GENERAL NOTES:

- 1. ALL WORK AND MATERIALS SHALL COMPLY WITH THE 2015 CALTRANS STANDARD PLAN AND SPECIFICATIONS, LATEST EDITION OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK), CITY OF GARDEN GROVE STANDARD PLANS, ORANGE COUNTY STANDARD PLANS, RESOURCE AND DEVELOPMENT MANAGEMENT DEPARTMENT (RDMD) DESIGN MANUALS, AND THESE PROJECT PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND NOTIFY THE CITY OF GARDEN GROVE WATER DEPARTMENT AND ALL OTHER UTILITY COMPANIES A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL PHASES OF CONSTRUCTION WITH THE VARIOUS UTILITY
- WATER VALVES SHALL BE ADJUSTED TO GRADE OR RECONSTRUCTED BY THE CONTRACTOR PER CITY STD. PLAN B-752 WITHIN 5 WORKING DAYS OF PAVING THE SURFACE COURSE. SEWER AND STORM DRAIN MANHOLES SHALL BE ADJUSTED TO GRADE BY THE CONTRACTOR, WITHIN 10 WORKING DAYS AFTER COMPLETION OF FINAL ASPHALT PAVING, CONTRACTOR SHALL NOT OPERATE ANY WATER VALVES ASSOCIATED WITH THE PROJECT. CONTRACTOR SHALL CONTACT MIKE GRAY AT (714) 719-1284 FOR ANY WATER VALVE OPERATION.
- TRAFFIC CONTROL SHALL CONFORM TO THE TRAFFIC ENGINEERING POLICY TE 32, THE PROVISIONS IN SECTION 7-10, "PUBLIC CONVENIENCE AND SAFETY," OF CALTRANS STANDARD SPECIFICATIONS, THE LATEST EDITION MANUAL ON UNIFORM OF TRAFFIC CONTROL DEVICES (MUTCD), THE LATEST EDITIONS OF WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH MANUAL) AND WITH CALTRANS STANDARD PLAN T-11 TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON MULTI-LANE CONVENTIONAL HIGHWAYS, NOTES 2 AND 6 ON THE CALTRANS STANDARD PLAN T-11 REGARDING ILLUMINATED ADVANCED WARNING SIGNS AND CONES SHALL NOT APPLY.
- 5. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (1-800-422-4133) TWO WORKING DAYS PRIOR TO DOING ANY EXCAVATION. CONTRACTOR SHALL BE RESPONSIBLE FOR DÈTERMINING THE LÓCATION OF ALL EXISTING UTILITIES AND VERIFY LOCATION AND DEPTH OF ALL UTILITIES WITHIN THE CONSTRUCTION AREA PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES. PROTECT IN-PLACE ALL UNDERGROUND AND OVERHEAD UTILITY LINES AND APPURTENANCES. CONTRACTORS SHALL NOTIFY CITY OF ANY POTENTIAL CONFLICT PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL MAKE INVENTORY OF, AND PROTECT ALL SURVEY MONUMENTS AND CENTERLINE TIES IN PLACE. CONTRACTOR SHALL TRANSMIT CENTERLINE TIE DOCUMENTS TO THE ORANGE COUNTY SURVEY OFFICE AND THE ENGINEER. TO VERIFY ALL CENTERLINE TIES HAVE BEEN LOCATED PRIOR TO START OF ANY WORK.
- 7. THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR INSPECTION TWO WORKING DAYS PRIOR TO STARTING WORK AT (714)
- 8. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AT ALL TIMES DURING CONSTRUCTION AMPLE MEANS AND DEVICES WITH WHICH TO PROMPTLY REMOVE AND PROPERLY DISPOSE OF ALL WATER FROM ANY SOURCE ENTERING THE EXCAVATION OR OTHER PARTS OF THE WORK.
- 9. PROTECT-IN-PLACE ALL EXISTING IMPROVEMENTS, STRUCTURES, INFRASTRUCTURE, UTILITIES, AND ALL OTHER ITEMS NOT BEING CALLED OUT TO BE REMOVED OR RELOCATED, OR NOT PART OF SCOPE. ALL EXISTING IMPROVEMENTS THAT ARE DAMAGED OR REMOVED DURING CONSTRUCTION INCLUDING STRIPING, C&G, DRIVEWAYS, UTILITIES, ETC. SHALL BE REPLACED IN KIND, OR AS SPECIFIED IN THE CONTRACT DOCUMENTS.
- 10. THE EDGES OF ALL A.C. PATCHES SHALL BE SEALED WITH ASPHALT EMULSION.
- 11. CONTRACTOR SHALL HAVE SUFFICIENT MATERIALS ON HAND AT ALL TIMES TO EXPEDITE ANY EMERGENCY REPAIR.
- 12. ALL MEASUREMENTS ARE HORIZONTAL, CONTRACTOR IS RESPONSIBLE FOR CONVERTING HORIZONTAL DISTANCES TO SLOPE DISTANCES.
- 13. PAVEMENT LEGENDS AND CROSSWALKS SHALL BE THERMOPLASTIC.
- 14. IF CULTURAL MATERIALS OR RESOURCES ARE DISCOVERED DURING THE PROJECT CONSTRUCTION, ALL WORK IN THE VICINITY OF THE DISCOVERY SHALL IMMEDIATELY CEASE.
- 15. REMOVE ALL USA MARKINGS FROM PUBLIC RIGHT-OF-WAY AFTER CONSTRUCTION IS COMPLETE.

UTILITY CONTACT INFORMATION

UTILITY	CONTACT	PHONE NO.
GARDEN GROVE SEWER DIVISION	SAMUEL KIM	(714) 741–5534
GARDEN GROVE WATER DIVISION	SAMUEL KIM	(714) 741–5534
GARDEN GROVE TRAFFIC DIVISION	DAI VU	(714) 741–5189
SOUTHERN CALIFORNIA EDISON CO.	CECILIA CAMPOS	(714) 973–5445
THE GAS CO.	DON AMADOR	(714) 634-3039
AT&T	YVETTE MARTINEZ-GARAFANO	(714) 666-5692
O.C.T.A.	JEROME JOHNSON	(714) 265-4365
TIME WARNER COMMUNICATIONS	CURTIS VASQUEZ	(714) 719-7880
COUNTY SANITATION DISTRICT OF O.C.	RUDY DAVILA	(714) 593–7348
VERIZON	MIKE MADRID	(714) 375-6720
REDFLEX TRAFFIC SYSTEMS INC.	MARC CARROLL	(530) 957-2856

CAUTION: THE ENGINEER OF RECORD WILL NOT BE RESPONSIBLE FOR OR LIABLE FOR ANY UNAUTHORIZED CHANGES TO THESE PLANS. ALL CHANGES MUST BE APPROVED BY THE PLAN PREPARER.

Underground Service Alert



Call 811 before you dig.

CALL 811 TWO WORKING DAYS BEFORE YOU DIG.

