 85%
Seeding rate: 438 pounds per acre (10 LBS/1,000 SF)
*Note: For applications in May through September, use Hulled Bermuda.
2. Overseeding for Stolozized Turf Plantings: (for use during non-stolonizing months: November thru March) Where stolozizing of turf plantings is specified, and the installation is scheduled during non-stolonizing months, overseed the stolozized turf area with the following seed mix:
Annual Rye 100% 95% 90%
Seeding rate: 872 pounds per acre (20 LBS/1,000 SF)
B. SOD: Turf sod shall be of the type noted on the Plans. All sod shall be new, fresh, viable sod delivered in full pallets ready for installation.
C. STOLONS:
1. Definitions: The standard unit of measurement for turf stolons shall be a bushel, defined as 1.24 cubic feet, loose packed and having a minimum dry weight of eight pounds net. Stolons are defined as fresh living sections of runners and stems of the turf species specified having nodes (joints) which will produce growth when properly planted and maintained.
2. Growing Conditions: Stolons shall be grown from high quality vegetative material in soil treated with appropriate state and federal regulatory agency approved pesticides/herbicides for control of disease, insects and weeds. Stolons shall be produced in fields periodically inspected by the California Department of Food and Agriculture Nursery Section to insure high quality and freedom from diseases, insects and weeds according to the standards in effect in the current publication of State of California Regulations for Nursery Inspection.
3. Product Handling: Stolons shall be cut to between one and four inches in length. Chaff, soil, or other inert materials shall not exceed eight percent (8%) by weight. When delivered to the job site, stolons shall be in corrugated plastic mesh bags, clean, free from dirt, and suitable plastic mesh bags. Stolons may be held on site for approximately twenty-four (24) hours if kept shaded, piled no more than two container units deep and kept continually saturated with water until planted.
4. Species and Application Rate: Stolons shall be Santa Ana hybrid Bermuda grass, applied at 33 bushels per acre (0.75 BU/1,000 SF)

PART 3 - EXECUTION
3.01 GENERAL: All Work shall conform with Section 308 LANDSCAPE AND IRRIGATION INSTALLATION of the Standard Specification, except as modified herein. At Contractor's option, subject to the Park Project Inspector's acceptance of the material available and the appropriateness of the planting season, bare root stock may be substituted for the required 15 gallon and 24" box tree species if commercially available as bare root plantings and provided the corresponding minimum caliper and height requirements of Subsection 2.06 PLANTS, Subparagraph C. Bare Root Stock above are met, all at no change in contract price.
3.02 FINE GRADING: Fine grading, as specified under this Subsection, is a separate operation from finish grading as specified under Subsection 3.05 below. Fine Grading Work is to commence upon completion of all trenching and backfill operations, and prior to soil preparation. Upon completion of Fine Grading Work all areas shall slope to drain without water pockets, irregularities and shall conform to the intent of all Plans and Specifications after thorough settlement and compaction of the soil. Fine grading shall allow for Soil Preparation Work as specified, such that finish grades shall meet the elevations indicated on the Plans, tolerance for fine grading is 1/4 inch plus or minus. Any corrections to the Grading Work required to obtain proper drainage and to bring it into conformance with the intent of the Plans and Specifications and City codes shall be performed by Contractor at no additional cost to City.

3.03 WEED CONTROL MEASURES: Upon completion of all fine grading work, 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.
3.04 SOIL PREPARATION: Add the following to Standard Specifications Section 308-2.3 Topsoil Preparation and Conditioning:
A. Work Sequence: All fine grading, landscape mounding, and weed control measures shall be completed prior to soil preparation. Soil Preparation Work shall not commence until the agronomic soil test has been completed. Should 30 calendar days elapse between completion of soil preparation and commencement of planting, all areas shall be prepared again.
B. Excluded Areas: 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 as specified below.
C. Soil Preparation: In all planting areas with gradients less than 3:1, areas to be soil prepared shall first be cross ripped to a minimum depth of 8" with tractor tines spaced at maximum 18" on center. Following cross-rip operations, a layer of soil amendments shall be spread and rolled 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. Amendment Application Rates: 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 Type I organic soil amendment.
2. 15 pounds commercial fertilizer.
3. 100 pounds gypsum.
4. Soil sulfur per soils report.

