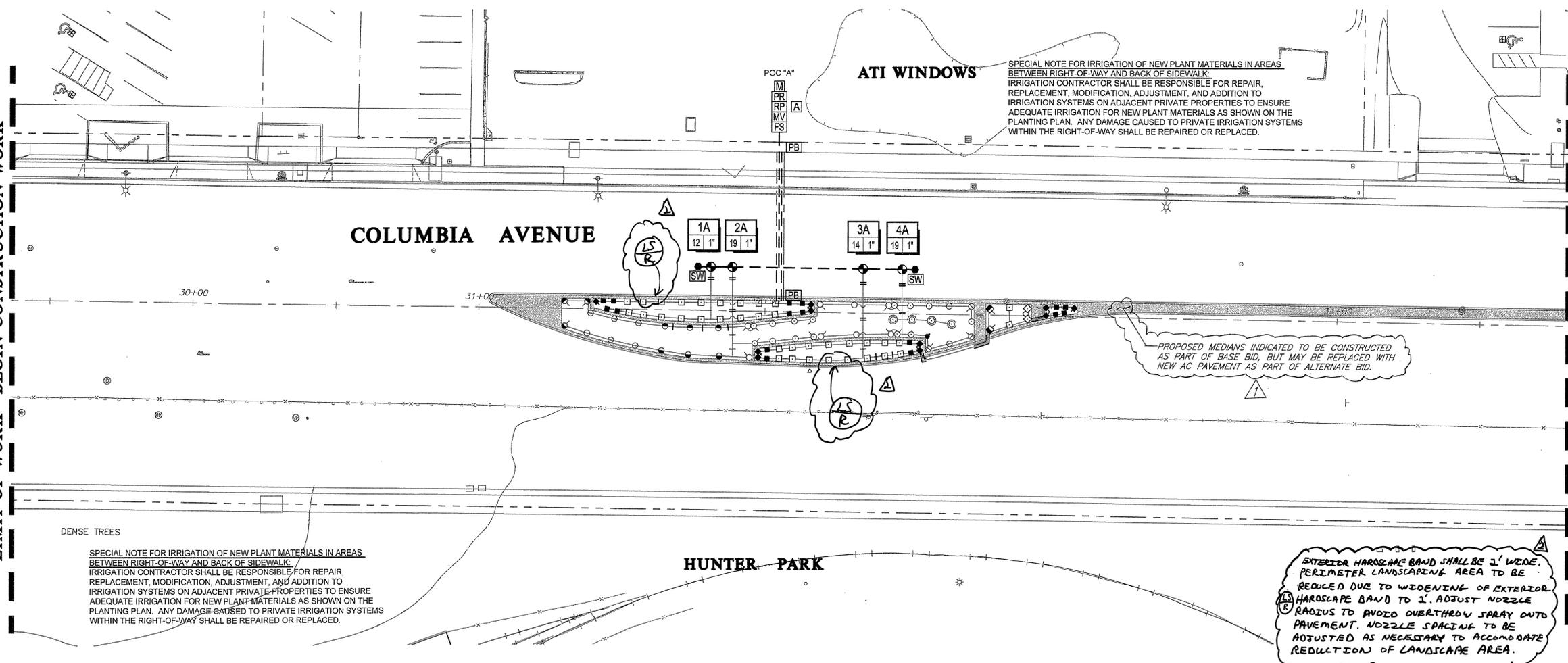


LIMIT OF WORK - BEGIN CONSTRUCTION WORK

MATCHLINE 'E' STA. 34+80.65 - SEE SHEET IR-2



POINT OF CONNECTION 'A'
MAKE IRRIGATION POINT OF CONNECTION INTO NEW 1" WATER METER WITH 1 1/4" SERVICE LINE. VERIFY EXACT LOCATION IN THE FIELD AND ADJUST AS NECESSARY. IRRIGATION CONTRACTOR SHALL COORDINATE NEW METER AND SERVICE WITH THE CITY OF RIVERSIDE WATER DEPARTMENT AND PAY ALL ASSOCIATED FEES. COORDINATE WORK WITH GENERAL CONTRACTOR AND CITY INSPECTOR AS NECESSARY. INSTALL BACKFLOW PREVENTER IMMEDIATELY DOWNSTREAM OF METER PER ALL LOCAL CODES. INSTALL IN STRONG BOX SB-305S STAINLESS STEEL LOCKING ENCLOSURE. FINAL BACKFLOW PREVENTER LOCATION TO BE APPROVED IN THE FIELD BY THE CITY OR AUTHORIZED REPRESENTATIVE. INSTALL PRESSURE REGULATOR WITH BACKFLOW ASSEMBLY AND SET TO 75 PSI. INSTALL MASTER VALVE DOWNSTREAM OF BACKFLOW ASSEMBLY AND WIRE TO CONTROLLER PER MANUFACTURER'S DIRECTIONS. THIS WILL REQUIRE ONE DEDICATED, COLOR-CODED 14 GA UF WIRE FROM MASTER VALVE TO CONTROLLER AND A CONNECTION TO THE COMMON WIRE. INSTALL FLOW SENSOR DOWNSTREAM OF MASTER VALVE AND WIRE TO CONTROLLER PER MANUFACTURER'S DIRECTIONS. THIS WILL REQUIRE TWO DEDICATED, COLOR-CODED 14 GA UF WIRES FROM FLOW SENSOR TO CONTROLLER. MAXIMUM DEMAND IS 19 GPM. STATIC PRESSURE AT METER RANGES FROM 108 TO 121 PSI (INFORMATION FROM STELLA GARCIA AT THE CITY OF RIVERSIDE WATER DEPARTMENT ON 9/18/08 AT 951-828-5285). CONTRACTOR SHALL VERIFY STATIC PRESSURE AT POC PRIOR TO START OF WORK AND NOTIFY THE LANDSCAPE ARCHITECT IF A DISCREPANCY IS FOUND. DO NOT PROCEED WITH ANY IRRIGATION WORK UNTIL ANY PRESSURE RELATED ISSUES HAVE BEEN RESOLVED TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT AND THE CITY.

CONTROLLER 'A'
INSTALL IRRIGATION CONTROLLER ASSEMBLY ADJACENT TO POINT OF CONNECTION AS SHOWN. ASSEMBLY WILL COME FROM CALSENSE PRE ASSEMBLED IN STAINLESS STEEL ENCLOSURE. MOUNT ENCLOSURE PER MANUFACTURER'S DIRECTIONS AND CITY STANDARDS. FINAL CONTROLLER LOCATION TO BE APPROVED IN THE FIELD BY THE CITY OR AUTHORIZED REPRESENTATIVE. THE CITY IS TO PROVIDE 120V AC POWER TO THE FINAL CONTROLLER LOCATION. THE IRRIGATION CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CITY AND/OR GENERAL CONTRACTOR AS NECESSARY. THE IRRIGATION CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS PER LOCAL CODES. MOUNT, GROUND, AND WIRE ALL THE CONTROL EQUIPMENT PER THE MANUFACTURER'S DIRECTIONS, THESE PLANS, AND PER ALL LOCAL CODES.

'A' POINT OF CONNECTION INFORMATION
WATER TYPE - POTABLE
METER SIZE - 1"
BACKFLOW PREVENTER SIZE - 1"
PRESSURE REGULATOR - 1" (75 PSI)
FLOW SENSOR - 1"
MASTER VALVE - 1"
MAXIMUM DEMAND - 19 GPM
NUMBER OF VALVES - 4
CONTROLLER SIZE - 8 STATION
STATIC PRESSURE AT METER - 108 PSI MIN.

'A' PRESSURE LOSS CALCULATIONS		
(HIGHEST FLOW - 19 GPM FARTHEST FROM POC)		
EQUIPMENT	SIZE	LOSS
SERVICE LINE - 50' @ 19 GPM	1 1/4"	2.2
WATER METER - 19 GPM	1"	2.0
BACKFLOW PREVENTER - 19 GPM	1"	13.0
MASTER VALVE - 19 GPM	1"	2.6
FLOW SENSOR - 19 GPM	1"	1.0
MAINLINE - 150' SCH 40 PVC - 19 GPM	1 1/2"	1.6
CONTROL VALVE - 19 GPM	1"	2.6
LATERAL LINES - SCH 40 PVC	VAR.	3.0
SUBTOTAL PRESSURE LOSSES		28.0
MISC. LOSSES THRU SYSTEM (10%)		2.8
ELEVATION GAIN (FT)		0
TOTAL PRESSURE LOSSES		30.8
PRESSURE REQUIRED AT HEAD		30.0
TOTAL PRESSURE REQUIRED		60.8
REGULATED PRESSURE AT POC		70.0
RESIDUAL PRESSURE		9.2

EQUIPMENT LEGEND			
SYMBOL	MANUFACTURER / MODEL NUMBER	SIZE	DETAIL
[M]	WATER METER - SEE POINT OF CONNECTION NOTE ON PLANS	1"	
[A]	CALSENSE ET 2000e-8-LR-RRE-SSER CONTROLLER ASSEMBLY	8 STATION	
[B][C][E]	CALSENSE ET 2000e-24-LR-RRE-SSER CONTROLLER ASSEMBLY	24 STATION	
[D]	CALSENSE ET 2000e-16-LR-RRE-SSER CONTROLLER ASSEMBLY	16 STATION	
[RP]	FEBCO 825YA SERIES REDUCED PRESSURE BACKFLOW PREVENTER - IN LOCKING ENCLOSURE	1"	
[PR]	WILKINS 500 SERIES PRESSURE REGULATING VALVE - INSTALL WITH BACKFLOW DEVICE	1"	
[MV]	SUPERIOR 950 SERIES NORMALLY CLOSED BRASS MASTER CONTROL VALVE	1"	
[FS]	CALSENSE FM-1B FLOW SENSOR	1"	
[SW]	SPARE WIRES - INSTALL TWO TO EACH END OF EACH MAINLINE	12 GA	
[PB]	CONTROL WIRE PULL BOX	N/A	
[●]	NIBCO T-580-70 BRONZE BALL VALVE - 3" AND SMALLER	LINE SIZE	
[○]	TORO 100-SLVLC QUICK COUPLING VALVE WITH LOCKING VINYL COVER	1"	
[□]	SUPERIOR 950 SERIES BRASS ELECTRIC CONTROL VALVE	1"	
[—]	SCH 40 PVC IRRIGATION PRESSURE MAINLINE - 18" MINIMUM COVER	1 1/2"	
[—]	SCH 40 PVC NON-PRESSURE LATERAL LINE - 12" MINIMUM COVER	PLAN SIZE	
[—]	SCH 40 PVC PIPE SLEEVING - 18" MIN. COVER - EXTEND 12" BEYOND EDGE OF HARDSCAPE	PLAN SIZE	
[—]	SCH 40 PVC WIRE SLEEVING - 18" MIN. COVER - EXTEND 12" BEYOND EDGE OF HARDSCAPE	PLAN SIZE	
[—]	UF DIRECT BURIAL CONTROL WIRE WITH WATERPROOF CONNECTIONS	12 GA	
[NOT SHOWN]	UF DIRECT BURIAL CONTROL WIRE WITH WATERPROOF CONNECTIONS	12 GA	

CONTROLLER SPECIFICATIONS SUBJECT TO CHANGE PENDING RADIO RECEPTION TESTING BY CALSENSE. CONTACT BOB MOXLEY AT CALSENSE FOR INFORMATION AND ORDERING CONTROLLERS (760-580-9428)

HEAD ADJUSTMENTS
IRRIGATION CONTRACTOR SHALL FINE TUNE AND ADJUST ALL IRRIGATION SYSTEM TO PROVIDE MAXIMUM HEAD-TO-HEAD COVERAGE WITH LITTLE OR NO OVERSPRAY OUTSIDE THE PLANTED AREAS. NO OVERSPRAY WILL BE ALLOWED IN THE ROADWAYS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO ADJUSTING THE PRESSURE REGULATOR AT THE POC AS NECESSARY, ADJUSTING THE FLOW CONTROL OF EACH AND EVERY CONTROL VALVE AS NECESSARY, ADJUSTING THE RADIUS OF EACH AND EVERY SPRAY HEAD AS NECESSARY, USING THE BEST NOZZLE AS DETERMINED NECESSARY (ARC AND RADIUS), AND USING AN ADJUSTABLE NOZZLE IF NECESSARY, ETC.

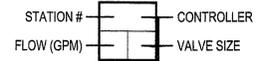
SLEEVING
MAINLINE AND VALVES SHOWN OUTSIDE OF PLANTED AREAS FOR CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT IN ADJACENT PLANTED AREAS EXCEPT WHERE SLEEVING IS SHOWN ON THE PLANS. ALL PIPES AND WIRES THAT MUST RUN UNDER HARDSCAPE TO BE SLEEVED IN SCH 40 PVC SLEEVES ACCORDING TO THE SLEEVING CHART.

WIRING
EACH SYSTEM (POC) WILL REQUIRE A COMMON WIRE (WHITE), CONTROL WIRES FOR EACH VALVE (UNIQUE COLOR), A CONTROL WIRE FOR THE MASTER VALVE (UNIQUE COLOR), TWO WIRES FOR THE FLOW SENSOR (EACH UNIQUELY COLORED), AND TWO SPARE WIRES TO THE END OF EACH MAINLINE RUN (UNIQUE COLOR).

SPRINKLER LEGEND											
SYMBOL	MANUFACTURER / MODEL NUMBER	NOZZLE	RAD	PSI	FLOW - GPM						DETAIL
					Q	T	H	TT	TQ	F	
TURF POP-UP SPRAY HEADS											
[●]	RAIN BIRD 1806-5' SERIES	Q/T/H/F	5'	30	0.10	0.13	0.20			1.41	PER CITY STD. DETAILS
[●]	RAIN BIRD 1806	6-VAN	8'	30	0.37	0.40	0.60	0.80	1.10		
[●]	RAIN BIRD 1806-8' SERIES	Q/T/H/F	8'	30	0.26	0.35	0.52			1.05	
[●]	RAIN BIRD 1806	8-VAN	8'	30	0.72	0.79	1.19	1.59	1.65		
[●]	RAIN BIRD 1806-10' SERIES	Q/T/H/F	10'	30	0.39	0.53	0.79			1.58	
[●]	RAIN BIRD 1806-12' SERIES	Q/T/H/T/T/Q/F	12'	30	0.65	0.87	1.30	1.74	1.95	2.60	
[●]	RAIN BIRD 1806-15' SERIES	Q/T/H/T/T/Q/F	15'	30	0.92	1.23	1.85	2.48	2.78	3.70	
SHRUB HI-POP SPRAY HEADS											
[●]	RAIN BIRD 1812-5' SERIES	Q/T/H/F	5'	30	0.10	0.13	0.20			1.41	PER CITY STD. DETAILS
[●]	RAIN BIRD 1812-8' SERIES	Q/T/H/F	8'	30	0.26	0.35	0.52			1.05	
[●]	RAIN BIRD 1812-10' SERIES	Q/T/H/F	10'	30	0.39	0.53	0.79			1.58	
[●]	RAIN BIRD 1812-12' SERIES	Q/T/H/T/T/Q/F	12'	30	0.65	0.87	1.30	1.74	1.95	2.60	
[●]	RAIN BIRD 1812-5-B SERIES	Q/H/F/CST	5'	30	0.50/1.00/1.50/0.50						
VINE BUBBLERS											
[●]	RAIN BIRD 1401 SERIES	N/A	N/A	30	0.25					CITY STD.	