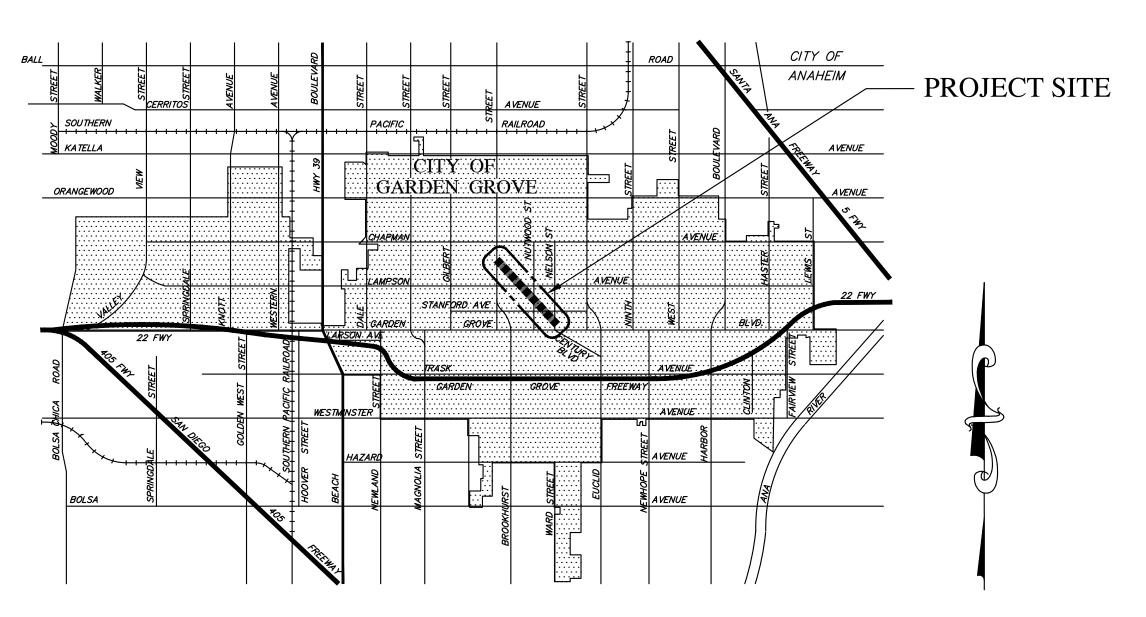
MWELO - AB-1881 STATEMENT: HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLAN. 02-04-2020

City Of Garden Grove Department Of Public Works

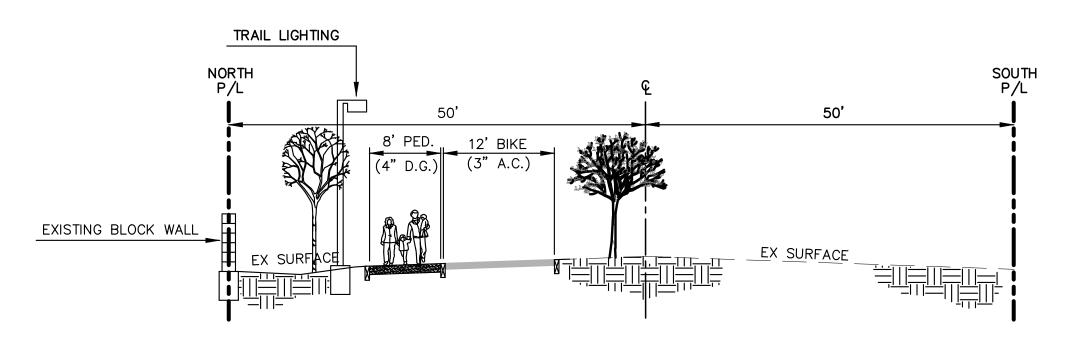
BICYCLE AND PEDESTRIAN TRAIL LANDSCAPE AND IRRIGATION PROJECT

ALONG O.C.T.A. (FORMER P.E.) R.O.W. FROM BROOKHURST ST. TO NELSON ST.

CAL FIRE TRACKING NO.: 17-CCI-UF-01-MGMT-0041 GRANT NO.: 8GG17404



LOCATION MAP NOT TO SCALE



SAMPLE SECTION - BIKE TRAIL NOT TO SCALE



AND ASSOCIATES INC 17782 17th Street Suite 200 Tustin California 92780-1947

Phone: 714.665.4500

BICYCLE AND PEDESTRIAN TRAIL

ON THE OCTA ROW TITLE SHEET

DRAWING NUMBER

7/9/2020

DATE

GRANT NO. 8GG17404

AND IRRIGATION

DAVID EVANS

HEATH D. HABIG P.L.A. 5028

SHEET INDEX

IRRIGATION LEGEND

IRRIGATION PLAN IRRIGATION PLAN

IRRIGATION PLAN

IRRIGATION DETAILS

IRRIGATION DETAILS

| PLANTING PLAN

| PLANTING PLAN

PLANTING DETAILS

10 | PLANTING PLAN

IRRIGATION CALCULATIONS

13 | ELECTRICAL LEGENDS AND NOTES

| ELECTRICAL SPECIFICATIONS

TITLE SHEET

SHEET NO. SHEET TITLE

3

5

6

9

Drawing Name: P:\G\GGIE00000002\0400CAD\SHEETS\01-GGIE0000-0001-ts.dwg Last Opened: Jul 09, 2020 — 4:54pm by: Sxwa Plot Date: 7/9/2020 4:54 PM

ELEVATION: 85.727 DESCRIPTION: FOUND 2.5"BRONZE CITY OF GARDEN GROVE BM DISK WITH PUNCH IN TRIANGLE, SET IN THE S.E CORNER OF A 16' BY 4' CONCRETE CATCH BASIN. MONUMENT LOCATED IN N.E CORNER OF A 16' BY 4' CONCRETE CATCH BASIN. MONUMENT LOCATED IN N.E CORNER OF THE PROPERTY OF THE PROPER LAMPSON AVE. AND BROOKHURST ST. 15' EAS'
THE BCR AND 1' NORTH OF THE CURB FACE.

REVISIONS DESIGNED BY: DRAWN BY: CHECKED BY: ISSUED BY APP'D DATE REV. DESCRIPTION APPROVED BY: SENIOR ENGINEER DATE

STREET DIVISIONS MGR. WATER SERVICES MGR. **REAL PROPERTY AGENT** DESIGN ASSUMPTIONS OR ACCURACY.