3.05 FINISH GRADING: Contractor shall finish grade all planting areas, filling as needed or removing surplus dirt, raking to remove all rocks and debris over a 1/2 inch in diameter, and floating to a smooth uniform grade. All areas shall slope to drain. Flow lines shall be established to roads, curbs, drainage swales and inlets, and/or sidewalk 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 above) 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.
3.06 EROSION CONTROL: Add new Section to the Standard Specifications: "308-4.9.6 Jute Netting. All slopes areas exceeding 3:1 shall receive jute netting. Netting shall also be provided for the Plant Establishment 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 8-inch long, 11-gauge (minimum) steel wire staples driven vertically into the soil at approximately 24-inch spacing. Jute netting spacing shall overlap along the slope sides at least 6 inches. Ends of strips shall burke into soil at least 6 inches. Lap all ends of rolls a minimum of 24"."
3.07 INSPECTION OF CONTAINER PLANTS: The root condition of plants furnished in containers will be checked by the Park Projects Inspector by removal of earth from the roots of not less than two plants nor more than 2% of the total number of plants from several different sources, the roots of not less than two plants of each species or variety from each source may be checked by the Park Projects Inspector at the Inspector's option. The selection of plants to be checked will be made by the Park Projects Inspector. Care shall be exercised to avoid rendering plants unsuitable for planting by virtue of this inspection. However, all plants rendered unsuitable shall be considered as samples, and replacements shall be provided at no additional cost to City. 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.

3.08 PLANTING BACKFILL:
A. Mixing: All backfill materials shall be bulk mixed, not individually mixed at each plant pit.
B. Proportions: Backfill for planting pits shall be enriched using the following blend per cubic yard (agronomic soil test recommendations shall be reviewed prior to soil mixing):
1. Container Plants:
60% top soil 3 lbs. gypsum
40% Type I Organic Amendment 2 lbs. iron sulphate
2. Bare Root Stock:
10% wood shavings 90% top soil
fertilizer and soil conditioners as specified for container plants.