PIPE SIZING	
—	3/4" PIPE
—	1" PIPE
—	1 1/4" PIPE
—	1 1/2" PIPE
—	2" PIPE
—	2 1/2" PIPE
—	3" PIPE
—	4" PIPE
—	6" PIPE
—	8" PIPE

SCH 40 PVC SLEEVING CHART		
1 1/4" SLEEVE	1-8 WIRES	1/2" PIPE
1 1/2" SLEEVE	9-16 WIRES	3/4" PIPE
2" SLEEVE	17-26 WIRES	1" PIPE
2 1/2" SLEEVE	27-38 WIRES	1 1/4" PIPE
3" SLEEVE	39-54 WIRES	1 1/2" PIPE
4" SLEEVE	55-100 WIRES	2" PIPE
6" SLEEVE	100+ WIRES	3" PIPE
8" SLEEVE	N/A	4" PIPE
12" SLEEVE	N/A	6" PIPE



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TIME: 6-10-09 - 10:08am
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IAN DAVIDSON
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E-MAIL: IDAVIDSON@IADLANC.COM
IDL# 11007 - 6/8/2009

REGISTERED LANDSCAPE ARCHITECT
IAN DAVIDSON
NOV 15 2008
STATE OF CALIFORNIA

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY [] BY [] DATE []
CONSULTANT CONTRACT ADMIN.
PRINCIPAL ENGINEER
STREET SERVICES
SURVEYOR
TRAFFIC DIVISION
PARKS DEPARTMENT

APPROVED PER SIGNATURE ON SHEET - 1
CITY ENGINEER

DATE []

DESIGNED BY [] DRAWN BY [] CHECKED BY []

CITY OF RIVERSIDE
COLUMBIA AVENUE AND IOWA AVENUE
STREET IMPROVEMENT PROJECT
LANDSCAPE PLANS
IRRIGATION PLAN

DESIGN W.O. NO. 0702989
CONSTRUCTION W.O. NO. 0915428

R-4132L
IR-1
SHEET 45 OF 76

MATCHLINE 'E' STA. 25+04.83 IOWA AVE. - SEE SHEET IR-6

SPECIAL NOTE FOR IRRIGATION OF NEW PLANT MATERIALS IN AREAS BETWEEN RIGHT-OF-WAY AND BACK OF SIDEWALK:
IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR, REPLACEMENT, MODIFICATION, ADJUSTMENT, AND ADDITION TO IRRIGATION SYSTEMS ON ADJACENT PRIVATE PROPERTIES TO ENSURE ADEQUATE IRRIGATION FOR NEW PLANT MATERIALS AS SHOWN ON THE PLANTING PLAN. ANY DAMAGE CAUSED TO PRIVATE IRRIGATION SYSTEMS WITHIN THE RIGHT-OF-WAY SHALL BE REPAIRED OR REPLACED.

HUNTER CORP PLAZA

IOWA AVENUE

HUNTER CORP PLAZA

COLUMBIA AVENUE

MATCHLINE STA. 34+80.65 COLUMBIA AVE. - SEE SHEET IR-1

MATCHLINE STA. 38+58.72 COLUMBIA AVE. - SEE SHEET IR-3

PROPOSED MEDIANS INDICATED TO BE CONSTRUCTED AS PART OF BASE BID, BUT MAY BE REPLACED WITH NEW AC PAVEMENT AS PART OF ALTERNATE BID.

PROPOSED MEDIANS INDICATED TO BE CONSTRUCTED AS PART OF BASE BID, BUT MAY BE REPLACED WITH NEW AC PAVEMENT AS PART OF ALTERNATE BID.

PROPOSED MONUMENT IMPROVEMENTS PER DRAWING RC-08-1120

EXTERIOR HARDSCAPE BAND SHALL BE 1' WIDE. PERIMETER LANDSCAPING AREA TO BE REDUCED DUE TO WIDENING OF EXTERIOR HARDSCAPE BAND TO 2'. ADJUST NOZZLE RADIUS TO AVOID OVERTHROW SPRAY ONTO PAVEMENT. NOZZLE SPACING TO BE ADJUSTED AS NECESSARY TO ACCOMMODATE REDUCTION OF LANDSCAPE AREA.

HUNTER PARK

BOURNS

SPECIAL NOTE FOR IRRIGATION OF NEW PLANT MATERIALS IN AREAS BETWEEN RIGHT-OF-WAY AND BACK OF SIDEWALK:
IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR, REPLACEMENT, MODIFICATION, ADJUSTMENT, AND ADDITION TO IRRIGATION SYSTEMS ON ADJACENT PRIVATE PROPERTIES TO ENSURE ADEQUATE IRRIGATION FOR NEW PLANT MATERIALS AS SHOWN ON THE PLANTING PLAN. ANY DAMAGE CAUSED TO PRIVATE IRRIGATION SYSTEMS WITHIN THE RIGHT-OF-WAY SHALL BE REPAIRED OR REPLACED.

MATCHLINE 'C' STA. 21+33.17 - SEE SHEET IR-5

EQUIPMENT LEGEND			
SYMBOL	MANUFACTURER / MODEL NUMBER	SIZE	DETAIL
[M]	WATER METER - SEE POINT OF CONNECTION NOTE ON PLANS	1"	PER CITY STD. DETAILS
[A]	CALSENSE ET 2000e-8-LR-RRE-SSER CONTROLLER ASSEMBLY	8 STATION	
[B][C][E]	CALSENSE ET 2000e-24-LR-RRE-SSER CONTROLLER ASSEMBLY	24 STATION	
[D]	CALSENSE ET 2000e-16-LR-RRE-SSER CONTROLLER ASSEMBLY	16 STATION	
[RP]	FEBCO 825YA SERIES REDUCED PRESSURE BACKFLOW PREVENTER - IN LOCKING ENCLOSURE	1"	
[PR]	WILKINS 500 SERIES PRESSURE REGULATING VALVE - INSTALL WITH BACKFLOW DEVICE	1"	
[MV]	SUPERIOR 950 SERIES NORMALLY CLOSED BRASS MASTER CONTROL VALVE	1"	
[FS]	CALSENSE FM-1B FLOW SENSOR	1"	
[SW]	SPARE WIRES - INSTALL TWO TO EACH END OF EACH MAINLINE	12 GA	
[PB]	CONTROL WIRE PULL BOX	N/A	
[X]	NIBCO T-580-70 BRONZE BALL VALVE - 3" AND SMALLER	LINE SIZE	
[O]	TORO 100-SLVLC QUICK COUPLING VALVE WITH LOCKING VINYL COVER	1"	
[V]	SUPERIOR 950 SERIES BRASS ELECTRIC CONTROL VALVE	1"	
[S]	SCH 40 PVC IRRIGATION PRESSURE MAINLINE - 18" MINIMUM COVER	1 1/2"	
[L]	SCH 40 PVC NON-PRESSURE LATERAL LINE - 12" MINIMUM COVER	PLAN SIZE	
[SL]	SCH 40 PVC PIPE SLEEVING - 18" MIN. COVER - EXTEND 12" BEYOND EDGE OF HARDSCAPE	PLAN SIZE	
[SW]	SCH 40 PVC WIRE SLEEVING - 18" MIN. COVER - EXTEND 12" BEYOND EDGE OF HARDSCAPE	PLAN SIZE	
[N]	NOT SHOWN	UF DIRECT BURIAL CONTROL WIRE WITH WATERPROOF CONNECTIONS	12 GA

CONTROLLER SPECIFICATIONS SUBJECT TO CHANGE PENDING RADIO RECEPTION TESTING BY CALSENSE. CONTACT BOB MOXLEY AT CALSENSE FOR INFORMATION AND ORDERING CONTROLLERS (760-580-9428)

HEAD ADJUSTMENTS
IRRIGATION CONTRACTOR SHALL FINE TUNE AND ADJUST ALL IRRIGATION SYSTEM TO PROVIDE MAXIMUM HEAD-TO-HEAD COVERAGE WITH LITTLE OR NO OVSERSPRAY OUTSIDE THE PLANTED AREAS. NO OVSERSPRAY WILL BE ALLOWED IN THE ROADWAYS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO ADJUSTING THE PRESSURE REGULATOR AT THE POC AS NECESSARY, ADJUSTING THE FLOW CONTROL OF EACH AND EVERY CONTROL VALVE AS NECESSARY, ADJUSTING THE RADIUS OF EACH AND EVERY SPRAY HEAD AS NECESSARY, USING THE BEST NOZZLE AS DETERMINED NECESSARY (ARC AND RADIUS), AND USING AN ADJUSTABLE NOZZLE IF NECESSARY, ETC.

SLEEVING
MAINLINE AND VALVES SHOWN OUTSIDE OF PLANTED AREAS FOR CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT IN ADJACENT PLANTED AREAS EXCEPT WHERE SLEEVING IS SHOWN ON THE PLANS. ALL PIPES AND WIRES THAT MUST RUN UNDER HARDSCAPE TO BE SLEEVED IN SCH 40 PVC SLEEVES ACCORDING TO THE SLEEVING CHART.

WIRING
EACH SYSTEM (POC) WILL REQUIRE A COMMON WIRE (WHITE), CONTROL WIRES FOR EACH VALVE (UNIQUE COLOR), A CONTROL WIRE FOR THE MASTER VALVE (UNIQUE COLOR), TWO WIRES FOR THE FLOW SENSOR (EACH UNIQUELY COLORED), AND TWO SPARE WIRES TO THE END OF EACH MAINLINE RUN (UNIQUE COLOR).

SPRINKLER LEGEND												
SYMBOL	MANUFACTURER / MODEL NUMBER	NOZZLE	RAD	PSI	FLOW - GPM						DETAIL	
					Q	T	H	TT	TQ	F		
TURF POP-UP SPRAY HEADS												
[Symbol]	RAIN BIRD 1806-5' SERIES	Q/T/H/F	5'	30	0.10	0.13	0.20			1.41	PER CITY STD. DETAILS	
[Symbol]	RAIN BIRD 1806	6-VAN	6'	30	0.37	0.40	0.60	0.80	1.10			
[Symbol]	RAIN BIRD 1806-8' SERIES	Q/T/H/F	8'	30	0.26	0.35	0.52			1.05		
[Symbol]	RAIN BIRD 1806	8-VAN	8'	30	0.72	0.79	1.19	1.59	1.55			
[Symbol]	RAIN BIRD 1806-10' SERIES	Q/T/H/F	10'	30	0.39	0.53	0.79			1.58		
[Symbol]	RAIN BIRD 1806-12' SERIES	Q/T/H/TT/TQ/F	12'	30	0.65	0.87	1.30	1.74	1.95	2.60		
[Symbol]	RAIN BIRD 1806-15' SERIES	Q/T/H/TT/TQ/F	15'	30	0.92	1.23	1.85	2.48	2.78	3.70		
SHRUB HI-POP SPRAY HEADS												
[Symbol]	RAIN BIRD 1812-5' SERIES	Q/T/H/F	5'	30	0.10	0.13	0.20			1.41		PER CITY STD. DETAILS
[Symbol]	RAIN BIRD 1812-8' SERIES	Q/T/H/F	8'	30	0.26	0.35	0.52			1.05		
[Symbol]	RAIN BIRD 1812-10' SERIES	Q/T/H/F	10'	30	0.39	0.53	0.79			1.58		
[Symbol]	RAIN BIRD 1812-12' SERIES	Q/T/H/TT/TQ/F	12'	30	0.65	0.87	1.30	1.74	1.95	2.60		
[Symbol]	RAIN BIRD 1812-5-B SERIES	Q/H/F/CST	5'	30	0.50/1.00/1.50/0.50							
VINE BUBBLERS												
[Symbol]	RAIN BIRD 1401 SERIES	N/A	N/A	30	0.25						CITY STD.	

PIPE SIZING		SCH 40 PVC SLEEVING CHART	
[Symbol]	3/4" PIPE	1 1/4" SLEEVE	1-8 WIRES
[Symbol]	1" PIPE	1 1/2" SLEEVE	9-16 WIRES
[Symbol]	1 1/4" PIPE	2" SLEEVE	17-26 WIRES
[Symbol]	1 1/2" PIPE	2 1/2" SLEEVE	27-38 WIRES
[Symbol]	2" PIPE	3" SLEEVE	39-54 WIRES
[Symbol]	2 1/2" PIPE	4" SLEEVE	55-100 WIRES
[Symbol]	3" PIPE	6" SLEEVE	100+ WIRES
[Symbol]	4" PIPE	8" SLEEVE	N/A
[Symbol]	6" PIPE	12" SLEEVE	N/A
[Symbol]	8" PIPE		



IAN DAVIDSON, LANDSCAPE ARCHITECTURE
3547 MARKET STREET
RIVERSIDE, CA 92501
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E-MAIL: IDAVIDSON@DLAINE.COM
DLA# 11007 - 6/8/2009



DESIGNED BY: JLD	DRAWN BY: SS	CHECKED BY: JLD
<p>REduced MEDIAN LANDSCAPE AREA 6.1.1/1/09 PROJECT SCOPE REDUCED 5.1.1/1/09</p>		
MARK	REVISIONS	APPR. DATE

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY: [Signature] BY: [Signature] DATE: [Date]
APPROVED PER SIGNATURE ON SHEET - 1
DATE: [Date]

CITY OF RIVERSIDE
COLUMBIA AVENUE AND IOWA AVENUE
STREET IMPROVEMENT PROJECT
LANDSCAPE PLANS
IRRIGATION PLAN

DESIGN W.O. NO. 0702989
CONSTRUCTION W.O. NO. 0915428
R-4132L
IR-2
SHEET 46 OF 76

DWG: J:\2007\11007 - Iowa - Columbia Street Improvements\Drawings\Landscaping\11007IR.dwg
TIME: 8-10-09 - 10:09am User: Ryan Dierking XRef Files: X11007tbl_ex X11007tbl X11007tbl

MATCHLINE STA. 38+58.72 - SEE SHEET IR-2

MATCHLINE STA. 45+09.50 - SEE BELOW

MATCHLINE STA. 45+09.50 - SEE ABOVE

MATCHLINE STA. 51+60.21 - SEE SHEET IR-4

HUNTER CORP PLAZA

GRAINGER

COLUMBIA AVENUE

SPECIAL NOTE FOR IRRIGATION OF NEW PLANT MATERIALS IN AREAS BETWEEN RIGHT-OF-WAY AND BACK OF SIDEWALK: IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR, REPLACEMENT, MODIFICATION, ADJUSTMENT, AND ADDITION TO IRRIGATION SYSTEMS ON ADJACENT PRIVATE PROPERTIES TO ENSURE ADEQUATE IRRIGATION FOR NEW PLANT MATERIALS AS SHOWN ON THE PLANTING PLAN. ANY DAMAGE CAUSED TO PRIVATE IRRIGATION SYSTEMS WITHIN THE RIGHT-OF-WAY SHALL BE REPAIRED OR REPLACED.

39+00

40+00

42+00

43+00

44+00

45+00

PROPOSED MEDIANS INDICATED TO BE CONSTRUCTED AS PART OF BASE BID, BUT MAY BE REPLACED WITH NEW AC PAVEMENT AS PART OF ALTERNATE BID.

BOURNS

BOURNS

EXTERIOR HARDSCAPE BAND SHALL BE 1" WIDE. PERIMETER LANDSCAPING AREA TO BE REDUCED DUE TO WIDENING OF EXTERIOR HARDSCAPE BAND TO 2'. ADJUST NOZZLE RADIUS TO AVOID OVERTHROW SPRAY ONTO PAVEMENT. NOZZLE SPACING TO BE ADJUSTED AS NECESSARY TO ACCOMMODATE REDUCTION OF LANDSCAPE AREA.