APPROVED BY:

CITY ENGINEER

APPROVED BY:

DIRECTOR OF PUBLIC WORKS THIS PLAN IS SIGNED BY THE PUBLIC WORKS DEPARTMENT FOR CONCEPT AND ADHERENCE TO CITY STANDARDS AND REQUIREMENTS ONLY. THE PUBLIC WORKS DEPARTMENT IS NOT RESPONSIBLE FOR THE

7404

~

(1)

IRRIGATION NOTES

- IT IS THE INTENT OF THESE DRAWINGS TO INDICATE A COMPLETE AND OPERATIONAL IRRIGATION SYSTEM GIVING FULL COVERAGE AND READY FOR USE BY THE OWNER. THE DRAWINGS ARE BASED ON LANDSCAPE AND GRADING DRAWINGS PREPARED IN ADVANCE OF THESE DRAWINGS. ANY DISCREPANCIES, OMISSIONS, ERRORS, ETC. ON THESE DRAWINGS OR ON SITE CHANGES, DO NOT AND SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PROVIDE A COMPLETE SYSTEM AS SHOWN. IF NECESSARY, THE CONTRACTOR MAY, WHERE CHANGES OCCUR, AND OR DELETE SPRINKLERS, REROUTE PIPE, ETC. TO ASSURE ADEQUATE AND FULL COVERAGE.
- 2. IRRIGATION CONTRACTOR SHALL VERIFY ALL PRESSURES ON SITE PRIOR TO CONSTRUCTION
- 3. CONTRACTOR SHALL INSTALL CHECK VALVES IN ALL HEADS IN WHICH LOW HEAD DRAINAGE OCCURS.
- 4. IRRIGATION SYSTEM IS STRICTLY DIAGRAMMATIC, THEREFORE, CONTRACTOR MUST MAKE ADJUSTMENTS IN THE FIELD TO INSURE ADEQUATE COVERAGE.
- 5. LOCATE ALL VALVES IN PLANTING AREAS.
- 6. IRRIGATION SYSTEM SHALL CONFORM TO STATE AND LOCAL CODES.
- 7. ALL SHRUBBERY-TYPE HEADS ADJACENT TO WALKS SHALL BE INSTALLED AS LOW AS NECESSARY TO PREVENT ANY DAMAGE TO IRRIGATION SYSTEM.
- 8. THE SYSTEM SHALL BE FULLY GUARANTEED FOR A PERIOD OF ONE YEAR. ANY DEFECTIVE MATERIAL OR POOR WORKMANSHIP SHALL BE REPLACED OR REPAIRED BY THE IRRIG-ATION CONTRACTOR TO SATISFACTION OF AND AT NO COST TO THE OWNER.
- 120 VOLT ELECTRICAL POWER OUTLET FOR CONTROLLERS SHALL BE PROVIDED AS NOTED. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING CONNECTION FROM SOURCE TO CONTROLLER.
- 10. MAINLINE FEEDER BETWEEN POINT OF CONNECTION, METER AND BACKFLOW PREVENTER SHALL BE OF MATERIAL AS REQUIRED BY THE CITY OF GARDEN GROVE.
- 11. PROVIDE MINIMUM 18" COVER OVER ALL PRESSURE MAIN LINE PIPING, AND 12" OVER ALL NON-PRESSURE LATERAL LINE PIPING. ALL PIPE UNDER PAVED AREAS IS TO BE INSTALLED IN A PVC SCH. 40 SLEEVE WITH 36" MIN. COVER. SLEEVE LOCATIONS TO BE AS SHOWN ON PLANS. CITY DEPTH REQUIREMENTS FOR PIPE SUPERCEDE ALL THE ABOVE DIMENSIONS.
- 12. IRRIGATION CONTRACTOR SHALL FLUSH ALL LINES AND ADJUST ALL HEADS FOR MAXIMUM PERFORMANCE AND TO PREVENT OVERSPRAY AS MUCH AS POSSIBLE.
- 13. DO NOT WILLFULLY INSTALL THE SYSTEM AS DESIGNED WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS OR GRADE DIFFERENCES EXIST THAT WERE NOT KNOWN DURING THE DESIGN PROCESS. SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE; OTHERWISE, THE IRRIGATION CONTRACTOR MUST ASSUME FULL RESPONSIBILITY FOR ANY AND ALL NECESSARY REVISIONS.
- 14. FINAL LOCATION OF AUTOMATIC CONTROLLER AND THE BACKFLOW PREVENTER SHALL BE DETERMINED BY OWNER'S AUTHORIZED REPRESENTATIVE IN CONSULTATION WITH THE LANDSCAPE ARCHITECT.
- 15. FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO WALKS AND WALLS/FENCES AS MUCH AS POSSIBLE.
- 16. POLYETHYLINE PIPE TO BE BURIED NO DEEPER THAN 4" BELOW SURFACE.
- 17. LOCATION OF P.O.C. IS DIAGRAMATIC. FINAL LOCATION MUST BE DETERMINED IN FIELD.
- 18. IN ADDITION TO THE SLEEVES SHOWN ON THE PLAN, THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ADDITIONAL SLEEVES OF SUFFICIENT SIZE UNDER ALL PAVED AREAS PRIOR TO PAVING UPON APPROVAL OF THE OWNER'S REPRESENTATIVE, IF REQUIRED TO OPERATE SYSTEMS.

	EQUIPMENT LEGEND		
SYMBOL	MANUFACTURER/MODEL #	SIZE	DETAIL
	IRRIGATION CONTROLLER — SEE POC CALL OUT BOX FOR MODEL NUMBER. CONTRACTOR TO MAKE ELECTRICAL CONNECTION TO THE CONTROLLER. COORDINATE WITH ELECTRICAL ENGINEER FOR ELECTRICAL POWER LOCATION. FINAL LOCATION OF CONTROLLER TO BE APPROVED BY OWNER REPRESENTATIVE	I	DETAIL 1 SHEET L-07
M	EXISTING WATER METER - CONTRACTOR TO VERIFY EXACT LOCATION IN FIELD	_	DETAIL 1 SHEET L-07
E	SOLAR PANEL ELECTRICAL SERVICE. FINAL LOCATION TO BE APPROVED BY CITY REPRESENTATIVE	_	REFER TO ELECTRICAL PLAI
	FEBCO 825YA REDUCED PRESSURE BACKFLOW PREVENTER — TO BE INSTALLED INSIDE "STRONGBOX" SBBC—45SS STAINLESS STEEL ENCLOSURE. FINAL LOCATION TO BE APPROVED BY OWNER REPRESENTATIVE	1.5"	DETAIL 2 SHEET L-07
₽	WILKINS PRESSURE REGULATOR MODEL 500XL-HLR (10-125 PSI SPRING RANGE). SET PRESSURE IN THE FIELD PER DYNAMIC LOSS PRESSURE CALCULATION.	PER PLAN	DETAIL XXX SHEET L-XXX
•	BUCKNER SUPERIOR MODEL 3200 NORMALLY CLOSED ELECTRIC CONTROL MASTER VALVE	1.5"	DETAIL 3 SHEET L-07
®	CALSENSE FM-1 BRASS FLOW SENSOR. TO BE INSTALLED PER DETAIL	1"	DETAIL 4 SHEET L-07
M	NIBCO T-113-K BRONZE GATE VALVE. TO BE INSTALLED PER DETAIL	LINE SIZE	DETAIL 5 SHEET L-07
•	BUCKNER SUPERIOR MODEL 950-PRS REMOTE CONTROL VALVE	PER PLAN	DETAIL 6 SHEET L-07
-	RAINBIRD 44-LRC - 1" NPT LOCKING RUBBER COVER. CONTRACTOR TO PROVIDE THREE (3) QUICK COUPLER KEYS UPON PROJECT COMPLETION	1"	DETAIL 7 SHEET L-07
P	RAINBIRD OPERIND — OPERATION INDICATOR. CONTRACTOR TO INSTALL ONE AT EACH END OF SYSTEM.	LINE SIZE	DETAIL 1 SHEET L-08
(4)	RAINBIRD RWS-BC-1401. INSTALL TWO (2) PER TREE	PER PLAN	DETAIL 3 SHEET L-08
SIZE -	PVC SCH. 40 IRRIGATION MAINLINE. MIN. 18" COVER.	2"	DETAIL 2 SHEET L-08
	IRRIGATION SLEEVES — SEE SLEEVING CHART. ALL PIPE THAT CROSS UNDER PAVEMENT AND/OR STRUCTURES TO BE SLEEVED PER DETAIL. SLEEVE MIN. 36" COVER.	PER PLAN	DETAIL 4 SHEET L-08
	TREE IRRIGATION LATERALS SCH 40 PVC. MIN. 12" COVER.	PER PLAN	DETAIL 2 SHEET L-08