3.09 PLANTING:
A. Tree and Shrub Planting: Add the following to the Standard Specification Section 308-4.5 Tree and Shrub Planting:
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 planting 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 bare the same relative position to finish grade as the crown roots did in the soils where the trees 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.
B. Groundcover and Vine Planting: Add the following to Standard Specifications Section 308-4.7 Groundcover and Vine Planting:
1. On slopes exceeding 3:1 ratio, apply 5 gram Agriform tablets, one per plant in lieu of soil preparation work.
2. Prepare the soil in all planting areas (except where slopes exceed 3:1) by applying 15 cubic yards of Nitroized 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 planting areas, areas to receive Tree-Mulch and bare dirt areas shall be treated with a pre-emergent chemical (subject to approval by the Park Projects Inspector prior to application). Chemicals shall 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 commencement of Plant Establishment Period; and c) at end of Plant Establishment Period. The Park Projects Inspector, (909) 715-3469, 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. 4. All areas designated to receive Tree-Mulch shall have mulch applied and spread to provide a uniform thickness of not less than 3" of mulch, and shall be neat and clean, free of trash.
3.10 TREE STAKING: Amend the Standard Specifications Section 308-4.6.1 Method "A" Tree Staking and 308. 4. 6.2 Method B Tree Staking to read: Stake trees in accordance with the Park and Recreation Department's standard detail.
3.11 TURF PLANTING: Add the following to Standard Specifications Section 308-4.8.2. (b) Method "B": Turf Planting shall be performed by either hydroseeding or stolozizing as indicated on the Plans, or, if not noted, as suitable for the species of turf specified and as acceptable to the City. All turf for the entire project shall be installed using the same species. The installation method, as selected by the Contractor from the above options, shall be as applicable for the species being planted based on the applicability of materials in the respective forms (seed, sod, stolon):
A. Pre-moistening: All areas to be either soded, stolozized or hydroseeded shall be moistened to a depth of six inches just prior to application.
B. Hydroseeding and slurry:
1. Mixing of hydroseed slurry:
a. 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 following approximate unit proportions:
Fiber-Mulch: 1,500 lbs. /acre
Fertilizers:
CRF 870 lbs. /acre (20#/1000 SF)
Triple superphosphate 200 lb. /acre (4 3/8#/1000 SF)
Seed: as specified in Subsection 2.08 Turf Seed above
Binding Agent: 100 lbs. /acre (Use all slopes 3:1 and steeper)
Water: 3, 000 gal. /acre (maximum)
Agricultural Grade Gypsum: 500 lb. /acre
b. With agitation system operating at part speed, water shall be added to the tank, good recirculation are installed and the slurry shall be established, Materials shall be added in such a manner that they are uniformly blended into the mixture in the following sequence (assumes a nominal 1500 gallon tank):
c. When tank is 1/3 filled with water:
1. Add fiber-mulch to the tank until the water is 1/2 full.
Add 5 - 50 pound bales of fiber-mulch.
Add seed - 1/2 acre requirement.
d. Agitate mixture at full speed when the tank is half-filled with water.
e. Add remainder fiber-mulch requirement, 10 bales, before tank is 3/4 full. Add remainder fertilizers, seed and gypsum. Slurry distribution should begin immediately.
2. Application: Hydroseeded areas shall be irrigated, the slurry shall be 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 water structure plants, etc., that are inadvertently sprayed.
3. Clean-up: The slurry shall not be sprayed on non-designated areas. Any slurry spilled or sprayed into areas other than those designated to receive spray shall be cleaned up at Contractor's expense to the satisfaction of the Park Projects Inspector.

B. Sodding: If all turf to be installed is laid as sod, the provisions of subsection 3.14, A. 3. regarding "first mowing" will not apply, and the sod will be installed as sod. Sod may commence as soon as all plantings, including the sod work, are installed and are accepted by the Park Projects Inspector for start of maintenance. All areas to receive sod shall be Finish Graded prior to commencement of sodding. Immediately prior to laying sod, all areas shall be irrigated to moisten the soil as specified above. Rooting Agent shall be applied per the written recommendations of the Sod Grower. Contractor shall provide the sod for the entire project prior to installation of the sod. Lay sod in parallel rows with a running bond pattern using uniformly sized strips of sod. Use whole pieces wherever possible. Lay sod smooth, with tight joints, no gaps greater than 1/8" in size. All irrigation heads shall be set back from the sod edges to a depth of 8" and shall be kept moist at all times thereafter each irrigation head a maximum of 1/8" all ground to allow for proper spray pattern and smooth pop-up and retract operation. Immediately following completion of sodding operations, irrigate as necessary.
C. Stolozizing:
1. Pre-fertilization: Immediately prior to planting turf, all areas to receive stolons shall be pre-fertilized, evenly broadcasting 10 pounds per thousand square feet of commercial fertilizer.
2. Mechanical Planting: Stolons shall be planted within 24 hours of delivery to the job site. The stolons shall be pressed into the soil to a depth of 2" and shall be covered with a layer of topsoil to a depth of 1/2" to 1 1/2". Stolons thus planted shall be rolled immediately thereafter to assure intimate contact between soil particles and the stolons. For planting large areas (in excess of 10,000 SF), mechanical stolon planters shall be used. In smaller areas, stolon rollers shall be employed. In smaller areas, stolons may be scattered on the prepared surface and topdressed with approximately 1/2" of Type I organic material, then rolled. It is not necessary to topdress stolons which have been properly planted with suitable mechanical equipment.
3. Hydraulic Installation: As an alternative to mechanical planting, at Contractor's option, stolons may be installed by hydraulically applying the stolons to the prepared surface. The slurry mixture at a continuous and uniform rate. Wood fiber shall contain a green fugitive dye as an application indicator.
4. Watering: At no time either during or after planting soil stolons be subject to dry conditions. Freshly planted stolons shall be immediately irrigated to a depth of 8" and shall be kept moist at all times thereafter for a period of minimum ten to twenty days depending upon weather conditions, until the new plantings are sufficiently rooted and well established to withstand less frequent irrigation. Time intervals between beginning of planting operations and commencement of irrigation shall be kept to a minimum and shall not exceed the following:
Ambient Air Temperature Maximum Allowable Time
100° F 15 minutes
75° F 60 minutes
After the first irrigation, water shall be applied as often and in sufficient amounts as conditions may require, to keep the soil wet above, around and below the stolons.