SEE SHEET IR-1 & IR-2 FOR IRRIGATION LEGEND

SPECIAL NOTE FOR IRRIGATION OF NEW PLANT MATERIALS IN AREAS BETWEEN RIGHT-OF-WAY AND BACK OF SIDEWALK: IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR, REPLACEMENT, MODIFICATION, ADJUSTMENT, AND ADDITION TO IRRIGATION SYSTEMS ON ADJACENT PRIVATE PROPERTIES TO ENSURE ADEQUATE IRRIGATION FOR NEW PLANT MATERIALS AS SHOWN ON THE PLANTING PLAN. ANY DAMAGE CAUSED TO PRIVATE IRRIGATION SYSTEMS WITHIN THE RIGHT-OF-WAY SHALL BE REPAIRED OR REPLACED.

GRAINGER

COLUMBIA AVENUE

7B

8B

9B

10B

11B

12B

13B

49+00

50+00

51+00

PROPOSED MEDIANS INDICATED TO BE CONSTRUCTED AS PART OF BASE BID, BUT MAY BE REPLACED WITH NEW AC PAVEMENT AS PART OF ALTERNATE BID.

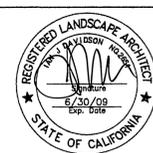
MEDIAN NOTE TO BE ALL HARDSCAPE

BOURNS



SCALE 1"=20'

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IDLA# 11007 - 6/8/2009



DESIGNED BY	JLD	DRAWN BY	SS	CHECKED BY	JLD
REVISIONS	NO.	DATE	BY	DESCRIPTION	
1		6/30/09	JLD	REDUCED MEDIAN LANDSCAPE AREA	
2		7/1/09	SS	PROJECT SCOPE REDUCED	

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT
APPROVED BY: [Signature] BY: [Signature] DATE: [Date]
CONST. CONTRACT ADMIN. [Signature] DATE: [Date]
PRINCIPAL ENGINEER [Signature] DATE: [Date]
STREET SERVICES [Signature] DATE: [Date]
SURVEYOR [Signature] DATE: [Date]
TRAFFIC DIVISION [Signature] DATE: [Date]
PARKS DEPARTMENT [Signature] DATE: [Date]

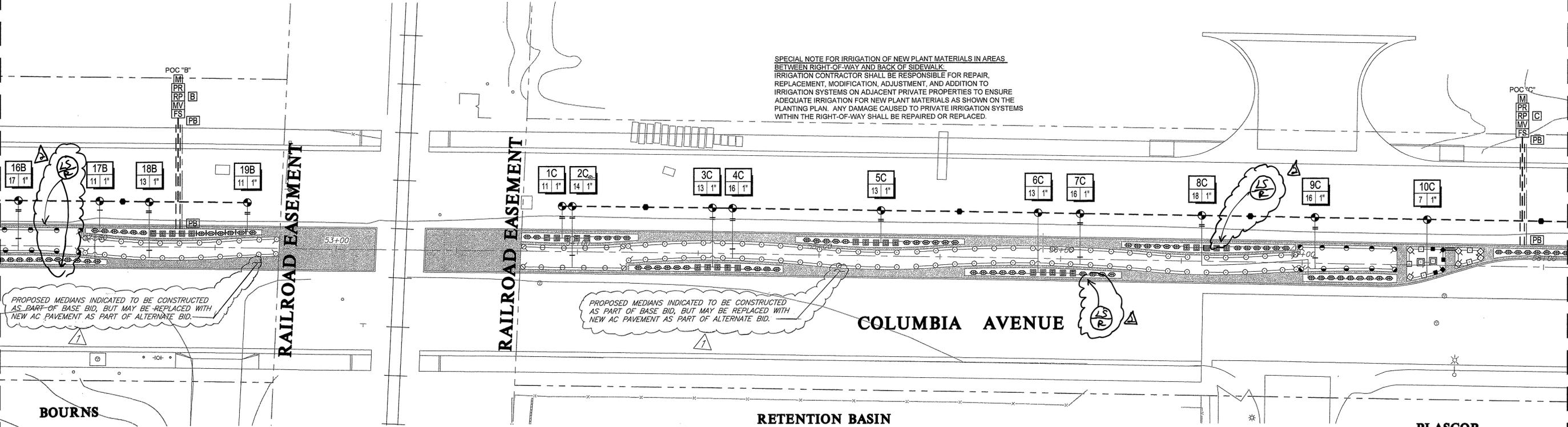
CITY OF RIVERSIDE
COLUMBIA AVENUE AND IOWA AVENUE
STREET IMPROVEMENT PROJECT
LANDSCAPE PLANS
IRRIGATION PLAN

DESIGN W.O. NO. 0702889
CONSTRUCTION W.O. NO. 0915428
R-4132L
IR-3
SHEET 47 OF 76

DWG: J:\2007\11007 - Iowa - Columbia Street Improvements\Drawings\Landscaping\11007IR.dwg
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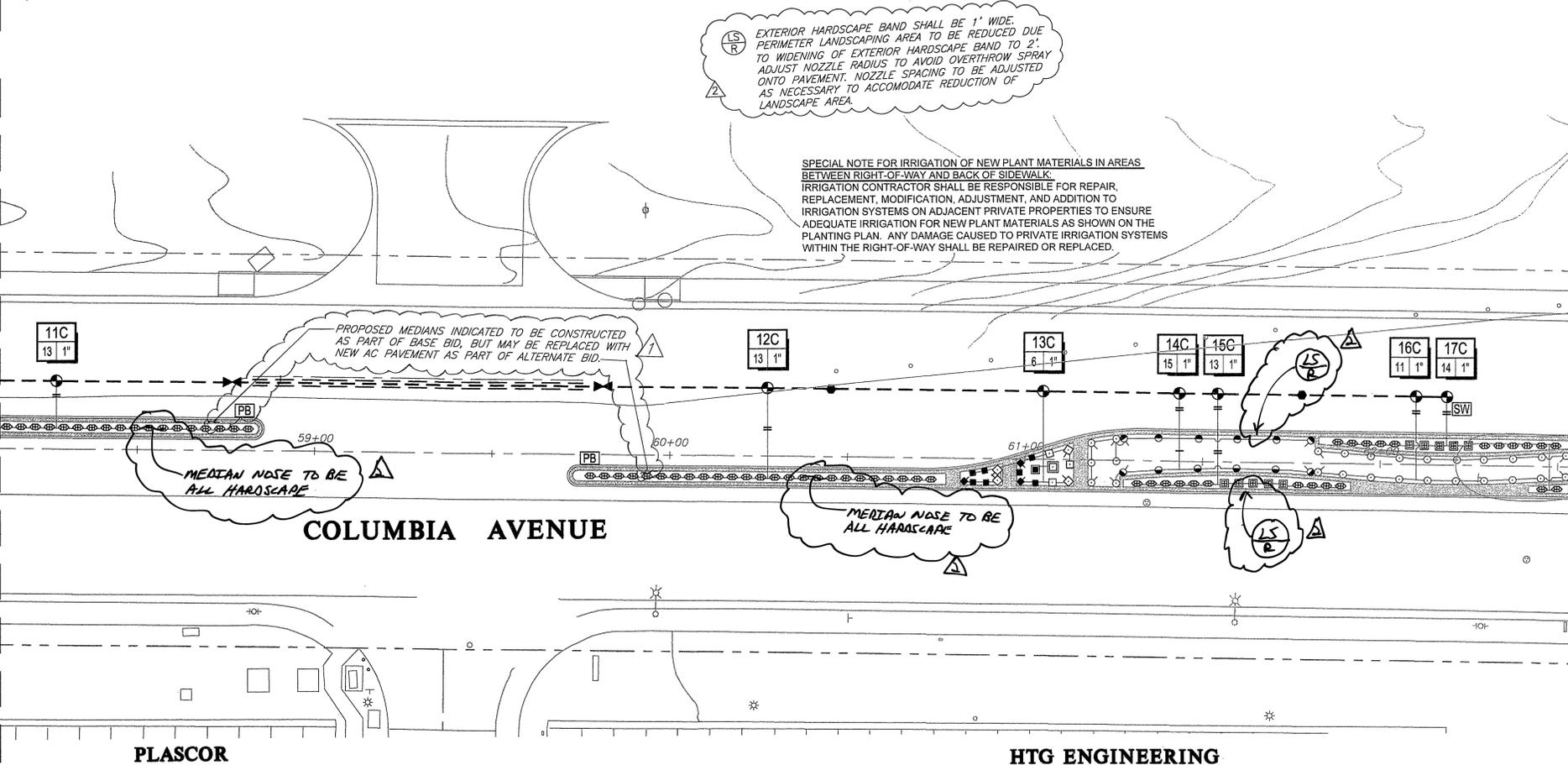
MATCHLINE STA. 51+60.21 - SEE SHEET IR-3

MATCHLINE STA. 58+10.57 - SEE BELOW



MATCHLINE STA. 58-10.57 - SEE ABOVE

END WORK - STA. 62+53.23



SEE SHEET IR-2 FOR IRRIGATION LEGEND

'B' PRESSURE LOSS CALCULATIONS
(HIGHEST FLOW - 18 GPM FARTHEST FROM POC)

EQUIPMENT	SIZE	LOSS
SERVICE LINE - 50' @ 18 GPM	1 1/4"	1.8
WATER METER - 18 GPM	1"	1.8
BACKFLOW PREVENTER - 18 GPM	1"	13.0
MASTER VALVE - 18 GPM	1"	2.6
FLOW SENSOR - 18 GPM	1"	1.0
MAINLINE - 1200' SCH 40 PVC	1 1/2"	10.7
CONTROL VALVE - 18 GPM	1"	2.6
LATERAL LINES - SCH 40 PVC	VAR.	3.0
SUBTOTAL PRESSURE LOSSES		36.5
MISC. LOSSES THRU SYSTEM (10%)		3.7
ELEVATION GAIN (FT)	0	0.0
TOTAL PRESSURE LOSSES		40.2
PRESSURE REQUIRED AT HEAD		30.0
TOTAL PRESSURE REQUIRED		70.2
REGULATED PRESSURE AT POC		80.0
RESIDUAL PRESSURE		9.9

POINT OF CONNECTIONS 'B' & 'C'
MAKE IRRIGATION POINT OF CONNECTION INTO NEW 1" WATER METER WITH 1 1/4" SERVICE LINE. VERIFY EXACT LOCATION IN THE FIELD AND ADJUST AS NECESSARY. IRRIGATION CONTRACTOR SHALL COORDINATE NEW METER AND SERVICE WITH THE CITY OF RIVERSIDE WATER DEPARTMENT AND PAY ALL ASSOCIATED FEES. COORDINATE WORK WITH GENERAL CONTRACTOR AND CITY INSPECTOR AS NECESSARY. INSTALL BACKFLOW PREVENTER IMMEDIATELY DOWNSTREAM OF METER PER ALL LOCAL CODES. INSTALL IN STRONG BOX SB-30SS STAINLESS STEEL LOCKING ENCLOSURE. FINAL BACKFLOW PREVENTER LOCATION TO BE APPROVED IN THE FIELD BY THE CITY OR AUTHORIZED REPRESENTATIVE. INSTALL PRESSURE REGULATOR WITH BACKFLOW ASSEMBLY AND SET TO 80 PSI. INSTALL MASTER VALVE DOWNSTREAM OF BACKFLOW ASSEMBLY AND WIRE TO CONTROLLER PER MANUFACTURER'S DIRECTIONS. THIS WILL REQUIRE ONE DEDICATED, COLOR-CODED 14 GA UF WIRE FROM MASTER VALVE TO CONTROLLER AND A CONNECTION TO THE COMMON WIRE. INSTALL FLOW SENSOR DOWNSTREAM OF MASTER VALVE AND WIRE TO CONTROLLER PER MANUFACTURER'S DIRECTIONS. THIS WILL REQUIRE TWO DEDICATED, COLOR-CODED 14 GA UF WIRES FROM FLOW SENSOR TO CONTROLLER. MAXIMUM DEMAND IS 18 GPM. STATIC PRESSURE AT METER RANGES FROM 108 TO 121 PSI (INFORMATION FROM STELLA GARCIA AT THE CITY OF RIVERSIDE WATER DEPARTMENT ON 9/18/08 AT 951-826-5285). CONTRACTOR SHALL VERIFY STATIC PRESSURE AT POC PRIOR TO START OF WORK AND NOTIFY THE LANDSCAPE ARCHITECT IF A DISCREPANCY IS FOUND. DO NOT PROCEED WITH ANY IRRIGATION WORK UNTIL ANY PRESSURE RELATED ISSUES HAVE BEEN RESOLVED TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT AND THE CITY.

'C' PRESSURE LOSS CALCULATIONS
(HIGHEST FLOW - 18 GPM)

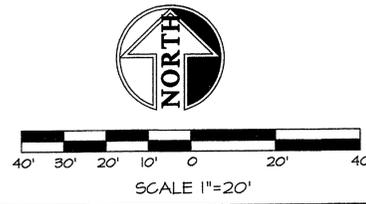
EQUIPMENT	SIZE	LOSS
SERVICE LINE - 50' @ 18 GPM	1 1/4"	1.8
WATER METER - 18 GPM	1"	1.8
BACKFLOW PREVENTER - 18 GPM	1"	13.0
MASTER VALVE - 18 GPM	1"	2.6
FLOW SENSOR - 18 GPM	1"	1.0
MAINLINE - 120' SCH 40 PVC	1 1/2"	1.1
CONTROL VALVE - 18 GPM	1"	2.6
LATERAL LINES - SCH 40 PVC	VAR.	3.0
SUBTOTAL PRESSURE LOSSES		26.9
MISC. LOSSES THRU SYSTEM (10%)		2.7
ELEVATION GAIN (FT)	0	0.0
TOTAL PRESSURE LOSSES		29.6
PRESSURE REQUIRED AT HEAD		30.0
TOTAL PRESSURE REQUIRED		59.6
REGULATED PRESSURE AT POC		70.0
RESIDUAL PRESSURE		10.4

CONTROLLERS 'B' & 'C'
INSTALL IRRIGATION CONTROLLER ASSEMBLY ADJACENT TO POINT OF CONNECTION AS SHOWN. ASSEMBLY WILL COME FROM CALSENSE PRE ASSEMBLED IN STAINLESS STEEL ENCLOSURE. MOUNT ENCLOSURE PER MANUFACTURER'S DIRECTIONS AND CITY STANDARDS. FINAL CONTROLLER LOCATION TO BE APPROVED IN THE FIELD BY THE CITY OR AUTHORIZED REPRESENTATIVE. THE CITY IS TO PROVIDE 120V AC POWER TO THE FINAL CONTROLLER LOCATION. THE IRRIGATION CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CITY AND / OR GENERAL CONTRACTOR AS NECESSARY. THE IRRIGATION CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS PER LOCAL CODES. MOUNT, GROUND, AND WIRE ALL THE CONTROL EQUIPMENT PER THE MANUFACTURER'S DIRECTIONS, THESE PLANS, AND PER ALL LOCAL CODES.

'B' POINT OF CONNECTION INFORMATION
WATER TYPE - POTABLE
METER SIZE - 1"
BACKFLOW PREVENTER SIZE - 1"
PRESSURE REGULATOR - 1" (80 PSI)
FLOW SENSOR - 1"
MASTER VALVE - 1"
MAXIMUM DEMAND - 18 GPM
NUMBER OF VALVES - 19
CONTROLLER SIZE - 24 STATION
STATIC PRESSURE AT METER - 108 PSI MIN.