(1) CONTROLLER TO BE EQUIP. W/ A RAINBIRD RDS-BDx RAIN SENSOR. INSTALL PER MANUF. SPEC.

(2) CONTROLLER SHALL BE EQUIPPED WITH RAIN SENSOR TO BE INSTALLED PER MANUFACTURER DETAILS AND SPECIFICATIONS. (3) PLANS ARE DIAGRAMMATIC. PIPING AND VALVES ARE SHOWN IN HARDSCAPE FOR CLARITY ONLY.

(4) CONTRACTOR SHALL LOCATE BACKFLOW PREVENTER IN SHRUB AREA AND SCREEN WHENEVER POSSIBLE.

SIZE G.P.M.

SLEEVING LEGEND

(2)TWO EXISTING 4" SLEEVE

CONTRACTOR TO HAND DIG AND FIELD VERIFY EXACT LOCATION $\langle \mathsf{B} \rangle$ — install new sleeve – refer to sleeving chart for size

15+50 - EXISTING SLEEVE 18+50 - EXISTING SLEEVE 21+50 - EXISTING SLEEVE 24+50 - EXISTING SLEEVE 27+50 - EXISTING SLEEVE 31+50 - EXISTING SLEEVE 34+50 - EXISTING SLEEVE 38+00 - EXISTING SLEEVE 41+00 - EXISTING SLEEVE 42+75 - EXISTING SLEEVE 44+00 - EXISTING SLEEVE 45+50 - EXISTING SLEEVE 48+50 - EXISTING SLEEVE 51+00 - EXISTING SLEEVE

52+75 - PROPOSED SLEEVE 55+75 - PROPOSED SLEEVE 58+75 - PROPOSED SLEEVE

12+50 - EXISTING SLEEVE

APPROXIMATE SLEEVE LOCATION:

POC # 1-CONTROLLER #A

DOMESTIC WATER SERVICE - WEST SIDE OF LAMPSON AVE.

PEAK DEMAND: 12 GPM

STATIC PRESSURE : ±60 PSI WATER SOURCE & PHONE #: CARINA DAN (CITY OF GARDEN GROVE) - (714) 741-5346 DATE INFORMATION OBTAINED: MARCH 16, 2020

AREA SERVED: 12,485 SF.

ESTIMATED ANNUAL WATER USE: 128,933 GALS./YR. ANNUAL MAXIMUM ALLOWABLE WATER BUDGET: 164,412 GALS./YR.

IRRIGATION CONTROLLER

CONTROLLER #A: CALSENSE CS3-2W-S/CS3-GR-KIT/COMM-5YR-2/CS-2W-2ST(Qty TBD)/CS-2W-POC/FM-1/

POC # 3-CONTROLLER #C DOMESTIC WATER SERVICE - WEST SIDE OF STANFORD AVE.

WATER METER SIZE : 1.5" PEAK DEMAND: 12 GPM

STATIC PRESSURE : ±60 PSI WATER SOURCE & PHONE #: CARINA DAN (CITY OF GARDEEN GROVE) - (714) 741-5346

DATE INFORMATION OBTAINED: MARCH 16, 2020 AREA SERVED: 5,104 SF.

ESTIMATED ANNUAL WATER USE: 49,547 GALS./YR. ANNUAL MAXIMUM ALLOWABLE WATER BUDGET: 67,214 GALS./YR.

IRRIGATION CONTROLLER

CONTROLLER #C: CALSENSE CS3-2W-S/CS3-GR-KIT/COMM-5YR-2/CS-2W-2ST(Qty TBD)/CS-2W-POC/FM-1/

POC # 2 — CONTROLLER #B

DOMESTIC WATER SERVICE - EAST SIDE OF LAMPSON AVE. WATER METER SIZE: 1.5"

PEAK DEMAND: 14 GPM STATIC PRESSURE : ± 60 PSI

WATER SOURCE & PHONE #: CARINA DAN (CITY OF GARDEEN GROVE) - (714) 741-5346 DATE INFORMATION OBTAINED: MARCH 16, 2020

AREA SERVED: 6,204 SF.

ESTIMATED ANNUAL WATER USE: 58,809 GALS./YR. ANNUAL MAXIMUM ALLOWABLE WATER BUDGET: 81,699 GALS./YR.

IRRIGATION CONTROLLER

CONTROLLER #B: CALSENSE CS3-2W-S/CS3-GR-KIT/COMM-5YR-2/CS-2W-2ST(Qty TBD)/CS-2W-POC/FM-1/

POC # 4-CONTROLLER #D

DOMESTIC WATER SERVICE - EAST SIDE OF STANFORD AVE.

WATER METER SIZE: 1.5" PEAK DEMAND: 11 GPM

STATIC PRESSURE : ±60 PSI

WATER SOURCE & PHONE #: CARINA DAN (CITY OF GARDEEN GROVE) - (714) 741-5346 DATE INFORMATION OBTAINED: MARCH 16, 2020

AREA SERVED: 4,084 SF. ESTIMATED ANNUAL WATER USE: 52,535 GALS./YR.

ANNUAL MAXIMUM ALLOWABLE WATER BUDGET: 53,781 GALS./YR.

IRRIGATION CONTROLLER

CONTROLLER #D: CALSENSE CS3-2W-S/CS3-GR-KIT/COMM-5YR-2/CS-2W-2ST(Qty TBD)/CS-2W-POC/FM-1/

MWELO - AB-1881 STATEMENT:

HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN. SIGNATURE,

(JON S. OEN, CID# 30459)

06-01-2020 DATE

IRRIGATION EQUIPMENT NOTE:

THE CONTRACTOR SHALL LOCATE MAINLINE AND IRRIGATION EQUIPMENT IN PLANTING AREA, TYPICAL.

SLEEVING NOTE:

THE CONTRACTOR SHALL SLEEVE ALL LATERAL LINE / MAINLINE AND VALVE WIRES THAT CROSS UNDER HARDSCAPE (SIDEWALK, ETC.). ALL SLEEVING SHALL BE 2 TIMES THE DIAMETER OF THE PIPE USED. REFER TO SLEEVING CHART.