3.12 WATERING: Add the following to Standard Specifications Section 308-4.9.5 Watering:
A. Responsibility: It shall be Contractor's responsibility to maintain a balanced watering program to ensure proper growth until Final Acceptance of the Work.
B. Initial Watering: 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. Ongoing Watering: 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 be set and adjusted individually 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.

3.13 MAINTENANCE AND PLANT ESTABLISHMENT: Amend the first sentence of Standard Specifications Section 308-6 MAINTENANCE AND PLANT ESTABLISHMENT to read: " Contractor shall maintain all areas within the Work Limits of this Contract on a continuous basis. . .until Final Acceptance".
3.14 START OF PLANT ESTABLISHMENT: Add the following to Standard Specifications Section 308-6 MAINTENANCE AND PLANT ESTABLISHMENT:
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. For Plant Establishment purposes "First Mowing" is defined as the first mowing after the point in time that a minimum of 80% of the turf area has attained the minimum height of 2". Until the above specified percentage of turf area is established and mown, Contractor shall mow as necessary to maintain those portions of turf exceeding 2" at the mowing height of 1 1/2 inches. At no time shall any turf exceed 3" in height.
4. Written acceptance of the Park Projects Inspector 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 Contractor has corrected all deficiencies.

3.15 MAINTENANCE TASKS: Add the following to Standard Specifications Section 308-6 MAINTENANCE AND PLANT ESTABLISHMENT:
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 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 Park Projects Inspector.
B. Iron Chlorosis: After the Plant Establishment Period, if any plantings exhibit iron chlorosis symptoms, apply FE 138 Gely or equivalent at manufacturer's recommended rates.
C. Replacement Plantings: During the Plant Establishment Period, should the appearance of any planting installed by Contractor indicate that the planting is not suitable for the site, the Contractor shall be responsible for replacement of the planting. Replacement shall be in a healthy, growing condition and spaced as indicated on the plans.
D. Fertilization: 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, and areas where plant material is not established, shall be replanted with appropriate material as soon as possible. For turf sod plantings, sod shall exhibit sufficient root growth knitting into the subgrade such that the sod can no longer be removed by hand. If a good rate of growth has not been demonstrated within 30 days of first planting/hydroseeding, Contractor shall be responsible to determine the appropriate cultural practices necessary to obtain good growth. Contractor shall obtain agronomic soils testing of all areas not showing good growth and shall provide copies of the test results to the Park Projects Inspector to verify the appropriateness of all maintenance work performed. If a good rate of growth has not been demonstrated within 30 days of first planting/hydroseeding, Contractor shall be responsible to determine the appropriate cultural practices necessary to obtain good growth. Contractor shall obtain agronomic soils testing of all areas not showing good growth and shall provide copies of the test results to the Park Projects Inspector to verify the appropriateness of all maintenance work performed. If a good rate of growth has not been demonstrated within 30 days of first planting/hydroseeding, Contractor shall be responsible to determine the appropriate cultural practices necessary to obtain good growth. Contractor shall obtain agronomic soils testing of all areas not showing good growth and shall provide copies of the test results to the Park Projects Inspector to verify the appropriateness of all maintenance work performed. 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