'C' POINT OF CONNECTION INFORMATION
WATER TYPE - POTABLE
METER SIZE - 1"
BACKFLOW PREVENTER SIZE - 1"
PRESSURE REGULATOR - 1" (70 PSI)
FLOW SENSOR - 1"
MASTER VALVE - 1"
MAXIMUM DEMAND - 18 GPM
NUMBER OF VALVES - 17
CONTROLLER SIZE - 24 STATION
STATIC PRESSURE AT METER - 108 PSI MIN.

DWG: J. 2007-11-07 - lowd - Columbia Street Improv Drawings/Landscape/11007IR.dwg
TIME: 5-10-09 - 10:00am User: Ryan Dierking XRef Files: x11007tbl_ex x11007tbl_ex x11007tbl_ex



IAN DAVIDSON, LANDSCAPE ARCHITECTURE
3547 MARKET STREET
RIVERSIDE, CA 92501
951-683-1283 FAX 951-683-4353
E-MAIL: IDAVIDSON@DLAINC.COM
DLA# 11007 - 6/8/2009



DESIGNED BY	JLD	DRAWN BY	SS	CHECKED BY	JLD
APPROVED BY		DATE			
CONST. CONTRACT ADMIN.		DATE			
PRINCIPAL ENGINEER		DATE			
STREET SERVICES		DATE			
SUPERVISOR		DATE			
TRAFFIC DIVISION		DATE			
PARKS DEPARTMENT		DATE			

**CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT**

APPROVED BY: *[Signature]* DATE: _____
APPROVED PER SIGNATURE ON SHEET - 1
CITY ENGINEER

**CITY OF RIVERSIDE
COLUMBIA AVENUE AND IOWA AVENUE
STREET IMPROVEMENT PROJECT
LANDSCAPE PLANS
IRRIGATION PLAN**

DESIGN W.O. NO. 0702989
CONSTRUCTION W.O. NO. 0915428

**R-4132L
IR-4**

SHEET 48 OF 76

DWG: J:\2007\11037 - Iowa - Columbia Street Imp\cv\Drawings\Landscape\11007IR.dwg
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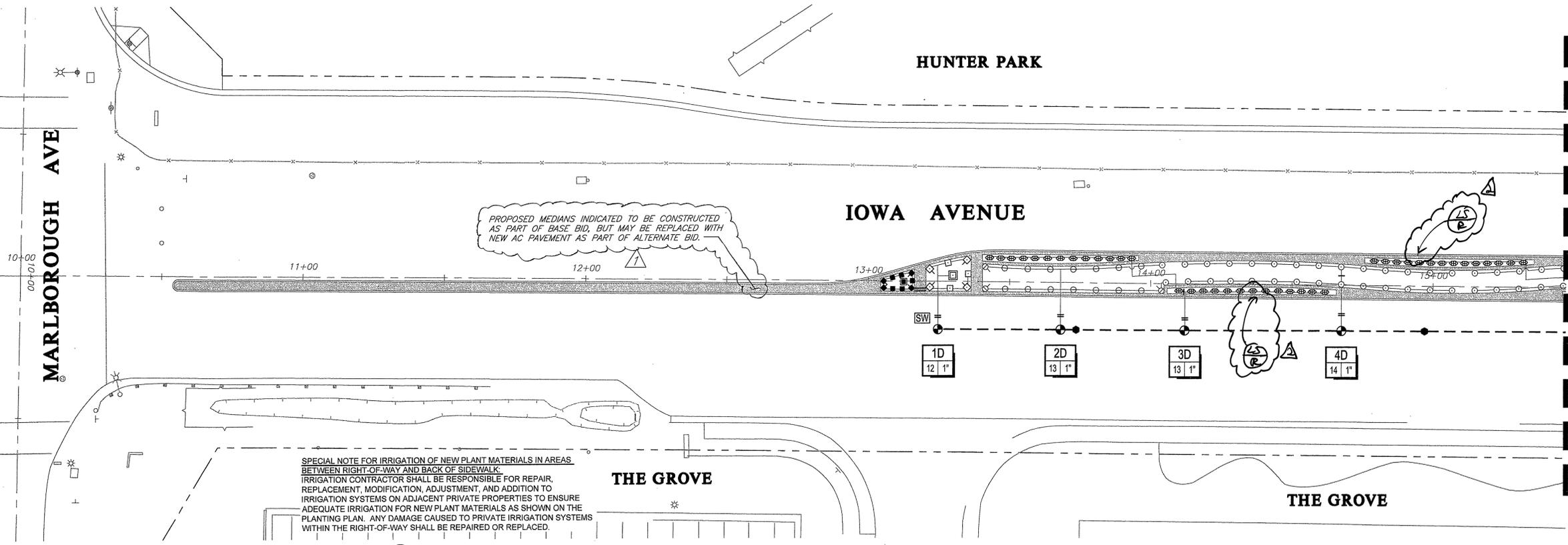
LIMIT OF WORK - BEGIN CONSTRUCTION WORK

MARLBOROUGH AVE

HUNTER PARK

IOWA AVENUE

MATCHLINE STA. 15+47.15 - SEE BELOW



SPECIAL NOTE FOR IRRIGATION OF NEW PLANT MATERIALS IN AREAS BETWEEN RIGHT-OF-WAY AND BACK OF SIDEWALK. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR, REPLACEMENT, MODIFICATION, ADJUSTMENT, AND ADDITION TO IRRIGATION SYSTEMS ON ADJACENT PRIVATE PROPERTIES TO ENSURE ADEQUATE IRRIGATION FOR NEW PLANT MATERIALS AS SHOWN ON THE PLANTING PLAN. ANY DAMAGE CAUSED TO PRIVATE IRRIGATION SYSTEMS WITHIN THE RIGHT-OF-WAY SHALL BE REPAIRED OR REPLACED.

EXTERIOR HARDSCAPE BAND SHALL BE 1' WIDE. PERIMETER LANDSCAPING AREA TO BE REDUCED DUE TO WIDENING OF EXTERIOR HARDSCAPE BAND TO 2'. ADJUST NOZZLE RADIUS TO AVOID OVERTHROW SPRAY ONTO PAVEMENT. NOZZLE SPACING TO BE ADJUSTED AS NECESSARY TO ACCOMMODATE REDUCTION OF LANDSCAPE AREA.

SEE SHEET IR-6 FOR IRRIGATION LEGEND

THE GROVE

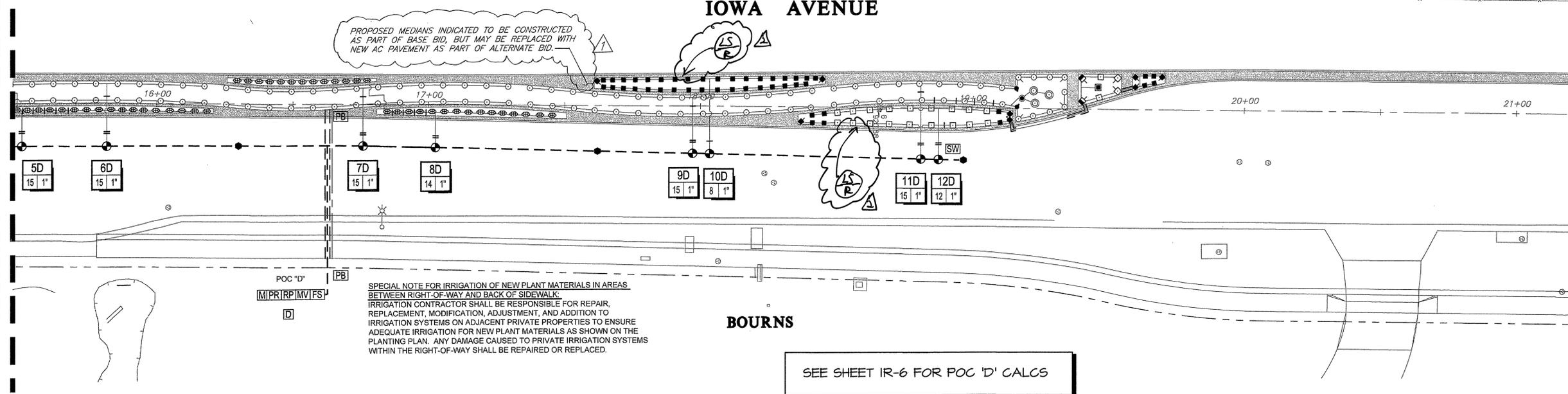
THE GROVE

HUNTER PARK

MATCHLINE STA. 15+47.15 - SEE ABOVE

IOWA AVENUE

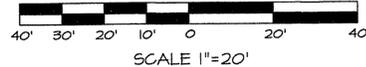
MATCHLINE 'C' STA. 21+33.17 - SEE SHEET IR-2



SPECIAL NOTE FOR IRRIGATION OF NEW PLANT MATERIALS IN AREAS BETWEEN RIGHT-OF-WAY AND BACK OF SIDEWALK. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR, REPLACEMENT, MODIFICATION, ADJUSTMENT, AND ADDITION TO IRRIGATION SYSTEMS ON ADJACENT PRIVATE PROPERTIES TO ENSURE ADEQUATE IRRIGATION FOR NEW PLANT MATERIALS AS SHOWN ON THE PLANTING PLAN. ANY DAMAGE CAUSED TO PRIVATE IRRIGATION SYSTEMS WITHIN THE RIGHT-OF-WAY SHALL BE REPAIRED OR REPLACED.

SEE SHEET IR-6 FOR POC 'D' CALCS

BOURNS



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 IDLA# 11007 - 6/8/2009



DESIGNED BY	LJD	DRAWN BY	SS	CHECKED BY	LJD
<p>REVISIONS</p> <p>1. REDUCED MEDIAN LANDSCAPE AREA E.L. 9/31/09</p> <p>2. PROJECT SCOPE REDUCED E.L. 7/1/09</p>					

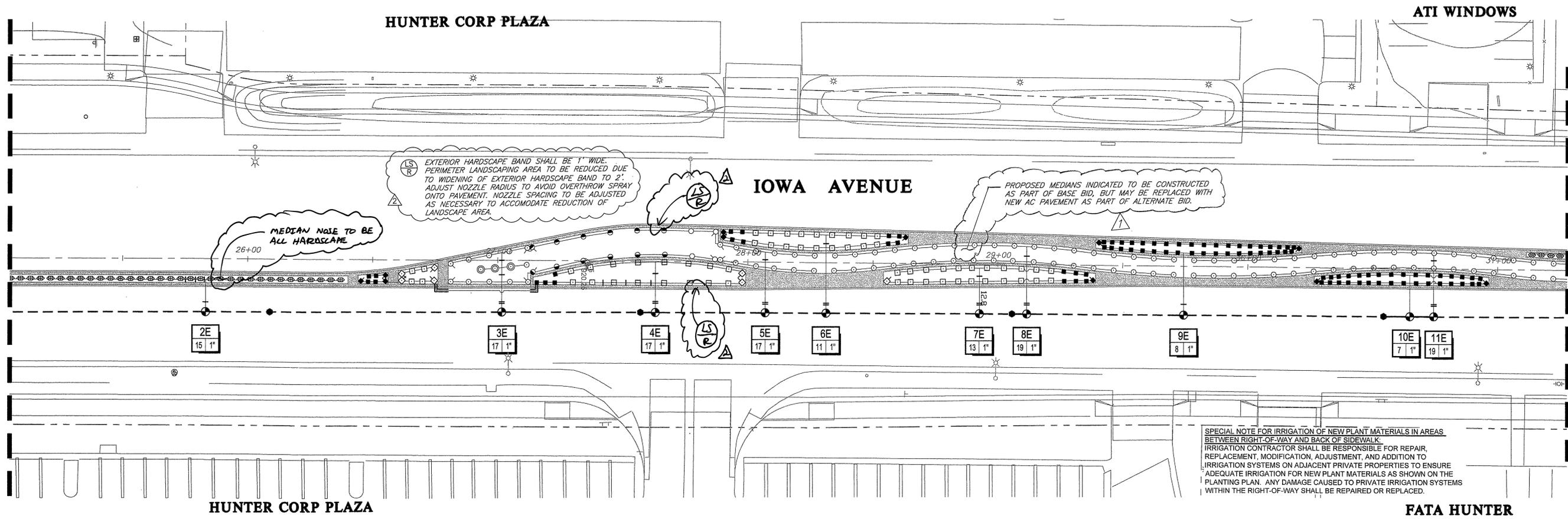
CITY OF RIVERSIDE, CALIFORNIA PUBLIC WORKS DEPARTMENT			
APPROVED BY	BY	DATE	APPROVED BY SIGNATURE ON SHEET - 1
CONST. CONTRACT ADMIN.			
PRINCIPAL ENGINEER			
STREET SERVICES			
SURVEYOR			
TRAFFIC DIVISION			
PARKS DEPARTMENT			

CITY OF RIVERSIDE
 COLUMBIA AVENUE AND IOWA AVENUE
 STREET IMPROVEMENT PROJECT
LANDSCAPE PLANS
IRRIGATION PLAN

DESIGN W.O. NO. 0702989
 CONSTRUCTION W.O. NO. 0915428
R-4132L
IR-5
 SHEET 49 OF 76

MATCHLINE 'E' STA. 25+04.83 - SEE SHEET IR-2

MATCHLINE STA. 31+27.85 - SEE SHEET IR-7



HUNTER CORP PLAZA

FATA HUNTER

POINT OF CONNECTION 'D'
MAKE IRRIGATION POINT OF CONNECTION INTO NEW 1" WATER METER WITH 1 1/4" SERVICE LINE. VERIFY EXACT LOCATION IN THE FIELD AND ADJUST AS NECESSARY. IRRIGATION CONTRACTOR SHALL COORDINATE NEW METER AND SERVICE WITH THE CITY OF RIVERSIDE WATER DEPARTMENT AND PAY ALL ASSOCIATED FEES. COORDINATE WORK WITH GENERAL CONTRACTOR AND CITY INSPECTOR AS NECESSARY. INSTALL BACKFLOW PREVENTER IMMEDIATELY DOWNSTREAM OF METER PER ALL LOCAL CODES. INSTALL IN STRONG BOX SB-30SS STAINLESS STEEL LOCKING ENCLOSURE. FINAL BACKFLOW PREVENTER LOCATION TO BE APPROVED IN THE FIELD BY THE CITY OR AUTHORIZED REPRESENTATIVE. INSTALL PRESSURE REGULATOR WITH BACKFLOW ASSEMBLY AND SET TO 75 PSI. INSTALL MASTER VALVE DOWNSTREAM OF BACKFLOW ASSEMBLY AND WIRE TO CONTROLLER PER MANUFACTURER'S DIRECTIONS. THIS WILL REQUIRE ONE DEDICATED, COLOR-CODED 14 GA UF WIRE FROM MASTER VALVE TO CONTROLLER AND A CONNECTION TO THE COMMON WIRE. INSTALL FLOW SENSOR DOWNSTREAM OF MASTER VALVE AND WIRE TO CONTROLLER PER MANUFACTURER'S DIRECTIONS. THIS WILL REQUIRE TWO DEDICATED, COLOR-CODED 14 GA UF WIRES FROM FLOW SENSOR TO CONTROLLER. MAXIMUM DEMAND IS 16 GPM. STATIC PRESSURE AT METER RANGES FROM 108 TO 121 PSI (INFORMATION FROM STELLA GARCIA AT THE CITY OF RIVERSIDE WATER DEPARTMENT ON 9/18/08 AT 951-826-5285). CONTRACTOR SHALL VERIFY STATIC PRESSURE AT POC PRIOR TO START OF WORK AND NOTIFY THE LANDSCAPE ARCHITECT IF A DISCREPANCY IS FOUND. DO NOT PROCEED WITH ANY IRRIGATION WORK UNTIL ANY PRESSURE RELATED ISSUES HAVE BEEN RESOLVED TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT AND THE CITY.