LATERAL LINE PIPE SIZE:

ALL IRRIGATION LATERAL LINES SHALL BE 3/4" MINIMUM UNLESS OTHERWISE NOTED ON THE PLAN.

IRRIGATION AUDIT SCHEDULE:

IRRIGATION AUDIT SHALL BE CONDUCTED BY A CERTIFIED IRRIGATION AUDITOR AND PROVIDE COPIES TO THE CITY OF GARDEN GROVE WATER PRIOR TO ACCEPTANCE OF THE PROJECT AS COMPLETE.

- IRRIGATION AUDIT SHALL BE PERFORMED ONCE THE IRRIGATION IRRIGATION INSTALLATION IS COMPLETED.
- IRRIGATION AUDIT SHALL BE PERFORMED AT THE END OF THE MULTI-YEAR MAINTENANCE PERIOD.

IRRIGATION MAINTENANCE SCHEDULE:

- CHECK FOR IRRIGATION EQUIPMENT MALFUNCTION (CONTROLLER, VALVES,
- MAINLINE, LATERAL LINE, ETC.) WEEKLY CHECK AND CLEAN IRRIGATION CONTROLLER CABINET - BIMONTHLY

SCH 40 PVC SLEEVING CHART

5-10 WIRES

11-20 WIRES

21-30 WIRES

31-40 WIRES

41-60 WIRES

61-99 WIRES

100+ WIRES

N/A

1 1/4" SLEEVE

1/2" SLEEVE

2 1/2" SLEEVE

" SLEEVE

3" SLEEVE

4" SLEEVE

6" SLEEVE

8" SLEEVE

10" SLEEVE

- CHECK IRRIGATION TIME/DAY SETTING ON CONTROLLER BIMONTHLY
- CHECK CONNECTION TO INTERNET FOR PROPER OPERATION QUARTERLY.

3/4" PIPE 1" PIPE

4"PIPE

6" PIPE

1 1/4" PIPE

1 1/2" PIPE

2 1/2"-3" PIPE

STATION DECODERS - CS-2W-ST:

METER COMBO.

TWO-WIRE CABLE:

MINIMUM STATION DECODERS TO BE VERIFY BY CONTRACTOR. MAXIMUM 70 STATION DECODERS PER CONTROLLER.

PAIGE CABLE P-7354-D OR REGENCY'S HUNTER CABLE IN CONDUIT. 14

GAUGE (1.5 MM) SOLID COPPER, JACKETED. MAXIMUM TOTAL OF ALL RUNS IS

7,000' (FEET) IN 1.25" CONDUIT. INSTALL PULL BOXES LOCATED EVERY 250'

USE 3M SCOTCH LOCK 3570G-N CONNECTORS FOR ALL WIRE SPLICES AND

MAXIMUM DISTANCE 10' (FEET) 14 GAUGE WIRE FROM DECODER TO MASTER

1 (ONE) P.O.C. DECODER IS NEEDED FOR EACH MASTER VALVE AND FLOW

(FEET), EVERY CHANGE IN DIRECTION AND AT ALL CROSSINGS.

P.O.C. DECODERS - CS-2W-POC:

FOR UNUSED WIRES ON DECODERS.

VALVE SOLENOID OR FLOW SENSOR.

USE 3M SCOTCH LOCK 3570G-N CONNECTORS FOR ALL WIRE SPLICES AND FOR UNUSED WIRES ON DECODERS.

MAXIMUM DISTANCE 100' (FEET) 14 GAUGE WIRE FROM DECODER TO VALVE SOLENOID.

GROUNDING ROD REQUIREMENTS AND INSTALLATION NOTE:

WARNING: PRIOR TO INSTALLATION GROUNDING ROD(S), CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG ALERT AND THE OWNER'S REPRESENTATIVE TO IDENTIFY POSSIBLE HAZARDS AND TO AVOID CONTACT WITH UTILITIES SUCH AS, BUT NOT LIMITED TO, HIGH VOLTAGE POWER CABLE, GAS LINE, DATA CABLES, ETC.

CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE THAT OCCURS AS A RESULT OF GROUND ROD INSTALLATION.

5/8" (INCH) X 8' (FEET) COPPER GROUND ROD - ONE AT THE CONTROLLER, ONE EVERY 300' (FEET) AT A DECODER, OR AT NEXT CLOSEST DECODER ALONG 2 WIRE PATH, AND ONE AT THE END OF EACH 2 WIRE CABLE PATH. GROUNDING TO BE DONE ONLY AT A DECODER.

#6 BARE SOLID COPPER WIRE FROM THE COPPER ROD TO THE FIELD COMMON (WHITE WIRE IN THE BLACK HARNESS) OF THE CONTROLLER.

#12 BARE SOLID COPPER WIRE FROM COPPER GROUND ROD TO GREEN WIRE ON DECODER, AS NEEDED.

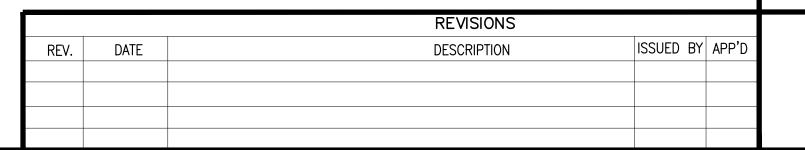
FLOW SENSOR CABLE NOTE (2 WIRE):

FLOW SENSOR CABLE SHALL BE INSTALLED INSIDE 1-1/4" PVC SCH.40 CONDUIT WITH PULL BOXES LOCATED EVERY 250', EVERY CHANGE IN DIRECTION AND AT ALL CROSSINGS.



DAVID EVANS AND ASSOCIATES INC.

17782 17th Street Suite 200 Tustin California 92780-1947 Phone: 714.665.4500





City Of Garden Grove Department Of Public Works

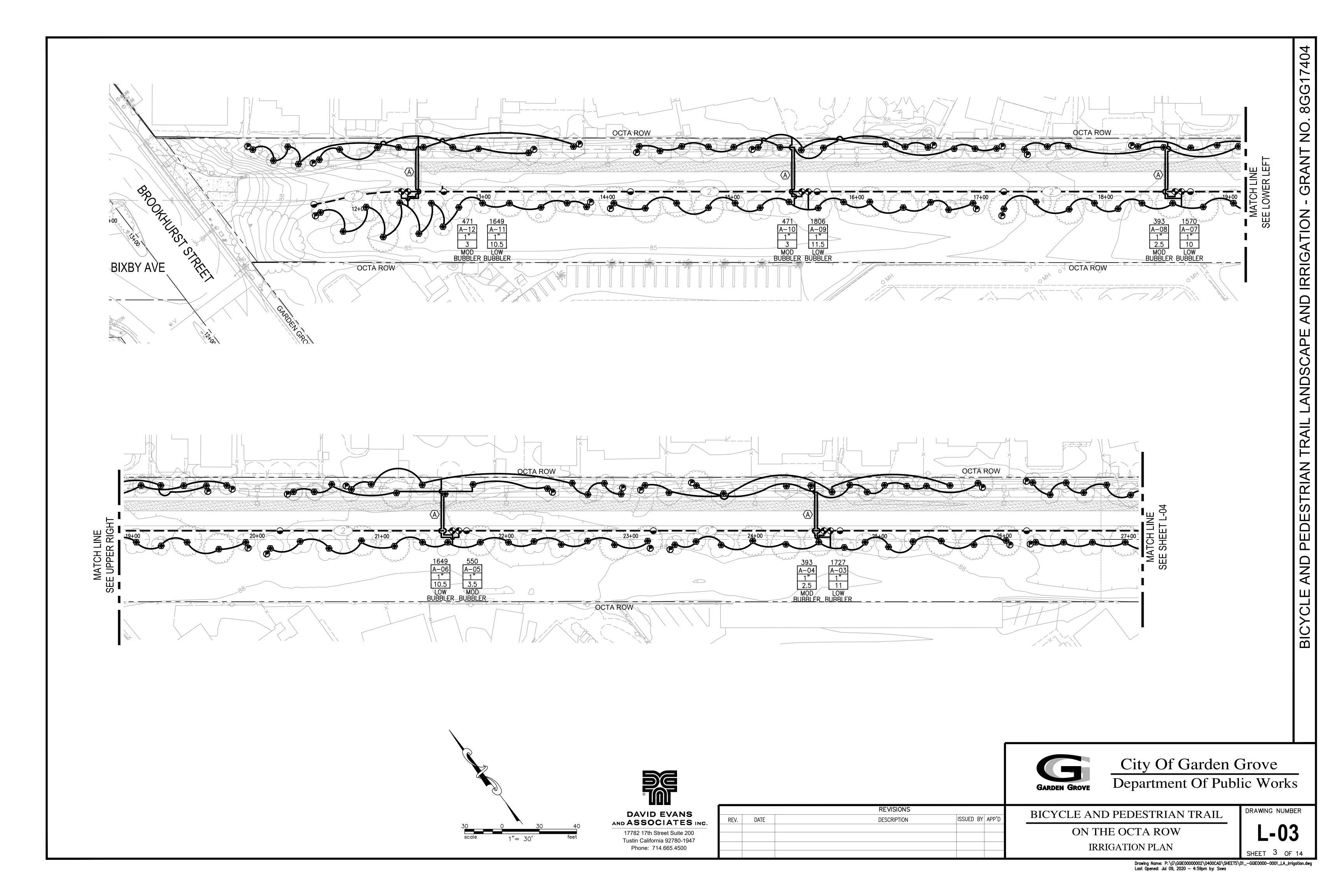
BICYCLE AND PEDESTRIAN TRAIL

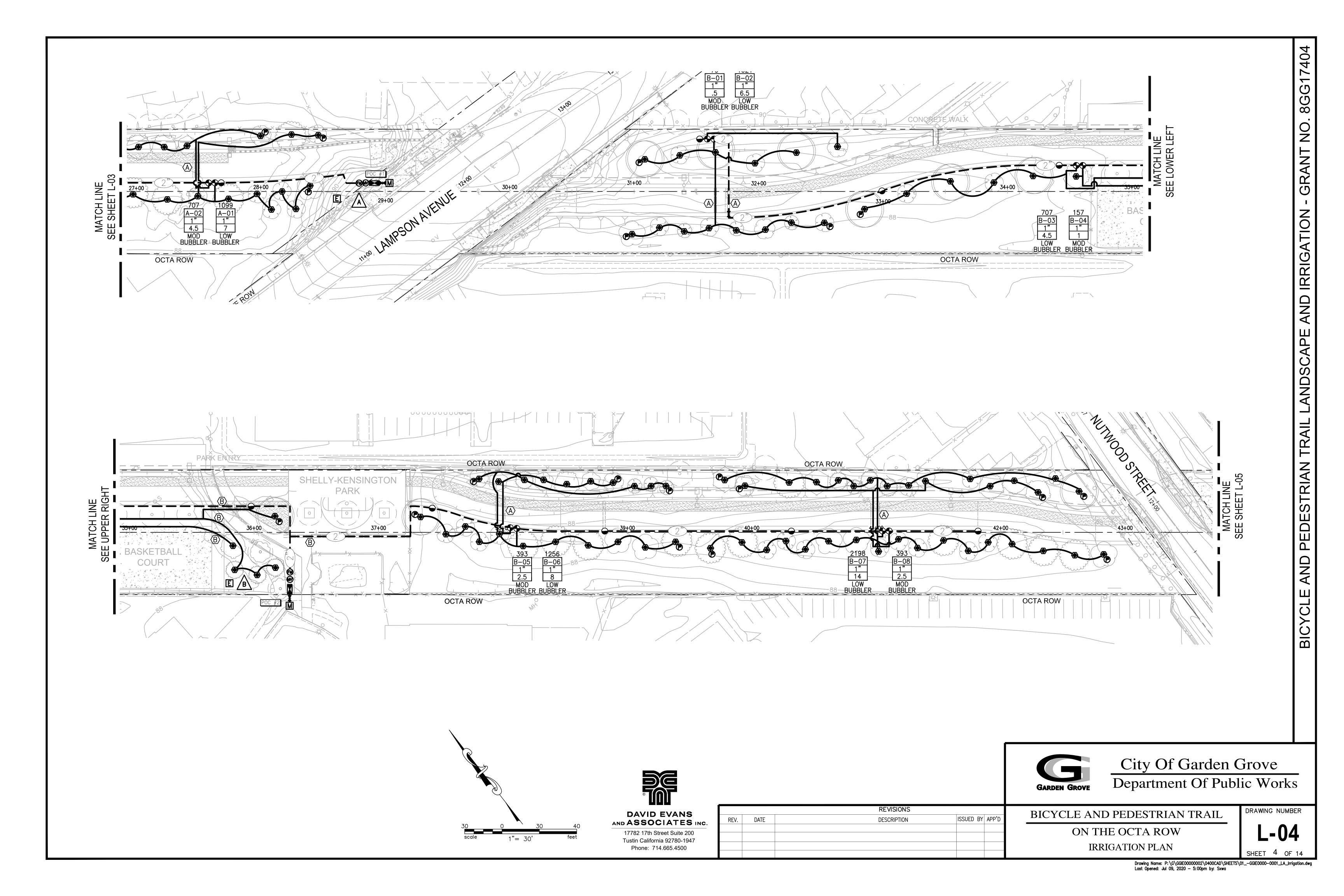
IRRIGATION LEGEND

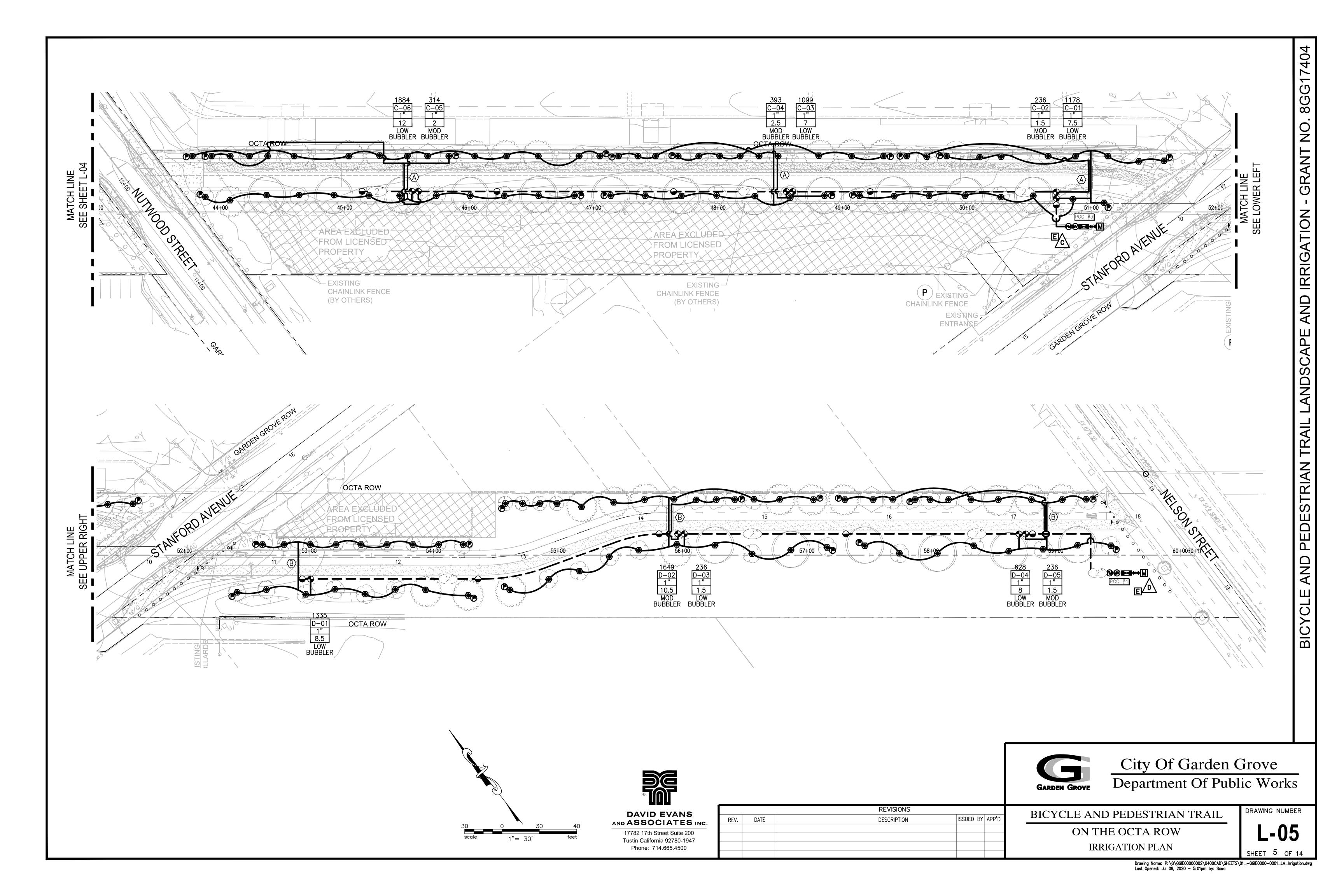
ON THE OCTA ROW

SHEET 2 OF 14

DRAWING NUMBER







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		WUCOLS	Root	Root					Winter	i e		Spring		1	Summe	r		Fall		Maxi
Station	Plant	Crop	Depth	Zone	Irrigation	PR	DU	1)	DecFeb	o.)	(MarMa		(.	lunAug	g.)	(5	SepNov	<i>(</i> .)	Run
No.	Type	Coeff.	(inch)	Avail. Water	Head type	(in/hr)	(%)	Run Time	# of	Days	Run Time	# of	Days	Run Time	# of	Days	Run Time	# of	Days	(m
				(inch)	7.0			(min)	Cycle	per Week	(min)	Cycle	per Week	(min)	Cycle	per Week	(min)	Cycle	per Week	
CONTROLL																				
1	TREE	0.2	36 in.	2.16	BUBBLER	1.2	77%	3	1	1	5	1	1	7	1	1	5	1	1	3
2	TREE	0.5	36 in.	2.16	BUBBLER	1.2	77%	6	1	1	14	1	2	19	1	3	12	1	2	3
3	TREE	0.2	36 in.	2.16	BUBBLER	1.2	77%	3	1	1	5	1	1	7	1	1	5	1	1	3
4	TREE	0.5	36 in.	2.16	BUBBLER	1.2	77%	6	1	1	14	1	2	19	1	3	12	1	2	3
5	TREE	0.5	36 in.	2.16	BUBBLER	1.2	77%	6	1	1	14	1	2	19	1	3	12	1	2	3
6 7	TREE TREE	0.2	36 in.	2.16 2.16	BUBBLER BUBBLER	1.2	77%	3	1	1	5	1	1	7	1	1	5	1	1	3