CONTROLLER 'D'
INSTALL IRRIGATION CONTROLLER ASSEMBLY ADJACENT TO POINT OF CONNECTION AS SHOWN. ASSEMBLY WILL COME FROM CALSENSE PRE-ASSEMBLED IN STAINLESS STEEL ENCLOSURE. MOUNT ENCLOSURE PER MANUFACTURER'S DIRECTIONS AND CITY STANDARDS. FINAL CONTROLLER LOCATION TO BE APPROVED IN THE FIELD BY THE CITY OR AUTHORIZED REPRESENTATIVE. THE CITY IS TO PROVIDE 120V AC POWER TO THE FINAL CONTROLLER LOCATION. THE IRRIGATION CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CITY AND/OR GENERAL CONTRACTOR AS NECESSARY. THE IRRIGATION CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS PER LOCAL CODES. MOUNT, GROUND, AND WIRE ALL THE CONTROL EQUIPMENT PER THE MANUFACTURER'S DIRECTIONS, THESE PLANS, AND PER ALL LOCAL CODES.

'D' POINT OF CONNECTION INFORMATION
WATER TYPE - POTABLE
METER SIZE - 1"
BACKFLOW PREVENTER SIZE - 1"
PRESSURE REGULATOR - 1" (75 PSI)
FLOW SENSOR - 1"
MASTER VALVE - 1"
MAXIMUM DEMAND - 19 GPM
NUMBER OF VALVES - 12
CONTROLLER SIZE - 16 STATION
STATIC PRESSURE AT METER - 108 PSI MIN.

'D' PRESSURE LOSS CALCULATIONS
(HIGHEST FLOW - 16 GPM FARTHEST FROM POC)

EQUIPMENT	SIZE	LOSS
SERVICE LINE - 50' @ 16 GPM	1 1/4"	1.5
WATER METER - 16 GPM	1"	1.4
BACKFLOW PREVENTER - 16 GPM	1"	13.0
MASTER VALVE - 16 GPM	1"	2.6
FLOW SENSOR - 16 GPM	1"	1.0
MAINLINE - 500' SCH 40 PVC	1 1/2"	3.6
CONTROL VALVE - 16 GPM	1"	2.6
LATERAL LINES - SCH 40 PVC	VAR.	3.0
SUBTOTAL PRESSURE LOSSES		28.7
MISC. LOSSES THRU SYSTEM (10%)		2.9
ELEVATION GAIN (FT)	0	0.0
TOTAL PRESSURE LOSSES		31.6
PRESSURE REQUIRED AT HEAD		30.0
TOTAL PRESSURE REQUIRED		61.6
REGULATED PRESSURE AT POC		75.0
RESIDUAL PRESSURE		13.4

EQUIPMENT LEGEND

SYMBOL	MANUFACTURER / MODEL NUMBER	SIZE	DETAIL
[M]	WATER METER - SEE POINT OF CONNECTION NOTE ON PLANS	1"	
[A]	CALSENSE ET 2000e-8-LR-RRE-SSER CONTROLLER ASSEMBLY	8 STATION	
[B] [C] [E]	CALSENSE ET 2000e-24-LR-RRE-SSER CONTROLLER ASSEMBLY	24 STATION	
[D]	CALSENSE ET 2000e-16-LR-RRE-SSER CONTROLLER ASSEMBLY	16 STATION	
[RP]	FEBCO 825YA SERIES REDUCED PRESSURE BACKFLOW PREVENTER - IN LOCKING ENCLOSURE	1"	
[PR]	WILKINS 500 SERIES PRESSURE REGULATING VALVE - INSTALL WITH BACKFLOW DEVICE	1"	
[MV]	SUPERIOR 950 SERIES NORMALLY CLOSED BRASS MASTER CONTROL VALVE	1"	
[FS]	CALSENSE FM-1B FLOW SENSOR	1"	
[SW]	SPARE WIRES - INSTALL TWO TO EACH END OF EACH MAINLINE	12 GA	
[PB]	CONTROL WIRE PULL BOX	N/A	
[NB]	NIBCO T-580-70 BRONZE BALL VALVE - 3" AND SMALLER	LINE SIZE	
[TC]	TORO 100-SLVLC QUICK COUPLING VALVE WITH LOCKING VINYL COVER	1"	
[SE]	SUPERIOR 950 SERIES BRASS ELECTRIC CONTROL VALVE	1"	
[SCH 40 PVC IRRIGATION PRESSURE MAINLINE - 18" MINIMUM COVER]		1 1/2"	
[SCH 40 PVC NON-PRESSURE LATERAL LINE - 12" MINIMUM COVER]		PLAN SIZE	
[SCH 40 PVC PIPE SLEEVING - 18" MIN. COVER - EXTEND 12" BEYOND EDGE OF HARDSCAPE]		PLAN SIZE	
[SCH 40 PVC WIRE SLEEVING - 18" MIN. COVER - EXTEND 12" BEYOND EDGE OF HARDSCAPE]		PLAN SIZE	
[NOT SHOWN]	UF DIRECT BURIAL CONTROL WIRE WITH WATERPROOF CONNECTIONS	12 GA	

CONTROLLER SPECIFICATIONS SUBJECT TO CHANGE PENDING RADIO RECEPTION TESTING BY CALSENSE. CONTACT BOB MOXLEY AT CALSENSE FOR INFORMATION AND ORDERING CONTROLLERS (760-580-9428)

HEAD ADJUSTMENTS
IRRIGATION CONTRACTOR SHALL FINE TUNE AND ADJUST ALL IRRIGATION SYSTEM TO PROVIDE MAXIMUM HEAD-TO-HEAD COVERAGE WITH LITTLE OR NO OVERSPRAY OUTSIDE THE PLANTED AREAS. NO OVERSPRAY WILL BE ALLOWED IN THE ROADWAYS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO ADJUSTING THE PRESSURE REGULATOR AT THE POC AS NECESSARY. ADJUSTING THE FLOW CONTROL OF EACH AND EVERY CONTROL VALVE AS NECESSARY. ADJUSTING THE RADIUS OF EACH AND EVERY SPRAY HEAD AS NECESSARY, USING THE BEST NOZZLE AS DETERMINED NECESSARY (ARC AND RADIUS), AND USING AN ADJUSTABLE NOZZLE IF NECESSARY, ETC.

SLEEVING
MAINLINE AND VALVES SHOWN OUTSIDE OF PLANTED AREAS FOR CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT IN ADJACENT PLANTED AREAS EXCEPT WHERE SLEEVING IS SHOWN ON THE PLANS. ALL PIPES AND WIRES THAT MUST RUN UNDER HARDSCAPE TO BE SLEEVED IN SCH 40 PVC SLEEVES ACCORDING TO THE SLEEVING CHART.

WIRING
EACH SYSTEM (POC) WILL REQUIRE A COMMON WIRE (WHITE), CONTROL WIRES FOR EACH VALVE (UNIQUE COLOR), A CONTROL WIRE FOR THE MASTER VALVE (UNIQUE COLOR), TWO WIRES FOR THE FLOW SENSOR (EACH UNIQUELY COLORED), AND TWO SPARE WIRES TO THE END OF EACH MAINLINE RUN (UNIQUE COLOR).

SPRINKLER LEGEND

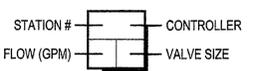
SYMBOL	MANUFACTURER / MODEL NUMBER	NOZZLE	RAD	PSI	FLOW - GPM						DETAIL
					Q	T	H	TT	TQ	F	
TURF POP-UP SPRAY HEADS											
[Symbol]	RAIN BIRD 1806-S SERIES	Q/T/H/F	5'	30	0.10	0.13	0.20			1.41	PER CITY STD. DETAILS
[Symbol]	RAIN BIRD 1806	6-VAN	6'	30	0.37	0.40	0.60	0.80	1.10		
[Symbol]	RAIN BIRD 1806-B SERIES	Q/T/H/F	8'	30	0.26	0.35	0.52			1.05	
[Symbol]	RAIN BIRD 1806	8-VAN	8'	30	0.72	0.79	1.19	1.59	1.56		
[Symbol]	RAIN BIRD 1806-10' SERIES	Q/T/H/F	10'	30	0.39	0.53	0.79			1.58	
[Symbol]	RAIN BIRD 1806-12' SERIES	Q/T/H/T/T/Q/F	12'	30	0.65	0.87	1.30	1.74	1.95	2.60	
[Symbol]	RAIN BIRD 1806-15' SERIES	Q/T/H/T/T/Q/F	15'	30	0.92	1.23	1.85	2.48	2.78	3.70	
SHRUB HI-POP SPRAY HEADS											
[Symbol]	RAIN BIRD 1812-5' SERIES	Q/T/H/F	5'	30	0.10	0.13	0.20			1.41	PER CITY STD. DETAILS
[Symbol]	RAIN BIRD 1812-8' SERIES	Q/T/H/F	8'	30	0.26	0.35	0.52			1.05	
[Symbol]	RAIN BIRD 1812-10' SERIES	Q/T/H/F	10'	30	0.39	0.53	0.79			1.58	
[Symbol]	RAIN BIRD 1812-12' SERIES	Q/T/H/T/T/Q/F	12'	30	0.65	0.87	1.30	1.74	1.95	2.60	
[Symbol]	RAIN BIRD 1812-5-B SERIES	Q/H/F/CST	5'	30	0.50/1.00/1.50/0.50						
VINE BUBBLERS											
[Symbol]	RAIN BIRD 1401 SERIES	N/A	N/A	30	0.25						CITY STD.

PIPE SIZING

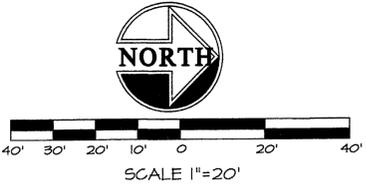
[Symbol]	3/4" PIPE
[Symbol]	1" PIPE
[Symbol]	1 1/4" PIPE
[Symbol]	1 1/2" PIPE
[Symbol]	2" PIPE
[Symbol]	2 1/2" PIPE
[Symbol]	3" PIPE
[Symbol]	4" PIPE
[Symbol]	6" PIPE
[Symbol]	8" PIPE

SCH 40 PVC SLEEVING CHART

SLEEVE	WIRES	PIPE
1 1/4" SLEEVE	1-8 WIRES	1/2" PIPE
1 1/2" SLEEVE	9-16 WIRES	3/4" PIPE
2" SLEEVE	17-26 WIRES	1" PIPE
2 1/2" SLEEVE	27-38 WIRES	1 1/4" PIPE
3" SLEEVE	39-54 WIRES	1 1/2" PIPE
4" SLEEVE	55-100 WIRES	2" PIPE
6" SLEEVE	100+ WIRES	3" PIPE
8" SLEEVE	N/A	4" PIPE
12" SLEEVE	N/A	6" PIPE



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DLA# 11007 - 6/8/2009



CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT
APPROVED BY: [Signature] BY: [Signature] DATE: 6/30/09
CONST. CONTRACT ADMIN. STREET SERVICES SURVEYOR TRAFFIC DIVISION PARKS DEPARTMENT
DESIGNED BY: LUD DRAWN BY: SS CHECKED BY: LUD

CITY OF RIVERSIDE, CALIFORNIA
LANDSCAPE PLANS
IRRIGATION PLAN
APPROVED BY: [Signature] APPROVED PER SIGNATURE ON SHEET - 1
CITY ENGINEER
DATE: _____

CITY OF RIVERSIDE
COLUMBIA AVENUE AND IOWA AVENUE
STREET IMPROVEMENT PROJECT
LANDSCAPE PLANS
IRRIGATION PLAN

DESIGN W.O. NO. 0702989
CONSTRUCTION W.O. NO. 0915428
R-4132L
IR-6
SHEET 50 OF 76

MATCHLINE STA. 31+27.85 - SEE SHEET IR-6

FREIGHT YARD

IOWA AVENUE

PALMYRITA AVE

IOWA CORP CENTER

LIMIT OF WORK - END CONSTRUCTION WORK

SPECIAL NOTE FOR IRRIGATION OF NEW PLANT MATERIALS IN AREAS BETWEEN RIGHT-OF-WAY AND BACK OF SIDEWALK. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR, REPLACEMENT, MODIFICATION, ADJUSTMENT, AND ADDITION TO IRRIGATION SYSTEMS ON ADJACENT PRIVATE PROPERTIES TO ENSURE ADEQUATE IRRIGATION FOR NEW PLANT MATERIALS AS SHOWN ON THE PLANTING PLAN. ANY DAMAGE CAUSED TO PRIVATE IRRIGATION SYSTEMS WITHIN THE RIGHT-OF-WAY SHALL BE REPAIRED OR REPLACED.

PROPOSED MEDIANS INDICATED TO BE CONSTRUCTED AS PART OF BASE BID, BUT MAY BE REPLACED WITH NEW AC PAVEMENT AS PART OF ALTERNATE BID.

EXTERIOR HARDSCAPE BAND SHALL BE 1' WIDE. PERIMETER LANDSCAPING AREA TO BE REDUCED DUE TO WIDENING OF EXTERIOR HARDSCAPE BAND TO 2'. ADJUST NOZZLE RADIUS TO AVOID OVERTHROW SPRAY ONTO PAVEMENT. NOZZLE SPACING TO BE ADJUSTED AS NECESSARY TO ACCOMMODATE REDUCTION OF LANDSCAPE AREA.

'E' PRESSURE LOSS CALCULATIONS
(HIGHEST FLOW - 19 GPM FARTHEST FROM POC)

EQUIPMENT	SIZE	LOSS
SERVICE LINE - 50' @ 19 GPM	1 1/4"	2.2
WATER METER - 19 GPM	1"	2.0
BACKFLOW PREVENTER - 19 GPM	1"	13.0
MASTER VALVE - 19 GPM	1"	2.6
FLOW SENSOR - 19 GPM	1"	1.0
MAINLINE - 500' SCH 40 PVC - 19 GPM	1 1/2"	9.7
CONTROL VALVE - 19 GPM	1"	2.6
LATERAL LINES - SCH 40 PVC	VAR.	3.0
SUBTOTAL PRESSURE LOSSES		36.1
MISC. LOSSES THRU SYSTEM (10%)		3.6
ELEVATION GAIN (FT)	0	0.0
TOTAL PRESSURE LOSSES		39.7
PRESSURE REQUIRED AT HEAD		30.0
TOTAL PRESSURE REQUIRED		69.7
REGULATED PRESSURE AT POC		80.0
RESIDUAL PRESSURE		10.3

POINT OF CONNECTION 'E'
MAKE IRRIGATION POINT OF CONNECTION INTO NEW 1" WATER METER WITH 1 1/4" SERVICE LINE. VERIFY EXACT LOCATION IN THE FIELD AND ADJUST AS NECESSARY. IRRIGATION CONTRACTOR SHALL COORDINATE NEW METER AND SERVICE WITH THE CITY OF RIVERSIDE WATER DEPARTMENT AND PAY ALL ASSOCIATED FEES. COORDINATE WORK WITH GENERAL CONTRACTOR AND CITY INSPECTOR AS NECESSARY. INSTALL BACKFLOW PREVENTER IMMEDIATELY DOWNSTREAM OF METER PER ALL LOCAL CODES. INSTALL IN STRONG BOX SB-30SS STAINLESS STEEL LOCKING ENCLOSURE. FINAL BACKFLOW PREVENTER LOCATION TO BE APPROVED IN THE FIELD BY THE CITY OR AUTHORIZED REPRESENTATIVE. INSTALL PRESSURE REGULATOR WITH BACKFLOW ASSEMBLY AND SET TO 80 PSI. INSTALL MASTER VALVE DOWNSTREAM OF BACKFLOW ASSEMBLY AND WIRE TO CONTROLLER PER MANUFACTURER'S DIRECTIONS. THIS WILL REQUIRE ONE DEDICATED, COLOR-CODED 1/4 GA UF WIRE FROM MASTER VALVE TO CONTROLLER AND A CONNECTION TO THE COMMON WIRE. INSTALL FLOW SENSOR DOWNSTREAM OF MASTER VALVE AND WIRE TO CONTROLLER PER MANUFACTURER'S DIRECTIONS. THIS WILL REQUIRE TWO DEDICATED, COLOR-CODED 1/4 GA UF WIRES FROM FLOW SENSOR TO CONTROLLER. MAXIMUM DEMAND IS 19 GPM. STATIC PRESSURE AT METER RANGES FROM 108 TO 121 PSI (INFORMATION FROM STELLA GARCIA AT THE CITY OF RIVERSIDE WATER DEPARTMENT ON 9/19/08 AT 951-826-5285). CONTRACTOR SHALL VERIFY STATIC PRESSURE AT POC PRIOR TO START OF WORK AND NOTIFY THE LANDSCAPE ARCHITECT IF A DISCREPANCY IS FOUND. DO NOT PROCEED WITH ANY IRRIGATION WORK UNTIL ANY PRESSURE RELATED ISSUES HAVE BEEN RESOLVED TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT AND THE CITY.

CONTROLLER 'E'
INSTALL IRRIGATION CONTROLLER ASSEMBLY ADJACENT TO POINT OF CONNECTION AS SHOWN. ASSEMBLY WILL COME FROM CALSENSE PRE ASSEMBLED IN STAINLESS STEEL ENCLOSURE. MOUNT ENCLOSURE PER MANUFACTURER'S DIRECTIONS AND CITY STANDARDS. FINAL CONTROLLER LOCATION TO BE APPROVED IN THE FIELD BY THE CITY OR AUTHORIZED REPRESENTATIVE. THE CITY IS TO PROVIDE 120V AC POWER TO THE FINAL CONTROLLER LOCATION. THE IRRIGATION CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CITY AND / OR GENERAL CONTRACTOR AS NECESSARY. THE IRRIGATION CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS PER LOCAL CODES. MOUNT, GROUND, AND WIRE ALL THE CONTROL EQUIPMENT PER THE MANUFACTURER'S DIRECTIONS, THESE PLANS, AND PER ALL LOCAL CODES.

'E' POINT OF CONNECTION INFORMATION
WATER TYPE - POTABLE
METER SIZE - 1"
BACKFLOW PREVENTER SIZE - 1"
PRESSURE REGULATOR - 1" (75 PSI)
FLOW SENSOR - 1"
MASTER VALVE - 1"
MAXIMUM DEMAND - 19 GPM
NUMBER OF VALVES - 17
CONTROLLER SIZE - 24 STATION
STATIC PRESSURE AT METER - 108 PSI MIN.

EQUIPMENT LEGEND

SYMBOL	MANUFACTURER / MODEL NUMBER	SIZE	DETAIL
M	WATER METER - SEE POINT OF CONNECTION NOTE ON PLANS	1"	
A	CALSENSE ET 2000e-8-LR-RRE-SSER CONTROLLER ASSEMBLY	8 STATION	
B, C, E	CALSENSE ET 2000e-24-LR-RRE-SSER CONTROLLER ASSEMBLY	24 STATION	
D	CALSENSE ET 2000e-16-LR-RRE-SSER CONTROLLER ASSEMBLY	16 STATION	
RP	FEBCO 825YA SERIES REDUCED PRESSURE BACKFLOW PREVENTER - IN LOCKING ENCLOSURE	1"	
PR	WILKINS 500 SERIES PRESSURE REGULATING VALVE - INSTALL WITH BACKFLOW DEVICE	1"	
MV	SUPERIOR 950 SERIES NORMALLY CLOSED BRASS MASTER CONTROL VALVE	1"	
FS	CALSENSE FM-1B FLOW SENSOR	1"	
SW	SPARE WIRES - INSTALL TWO TO EACH END OF EACH MAINLINE	12 GA	PER CITY STD. DETAILS
PB	CONTROL WIRE PULL BOX	N/A	
⊗	NIBCO T-580-70 BRONZE BALL VALVE - 3" AND SMALLER	LINE SIZE	
⊙	TORO 100-SLVLC QUICK COUPLING VALVE WITH LOCKING VINYL COVER	1"	
⊙	SUPERIOR 950 SERIES BRASS ELECTRIC CONTROL VALVE	1"	
---	SCH 40 PVC IRRIGATION PRESSURE MAINLINE - 18" MINIMUM COVER	1 1/2"	
---	SCH 40 PVC NON-PRESSURE LATERAL LINE - 12" MINIMUM COVER	PLAN SIZE	
---	SCH 40 PVC PIPE SLEEVING - 18" MIN. COVER - EXTEND 12" BEYOND EDGE OF HARDSCAPE	PLAN SIZE	
---	SCH 40 PVC WIRE SLEEVING - 18" MIN. COVER - EXTEND 12" BEYOND EDGE OF HARDSCAPE	PLAN SIZE	
---	NOT SHOWN	UF DIRECT BURIAL CONTROL WIRE WITH WATERPROOF CONNECTIONS	12 GA

CONTROLLER SPECIFICATIONS SUBJECT TO CHANGE PENDING RADIO RECEPTION TESTING BY CALSENSE. CONTACT BOB MOXLEY AT CALSENSE FOR INFORMATION AND ORDERING CONTROLLERS (760-580-9428)

HEAD ADJUSTMENTS
IRRIGATION CONTRACTOR SHALL FINE TUNE AND ADJUST ALL IRRIGATION SYSTEM TO PROVIDE MAXIMUM HEAD-TO-HEAD COVERAGE WITH LITTLE OR NO OVERSPRAY OUTSIDE THE PLANTED AREAS. NO OVERSPRAY WILL BE ALLOWED IN THE ROADWAYS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO ADJUSTING THE PRESSURE REGULATOR AT THE POC AS NECESSARY, ADJUSTING THE FLOW CONTROL OF EACH AND EVERY CONTROL VALVE AS NECESSARY, ADJUSTING THE RADIUS OF EACH AND EVERY SPRAY HEAD AS NECESSARY, USING THE BEST NOZZLE AS DETERMINED NECESSARY (ARC AND RADIUS), AND USING AN ADJUSTABLE NOZZLE IF NECESSARY, ETC.

SLEEVING
MAINLINE AND VALVES SHOWN OUTSIDE OF PLANTED AREAS FOR CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT IN ADJACENT PLANTED AREAS EXCEPT WHERE SLEEVING IS SHOWN ON THE PLANS. ALL PIPES AND WIRES THAT MUST RUN UNDER HARDSCAPE TO BE SLEEVED IN SCH 40 PVC SLEEVES ACCORDING TO THE SLEEVING CHART.

WIRING
EACH SYSTEM (POC) WILL REQUIRE A COMMON WIRE (WHITE), CONTROL WIRES FOR EACH VALVE (UNIQUE COLOR), A CONTROL WIRE FOR THE MASTER VALVE (UNIQUE COLOR), TWO WIRES FOR THE FLOW SENSOR (EACH UNIQUELY COLORED), AND TWO SPARE WIRES TO THE END OF EACH MAINLINE RUN (UNIQUE COLOR).

SPRINKLER LEGEND

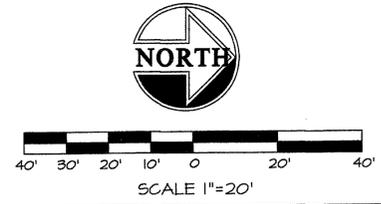
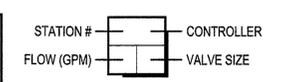
SYMBOL	MANUFACTURER / MODEL NUMBER	NOZZLE	RAD	PSI	FLOW - GPM						DETAIL
					Q	T	H	TT	TQ	F	
TURF POP-UP SPRAY HEADS											
⊙	RAIN BIRD 1806-5' SERIES	Q/T/H/F	5'	30	0.10	0.13	0.20			1.41	
⊙	RAIN BIRD 1806	6-VAN	6'	30	0.37	0.40	0.60	0.80	1.10		
⊙	RAIN BIRD 1806-8' SERIES	Q/T/H/F	8'	30	0.26	0.35	0.52			1.05	PER CITY STD. DETAILS
⊙	RAIN BIRD 1806	8-VAN	8'	30	0.72	0.79	1.19	1.59	1.55		
⊙	RAIN BIRD 1806-10' SERIES	Q/T/H/F	10'	30	0.39	0.53	0.79			1.58	
⊙	RAIN BIRD 1806-12' SERIES	Q/T/H/TT/TQ/F	12'	30	0.65	0.87	1.30	1.74	1.95	2.60	
⊙	RAIN BIRD 1806-15' SERIES	Q/T/H/TT/TQ/F	15'	30	0.92	1.23	1.85	2.48	2.78	3.70	
SHRUB HI-POP SPRAY HEADS											
⊙	RAIN BIRD 1812-5' SERIES	Q/T/H/F	5'	30	0.10	0.13	0.20			1.41	
⊙	RAIN BIRD 1812-8' SERIES	Q/T/H/F	8'	30	0.26	0.35	0.52			1.05	PER CITY STD. DETAILS
⊙	RAIN BIRD 1812-10' SERIES	Q/T/H/F	10'	30	0.39	0.53	0.79			1.58	
⊙	RAIN BIRD 1812-12' SERIES	Q/T/H/TT/TQ/F	12'	30	0.65	0.87	1.30	1.74	1.95	2.60	
⊙	RAIN BIRD 1812-5-B SERIES	Q/H/F/CST	5'	30	0.50/1.00/1.50/0.50						
VINE BUBBLERS											
⊙	RAIN BIRD 1401 SERIES	N/A	N/A	30	0.25						CITY STD.

PIPE SIZING

---	3/4" PIPE
---	1" PIPE
---	1 1/4" PIPE
---	1 1/2" PIPE
---	2" PIPE
---	2 1/2" PIPE
---	3" PIPE
---	4" PIPE
---	6" PIPE
---	8" PIPE

SCH 40 PVC SLEEVING CHART

1 1/4" SLEEVE	1-8 WIRES	1/2" PIPE
1 1/2" SLEEVE	9-16 WIRES	3/4" PIPE
2" SLEEVE	17-26 WIRES	1" PIPE
2 1/2" SLEEVE	27-38 WIRES	1 1/4" PIPE
3" SLEEVE	39-54 WIRES	1 1/2" PIPE
4" SLEEVE	55-100 WIRES	2" PIPE
6" SLEEVE	100+ WIRES	3" PIPE
8" SLEEVE	N/A	4" PIPE
12" SLEEVE	N/A	6" PIPE