8	TREE	0.2	36 in.	2.16	BUBBLER	1.2	77% 77%	3 6	1	1	14	1	2	19	1	3	12	1	2	3
9	TREE	0.5	36 in.	2.16	BUBBLER	1.2	77%	3	1	1	5	1	1	7	1	1	5	1	1	1
10	TREE	0.2	36 in.	2.16	BUBBLER	1.2	77%	6	1	1	14	1	2	19	1	3	12	1	2	
11	TREE	0.3	36 in.	2.16	BUBBLER	1.2	77%	3	1	1	5	1	1	7	1	1	5	1	1	
12	TREE	0.5	36 in.	2.16	BUBBLER	1.2	77%	6	1	1	14	1	2	19	1	3	12	1	2	3
		3.0							<u> </u>	<u> </u>		 	† - <u>-</u> -			<u> </u>				_
CONTROLL	ER "B"																			†
1	TREE	0.5	36 in.	2.16	BUBBLER	1.2	77%	6	1	1	14	1	2	19	1	3	12	1	2	3
2	TREE	0.2	36 in.	2.16	BUBBLER	1.2	77%	3	1	1	5	1	1	7	1	1	5	1	1	3
3	TREE	0.2	36 in.	2.16	BUBBLER	1.2	77%	3	1	1	5	1	1	7	1	1	5	1	1	3
3	TREE	0.2	00 111.	2.16	BUBBLER	1.2					_								<u> </u>	3

TREE 0.5 36 in. 2.16 BUBBLER 1.2 77% 6 1 1 1 5 1 1 7 1 1 5 TREE 0.2 36 in. 2.16 BUBBLER 1.2 77% 3 1 1 5 1 1 7 1 1 5 TREE 0.2 36 in. 2.16 BUBBLER 1.2 77% 3 1 1 5 1 1 7 1 1 5 TREE 0.2 36 in. 2.16 BUBBLER 1.2 77% 3 1 1 5 1 1 7 1 1 5 5 TREE 0.5 36 in. 2.16 BUBBLER 1.2 77% 6 1 1 14 1 2 19 1 3 12 1 2 38 THIS RECOMMENDED IRRIGATION SCHEDULE IS MEANT TO BE USED AS A GUIDELINE ONLY, AND DOES NOT TAKE THE PLACE OF PROPER, ONGOING SYSTEM MANAGEMENT. DIFFERING SITE AND CLIMATIC CONDITIONS MAY REQUIRE ADJUSTMENTS NOT REFLECTED IN THIS SCHEDULE.