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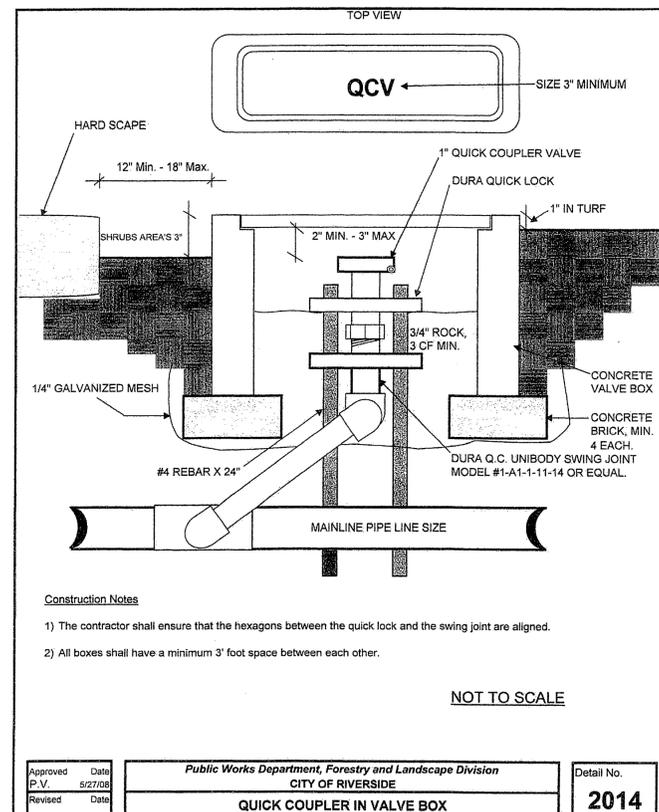
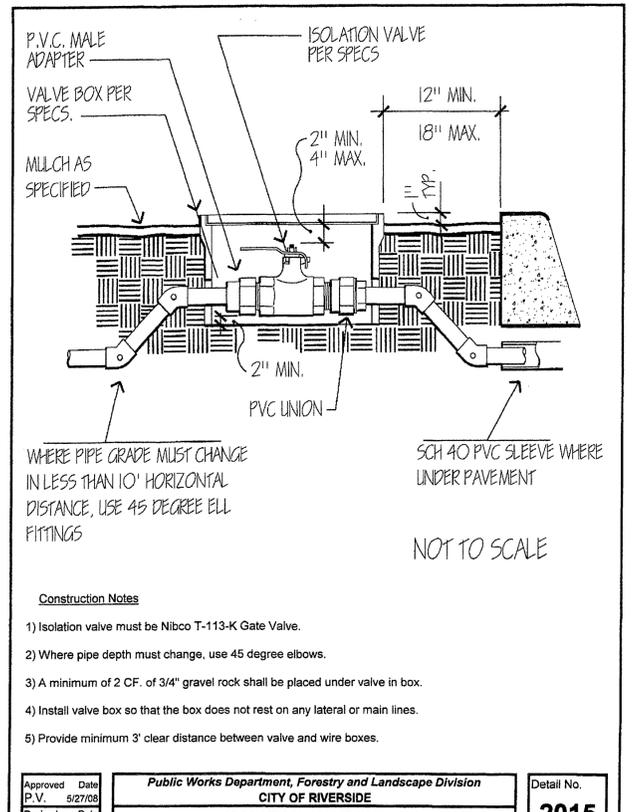
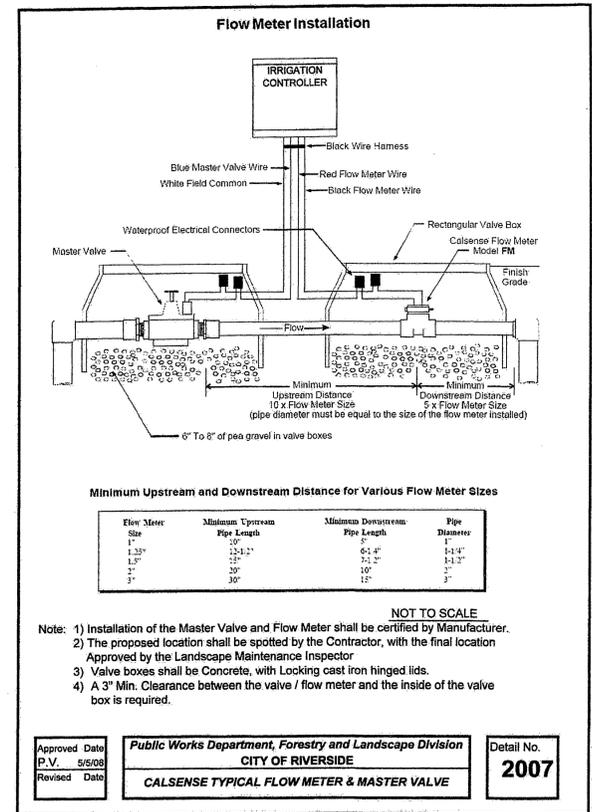
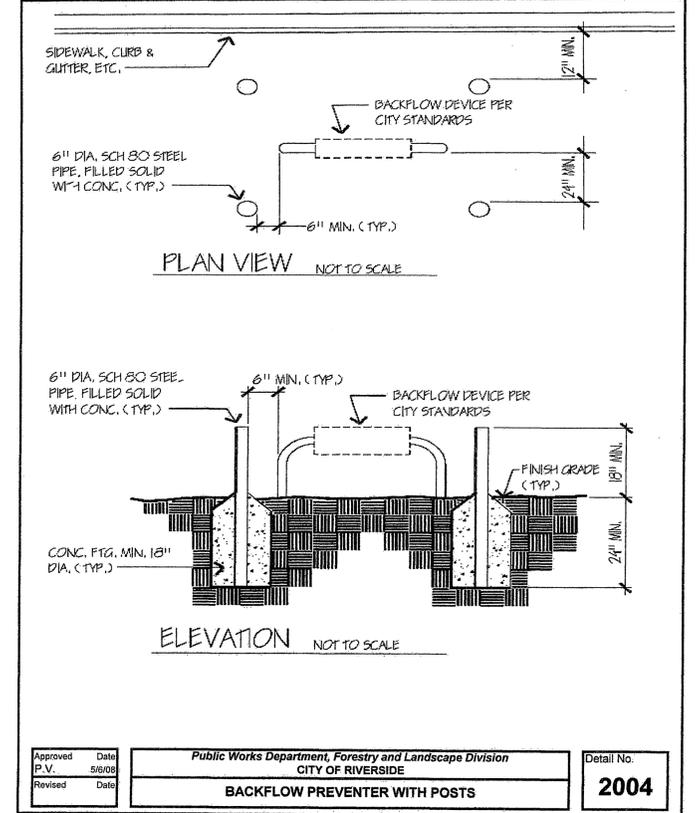
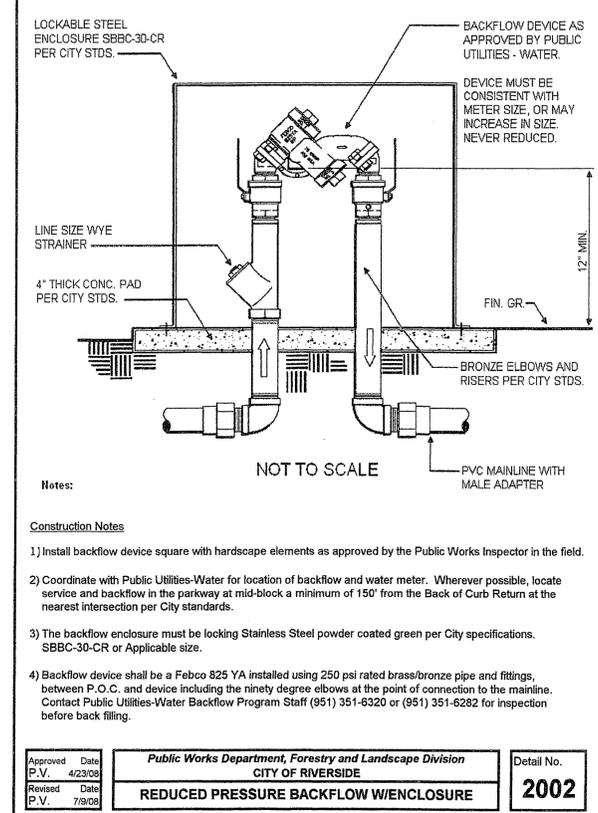
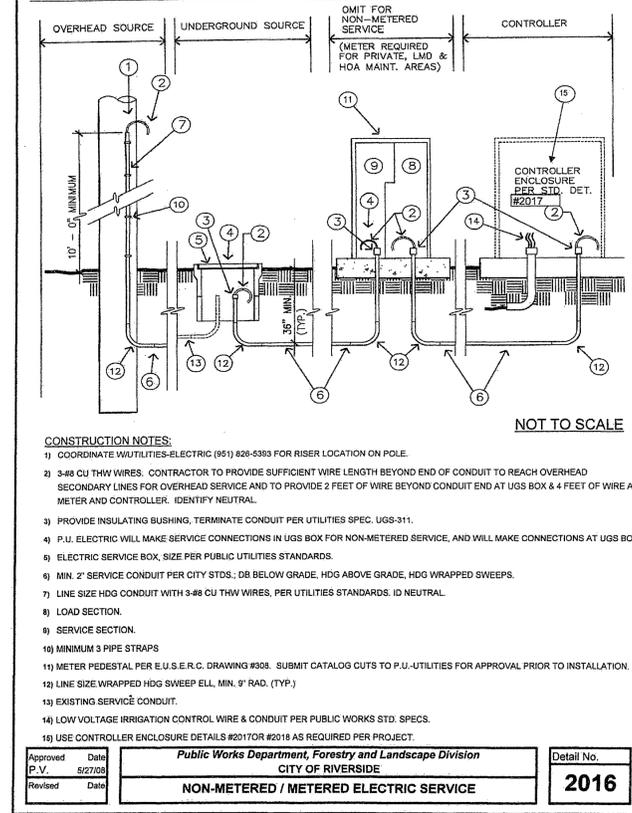
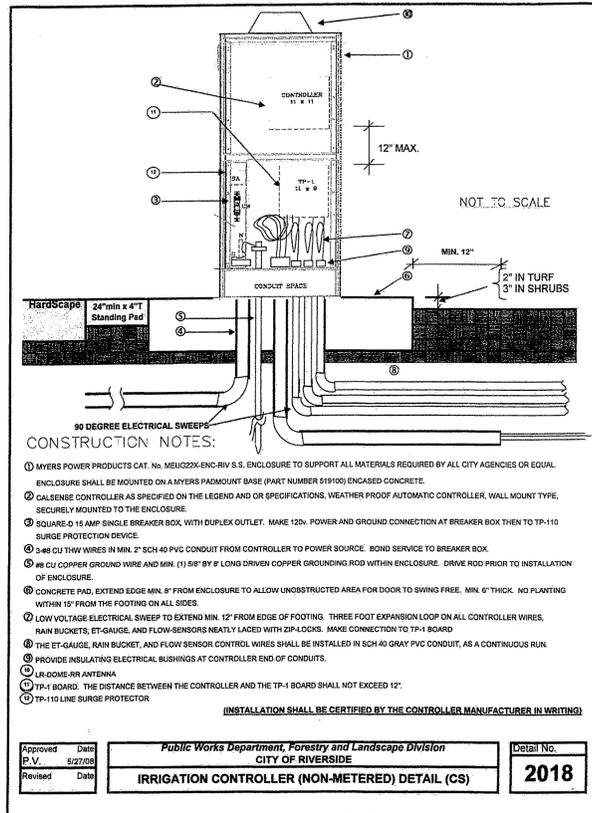
MARK	REVISIONS	APPR.	DATE
1	REDUCED MEDIAN LANDSCAPE AREA	SS	7/1/09
2	PROJECT SCOPE REDUCED	SS	7/1/09

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT
APPROVED BY: _____ BY: _____ DATE: _____
CONSTR. CONTRACT ADMIN. PRINCIPAL ENGINEER
STREET SERVICES SUPERVISOR
TRAFFIC DIVISION
PARKS DEPARTMENT

CITY OF RIVERSIDE
COLUMBIA AVENUE AND IOWA AVENUE
STREET IMPROVEMENT PROJECT
LANDSCAPE PLANS
IRRIGATION PLAN

DESIGN W.O. NO. 0702989
CONSTRUCTION W.O. NO. 0915428
R-4132L
IR-7
SHEET 51 OF 76

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NOTE:
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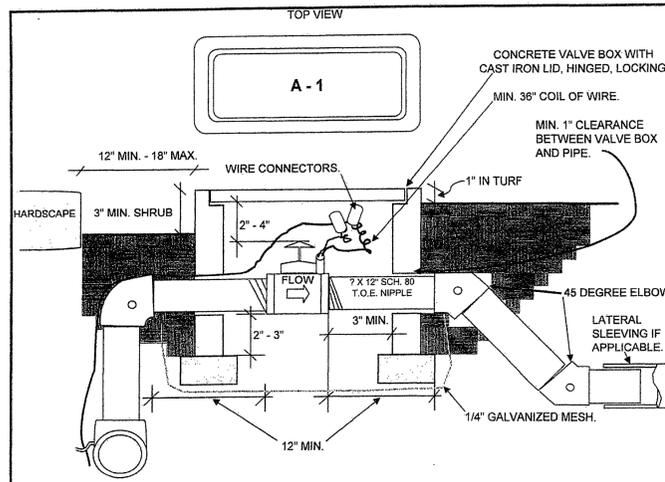
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E-MAIL: IDAVIDSON@DLAINC.COM
IDL# 11007 - 6/6/2009



CITY OF RIVERSIDE, CALIFORNIA PUBLIC WORKS DEPARTMENT			
APPROVED BY	BY	DATE	APPROVED BY
CONST. CONTRACT ADMIN.			APPROVED PER SIGNATURE
PRINCIPAL ENGINEER			ON SHEET - 1
STREET SERVICES			CITY ENGINEER
SURVEYOR			
TRAFFIC DIVISION			
PARKS DEPARTMENT			
DESIGNED BY	LJD	DRAWN BY	SS
CHECKED BY	LJD		

CITY OF RIVERSIDE
COLUMBIA AVENUE AND IOWA AVENUE
STREET IMPROVEMENT PROJECT
LANDSCAPE PLANS
IRRIGATION DETAILS

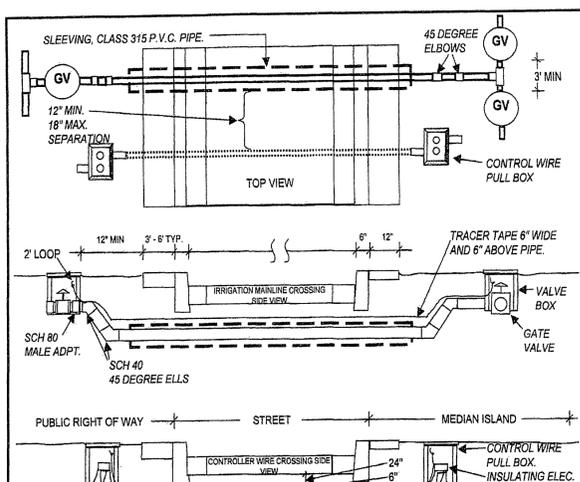
DESIGN W.O. NO. 0702989
CONSTRUCTION W.O. NO. 0915428
R-4132L
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SHEET 52 OF 76



- Construction Notes**
- 1) EACH VALVE SHALL HAVE ITS OWN TEE OR ELL CONNECTION TO THE MAINLINE. NO MANIFOLD CONNECTIONS.
 - 2) PROVIDE MINIMUM 3' CLEAR DISTANCE BETWEEN VALVES AND WIRE BOXES.
 - 3) INSTALL VALVE BOX SO THAT THE BOX DOES NOT REST ON ANY IRRIGATION LINES.
 - 4) WHERE PIPE DEPTH MUST CHANGE IN LESS THAN 10' HORIZONTAL DISTANCE, USE 45 DEGREE ELBOWS.
 - 5) 3/4" GRAVEL ROCK SHALL BE PLACED IN EACH BOX. MINIMUM 2 CF.

NOT TO SCALE

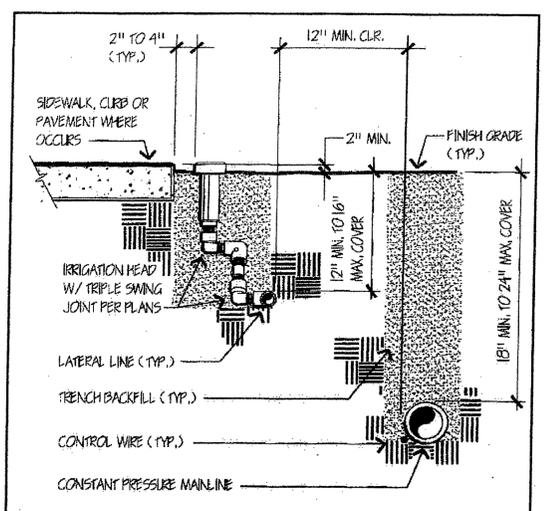
Approved P.V. 5/7/08	Date 5/7/08	Public Works Department, Forestry and Landscape Division CITY OF RIVERSIDE	Detail No. 2010
Revised	Date	REMOTE CONTROL VALVE "IN-LINE"	



- Construction Notes**
- 1) The Contractor shall mark the proposed crossing with blue paint, and receive written approval from the inspector prior to trenching and/or boring. They shall also have Dig Alert markings prior to inspection.
 - 2) The irrigation tracer tape shall be 6" wide, Blue in color, and read "CAUTION Irrigation Line Buried Below".
 - 3) The irrigation wire tracer tape shall be 6" wide, Red in color, and read "CAUTION Electrical Line Buried Below".

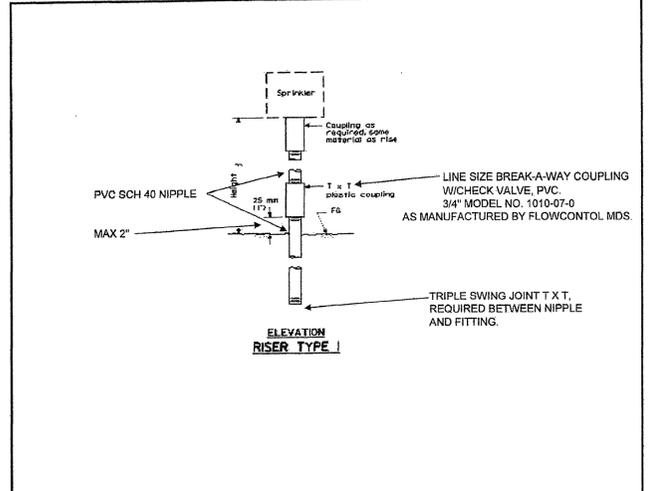
NOT TO SCALE

Approved P.V. 5/13/08	Date 5/13/08	Public Works Department, Forestry and Landscape Division CITY OF RIVERSIDE	Detail No. 2003
Revised	Date	TYPICAL STREET CROSSING	



- Construction Notes**
- 1) Controller wire shall be taped every 100'.
 - 2) Main Line pipe and Lateral Line pipe shall not be placed within the same trench.
 - 3) Rotor type sprinklers shall have a minimum 4" clearance between the hardscape and edge of rotor.

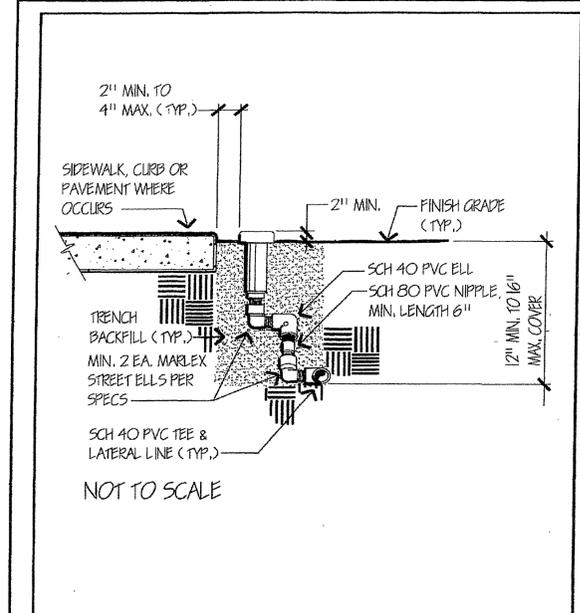
Approved P.V. 5/13/08	Date 5/13/08	Public Works Department, Forestry and Landscape Division CITY OF RIVERSIDE	Detail No. 2001
Revised	Date	TRENCH AND LINE PLACEMENT	



- Construction Notes**
- 1) The risers shall be Sch. 40 PVC threaded at both ends.

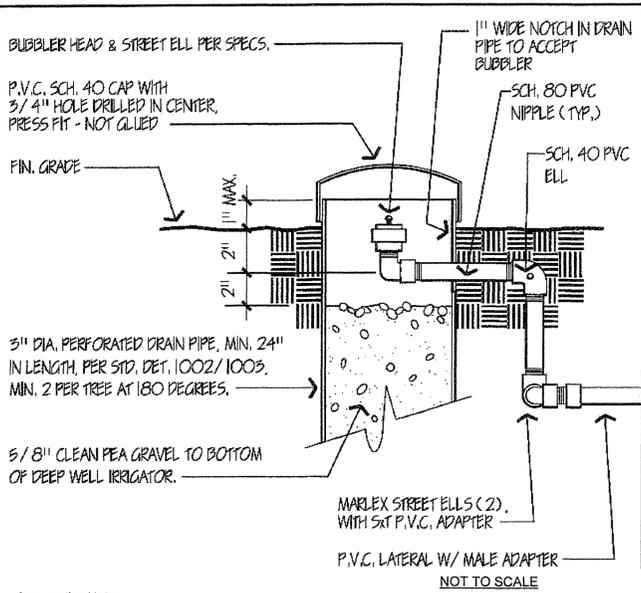
NOT TO SCALE

Approved P.V. 5/23/08	Date 5/23/08	Public Works Department, Forestry and Landscape Division CITY OF RIVERSIDE	Detail No. 2012
Revised	Date	SHRUB RISER EXTENSION (TYPE 1)	



- Construction Notes**
- 1) Each tree shall have a minimum of two deep well irrigators.
 - 2) The deep well irrigators shall be irrigated separately from shrub and turf area's.
 - 3) Use pre-set bubblers only, adjustable flood bubblers will not be accepted.
 - 4) The use of Rainbird RWS-BCG02 Root Watering System in place of drain pipe and rock is acceptable.

Approved P.V. 5/23/08	Date 5/23/08	Public Works Department, Forestry and Landscape Division CITY OF RIVERSIDE	Detail No. 2013
Revised	Date	TYPICAL IRRIGATION SPRAY HEAD DETAIL	



- Construction Notes**
- 1) Each tree shall have a minimum of two deep well irrigators.
 - 2) The deep well irrigators shall be irrigated separately from shrub and turf area's.
 - 3) Use pre-set bubblers only, adjustable flood bubblers will not be accepted.
 - 4) The use of Rainbird RWS-BCG02 Root Watering System in place of drain pipe and rock is acceptable.

Approved P.V. 5/6/08	Date 5/6/08	Public Works Department, Forestry and Landscape Division CITY OF RIVERSIDE	Detail No. 2011
Revised	Date	DEEP WELL IRRIGATOR	

- GENERAL IRRIGATION NOTES:**
1. GENERAL - ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND THESE PLANS. THE CONTRACTOR SHALL APPLY FOR ALL PERMITS AND PAY SAME.
 - 1.A. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS AT THE SITE PRIOR TO COMMENCEMENT OF ANY WORK UNDER THIS CONTRACT.
 - 1.B. THE CONTRACTOR SHALL CARRY ALL WORKERS COMPENSATION, PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE, AS REQUIRED BY THE CITY AND/OR OWNER.
 2. SCOPE OF WORK - UNLESS OTHERWISE SPECIFIED, THE CONSTRUCTION OF IRRIGATION SYSTEMS SHALL INCLUDE THE FURNISHING, INSTALLING AND TESTING OF ALL MAINLINE, POINT OF CONNECTION, LATERAL LINES, RISERS AND FITTINGS; AND THE FURNISHING AND INSTALLING OF SPRINKLER HEADS, CONTROLLERS, ELECTRIC CONTROL VALVES, EXCAVATION AND BACKFILL AND ALL OTHER WORK IN ACCORDANCE WITH THESE PLANS, DETAILS, AND NOTES. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT PROPERTY, TRANSPORTATION, AND PERFORM ALL OPERATIONS REQUIRED FOR A COMPLETE AND OPERABLE IRRIGATION SYSTEM AS INDICATED ON, OR REASONABLY IMPLIED BY THE DRAWINGS, DETAILS, AND NOTES. INCLUDED AS A PART OF THE IRRIGATION WORK, BUT NOT LIMITED BY IT ARE THE FOLLOWING:
 - 2.A. INSTALL COMPLETE OPERABLE INDEPENDENT IRRIGATION SYSTEMS PER THE PLANS, DETAILS, LEGENDS, AND NOTES.
 - 2.B. ALL IRRIGATION WORK SHALL BE GUARANTEED BY THE CONTRACTOR AS TO MATERIAL AND WORKMANSHIP, INCLUDING SETTLEMENT OF BACKFILLED TRENCHES BELOW GRADE FOR A PERIOD OF ONE YEAR FOLLOWING THE DATE OF FINAL ACCEPTANCE OF THE WORK.
 3. THE LANDSCAPE ARCHITECT SHALL DECIDE ALL QUESTIONS RELATING TO THE INTERPRETATION OF THE DRAWINGS AND THE ACCEPTABLE FULFILLMENT OF THE CONTRACT.
 4. PIPING SHOWN ON THE PLANS IS ESSENTIALLY DIAGRAMMATIC. CONTRACTOR SHALL ROUTE PIPING TO AVOID CONFLICT WITH STATIONARY ELEMENTS AND IN SUCH A MANNER AS TO CONFORM WITH THE VARIOUS DETAILS AND DESIGN INTENT OF THESE PLANS.
 5. THE CONTRACTOR SHALL AT ALL TIMES PROTECT HIS WORK FROM DAMAGE AND THEFT AND REPLACE ALL DAMAGED OR STOLEN PARTS AT HIS EXPENSE UNTIL THE WORK IS ACCEPTED IN WRITING BY THE OWNER/CITY.
 6. EXTREME CARE SHALL BE EXERCISED IN EXCAVATING AND WORKING NEAR EXISTING UTILITIES. CONTRACTOR SHALL VERIFY THE LOCATION AND CONDITION OF ALL UTILITIES AND BE RESPONSIBLE FOR ANY DAMAGE. CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT A MINIMUM OF TWO WORKING DAYS PRIOR TO DIGGING.
 7. THE CONTRACTOR SHALL KEEP THE PREMISES CLEAN AND FREE OF EXCESS EQUIPMENT, MATERIALS, AND RUBBISH INCIDENTAL TO HIS WORK.
 8. THE IRRIGATION DESIGN IS BASED ON THE METER SIZE AND WATER PRESSURE INDICATED ON THE WATER SOURCE / POINT OF CONNECTION NOTE ON THE PLANS. CONTRACTOR SHALL VERIFY THE PRESSURE PRIOR TO CONSTRUCTION. SHOULD A DISCREPANCY EXIST, NOTIFY THE CITY OF RIVERSIDE PRIOR TO BEGINNING CONSTRUCTION.
 9. CONTRACTOR SHALL MAKE POINT(S) OF CONNECTION (POC) AS NOTED ON THE PLANS. ALL FEES AND LOCAL REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
 10. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTING 120 VOLT SERVICE TO THE CONTROLLER. ELECTRICAL POWER WILL BE PROVIDED BY THE CITY AND/OR OWNER AT THE CONTROLLER LOCATION SHOWN ON THE PLAN.
 11. CONTRACTOR SHALL PROVIDE ALL EQUIPMENT REQUIRED TO PERFORM A MAINLINE PRESSURE TEST. THE HYDROSTATIC TEST SHALL HOLD A MINIMUM OF 150 PSI FOR 3 HOURS OR MORE. CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE A MINIMUM OF 48 HOURS IN ADVANCE OF THE TEST FOR CERTIFICATION.
 12. ALL WIRES SHALL BE SOLID COPPER, PLASTIC INSULATED, U.F. DIRECT BURIAL WIRE. ALL COMMON WIRE SHALL BE AWG #12 WHITE; ALL CONTROL WIRES SHALL BE AWG #14 RED OR BLACK. CONTROLLERS SHALL HAVE SEPARATE COLOR CODED COMMON WIRES AND CONTROL WIRES WHEN TWO OR MORE CONTROLLERS ARE ON THE PROJECT.
 13. ALL CONTROL WIRES AND IRRIGATION PIPING THAT RUNS UNDER HARDSCAPE / PAVING SHALL BE ENCASED IN SCH 40 PVC SLEEVES. SLEEVES SHALL BE SIZED ACCORDING TO THE SLEEVING CHART ON THE PLANS.
 14. THE FINAL LOCATION FOR CONTROL VALVES SHALL BE APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT OR THE OWNER'S AUTHORIZED REPRESENTATIVE. ALL VALVES SHALL BE LOCATED IN SHRUB AREAS WHEREVER POSSIBLE.
 15. THE CONTRACTOR SHALL HEAT BRAND VALVE NUMBERS ON INSIDE AND OUTSIDE OF ALL VALVE BOX LIDS.
 16. ALL BRASS OR GALVANIZED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE OR APPROPRIATE PIPE JOINT COMPOUND. ALL PVC TO PVC THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE. NO PIPE DOPE IS ALLOWED AT VALVE OR SPRINKLER HEAD CONNECTIONS.
 17. ALL PVC SOLVENT-WELD CONNECTIONS SHALL BE MADE WITH SOLVENT-WELD MATERIALS AS RECOMMENDED BY THE PIPE MANUFACTURER. SOLVENT-WELD PRIMER SHALL BE APPLIED AT ALL CONNECTIONS.
 18. LOW HEAD DRAINAGE WILL NOT BE ALLOWED. CONTRACTOR TO DETERMINE IN THE FIELD WHICH HEADS DRAIN AFTER THE VALVE IS SHUT OFF. CONTRACTOR SHALL PROVIDE AND INSTALL ADDITIONAL IN-LINE CHECK VALVES AS NEEDED AT NO ADDITIONAL COST TO THE OWNER.
 19. ALL PRESSURE SUPPLY LINES AND CONTROL WIRES TO HAVE 18"-24" MINIMUM COVER PER THE DETAIL. LATERAL LINES TO HAVE 12" MIN. COVER. SLEEVING IS TO HAVE 24" MIN. COVER.
 20. THE RADIUS OF EACH HEAD IS TO BE ADJUSTED SO THAT HEAD-TO-HEAD COVERAGE IS MAINTAINED, BUT OVERSPRAY ON BUILDINGS, WALKS, WALLS, AND OTHER HARD SURFACES IS MINIMIZED.
 21. CONTRACTOR SHALL INSTALL 2 EXTRA WIRES FROM CONTROLLER(S) TO EACH END OF THE MAINLINE. WIRES SHALL COME UP INTO ALL VALVE BOXES ALONG THE MAINLINE PATH WITH 36" EXPANSION COILS IN EACH BOX. SPARE WIRES SHALL BE COLOR-CODED DIFFERENTLY THAN OTHER CONTROL WIRES FOR EACH CONTROLLER.
 22. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR IS TO TURN OVER TO THE OWNER THE FOLLOWING:
 - 22.a. A REPRODUCIBLE SET OF "AS-BUILT" DRAWINGS AND CONTROLLER CHART.
 - 22.b. 2 KEYS FOR EACH CONTROLLER / CONTROLLER ENCLOSURE (AS APPLICABLE).
 - 22.c. 2 QUICK COUPLER KEYS AND MATCHING HOSE SWIVELS.
 - 22.d. 4 OF EACH SPRINKLER HEAD SPECIFIED.
 23. RECORD DRAWINGS - THE CONTRACTOR SHALL PROVIDE AND KEEP UP TO DATE A COMPLETE RECORD SET OF PRINTS WHICH SHALL BE CORRECTED DAILY AND SHOW EVERY CHANGE FROM THE ORIGINAL DRAWINGS. PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL TRANSCRIBE ALL INFORMATION FROM THE RECORD SET TO A BLACK-LINE PRINT PROCURED FROM THE OWNER. ALL WORK SHALL BE NEAT AND LEGIBLE. LOCATING THE FOLLOWING ITEMS FROM PERMANENT POINTS OF REFERENCE: SHUT-OFF VALVES, MAINLINE AND CONTROL WIRE ROUTING, POC, BACKFLOW DEVICE, CONTROL VALVES, CONTROLLER, QUICK COUPLING VALVES, AND OTHER PERTINENT UNDERGROUND ITEMS.
 24. "CONTROLLER CHART" - UPON APPROVAL OF THE FINAL RECORD DRAWINGS, PROVIDE ONE CHART FOR EACH CONTROLLER INSTALLED.
 - 24.A. THE CHART IS TO BE A REDUCED COPY OF THE APPROVED RECORD DRAWING (A BLACK-LINE PRINT REDUCED TO THE MAXIMUM SIZE THE CONTROLLER DOOR WILL ALLOW, COLORED WITH A DIFFERENT COLOR FOR EACH VALVE STATION'S AREA OF COVERAGE). WHEN COMPLETED AND APPROVED, THE CHART SHALL BE LAMINATED BETWEEN TWO (2) PIECES OF 20 MIL. CLEAR PLASTIC AND MOUNTED ON THE INSIDE OF THE CONTROLLER DOOR USING VELCRO TAPE OR EQUAL.
 - 24.B.

NOTE:
CONTRACTOR IS RESPONSIBLE FOR ALL INFORMATION ON THESE DETAILS. IF UNABLE TO READ THESE DETAILS, OBTAIN LEGIBLE ORIGINAL DETAILS FROM THE CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT, FORESTRY AND LANDSCAPE DIVISION.

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 951.683.0283 FAX 951.683.4953
 E-MAIL: IDAVIDSON@DIANINC.COM
 IDLA# 11007 - 6/8/2009

REGISTERED LANDSCAPE ARCHITECT
 STATE OF CALIFORNIA
 5/15/08
 Exp. Date

DESIGNED BY	LJD	DRAWN BY	SS	CHECKED BY	LJD
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CITY OF RIVERSIDE, CALIFORNIA PUBLIC WORKS DEPARTMENT		
APPROVED BY	BY	DATE
CONST. CONTRACT ADMIN.		
PRINCIPAL ENGINEER		
STREET SERVICES		
SURVEYOR		
TRAFFIC DIVISION		
PARKS DEPARTMENT		

CITY OF RIVERSIDE
 COLUMBIA AVENUE AND IOWA AVENUE
 STREET IMPROVEMENT PROJECT
 LANDSCAPE PLANS
IRRIGATION DETAILS

DESIGN W.O. NO. 0702989
 CONSTRUCTION W.O. NO. 0915428
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 SHEET 53 OF 76