Pre	essure L	os	s Calculat	<u>ion</u>	
Client Name:	City of Ga	rden	Grove		
Project Name:	Bicycle an	id Pe	edestrian Trail		
Water Meter / POC No.:	A				
Domestic / Recycled:	Domestic				
POC Elevation:	93 ft.				
Static Pressure:	60 psi				
Water Source & Phone #:	Carina Da	n - (7	14) 741-5346		
Date:	March 16,	2020)		
Valve Station No.:	A-11				
Valve Flow Rate:	11 gpm				
Equipment	Size		Flow	Length / Qty.	PSI Loss
Water Meter	1 1/2	in.	11 gpm	N/A	0.0 psi
Backflow Preventer	1 1/2	in.	11 gpm	N/A	12.0 psi
Mainline (PVC)	2	in.	11 gpm	1,860 ft.	1.6 psi
Master Valve	1 1/2	in.	11 gpm	N/A	0.0 psi
Flow Meter	1	in.	11 gpm	N/A	0.6 psi
Gate Valve	2	in.	11 gpm	3	0.3 psi
Remote Control Valve	1	in.	11 gpm	N/A	1.8 psi

VARIES

N/A

VARIES

VARIES

N/A

Total Pressure Required 52.4 psi

Booster Pump

Pressure Req. to Operate Heads 30.0 psi

Available Residual Pressure

4.0 psi

2.0 psi

2.16 BUBBLER 1

 TREE
 0.2
 36 in.
 2.16
 BUBBLER
 1.2
 77%
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 TREE
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 2.16
 BUBBLER
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4 TREE 0.5 36 in. 2.16 BUBBLER 1.2 77% 6 1 1 14 1 2 19

5 TREE 0.5 36 in. 2.16 BUBBLER 1.2 77% 6 1 1 1 4 1 2 19 1 6 TREE 0.2 36 in. 2.16 BUBBLER 1.2 77% 3 1 1 5 1 1 7 1

1 TREE 0.2 36 in. 2.16 BUBBLER 1.2 77% 3 1 1 5 1 1 7 1

0.2 36 in. 2.16 BUBBLER 1
0.2 36 in. 2.16 BUBBLER 1

0.5 36 in. 2.16 BUBBLER 1.2

TREE TREE

ONTROLER "C

Lateral Line

Fittings (Estimate 10%)

Water Source & Phone #:	Carina Dan - (7	14) 741-5346		
Date:	March 16, 2020	0		
Valve Station No.:	B-07			
Valve Flow Rate:	14 gpm			
Equipment	Size	Flow	Length / Qty.	PSI
Water Meter	1 1/2 in.	14 gpm	N/A	0.0
Backflow Preventer	1 1/2 in.	14 gpm	N/A	12.
Mainline (PVC)	2 in.	14 gpm	570 ft.	0.
Master Valve	1 1/2 in.	14 gpm	N/A	0.0
Flow Meter	1 in.	14 gpm	N/A	0.0
Gate Valve	2 in.	14 gpm	3	0.3
Remote Control Valve	1 in.	14 gpm	N/A	1.8
Lateral Line	VARIES	VARIES	VARIES	4.0
Fittings (Estimate 10%)	N/A	N/A	N/A	1.9
	Pres	ssure Req. to C	perate Heads	30.
		Total Pres	sure Required	51.
		Available Resi	dual Pressure	8.9
			Booster Pump	١

Pre	essure Los	s Calculat	ion		Pro	essure Lo
Client Name:	City of Garden	Grove			Client Name:	City of Gard
Project Name:	Bicycle and Pe	edestrian Trail			Project Name:	Bicycle and
Water Meter / POC No.:	В				Water Meter / POC No.:	С
Domestic / Recycled:	Domestic				Domestic / Recycled:	Domestic
POC Elevation:	93 ft.				POC Elevation:	93 ft.
Static Pressure:	60 psi				Static Pressure:	60 psi
Vater Source & Phone #:	Carina Dan - (7	714) 741-5346			Water Source & Phone #:	Carina Dan
Date:	March 16, 2020	0			Date:	March 16, 2
/alve Station No.:	B-07				Valve Station No.:	C-06
/alve Flow Rate:	14 gpm				Valve Flow Rate:	12 gpm
Equipment	Size	Flow	Length / Qty.	PSI Loss	Equipment	Size
Vater Meter	1 1/2 in.	14 gpm	N/A	0.0 psi	Water Meter	1 1/2 ir
Backflow Preventer	1 1/2 in.	14 gpm	N/A	12.0 psi	Backflow Preventer	1 1/2 ii
fainline (PVC)	2 in.	14 gpm	570 ft.	0.5 psi	Mainline (PVC)	2 ir
Master Valve	1 1/2 in.	14 gpm	N/A	0.0 psi	Master Valve	1 1/2 ir
low Meter	1 in.	14 gpm	N/A	0.6 psi	Flow Meter	1 ir
Sate Valve	2 in.	14 gpm	3	0.3 psi	Gate Valve	2 ir
Remote Control Valve	1 in.	14 gpm	N/A	1.8 psi	Remote Control Valve	1 ir
			VA DIEG	4.0 poi	Lateral Line	VARIES
_ateral Line	VARIES	VARIES	VARIES	4.0 psi		
	VARIES N/A	VARIES N/A	N/A	4.0 psi 1.9 psi	Fittings (Estimate 10%)	N/A
	N/A	N/A			Fittings (Estimate10%)	
	N/A	N/A ssure Req. to C	N/A	1.9 psi	Fittings (Estimate10%)	
Lateral Line Fittings (Estimate10%)	N/A Pres	N/A ssure Req. to C	N/A Operate Heads sure Required	1.9 psi 30.0 psi	Fittings (Estimate10%)	N/A F

I hereby certify that:

HEATH HABIG Print Name

714.665.4536

Telephone

Heath Habres

CERTIFICATION OF LANDSCAPE DESIGN

(1) I am a professional appropriately licensed in the State of California to provide professional

(2) The landscape design and water use calculations for the property located at _____

(provide street address or parcel number(s)) were prepared by me or under my supervision. (3) The landscape design and water use calculations for the identified property comply with the requirements of the City of Garden Grove Landscape Water Efficiency Provisions (See Garden Grove Municipal Code Sections 9.08.040.040, 9.12.040, 9.16.040, and 9.18.120) and the City of Garden Grove Guidelines for Implementation of the City of City of Garden Grove Landscape

(4) The information I have provided in this Certificate of Landscape Design is true and correct and is hereby submitted in compliance with the City of Garden Grove Guidelines for Implementation of the City of City of Garden Grove Landscape Water Efficiency Provisions.

License Number

E-mail Address

HEATH.HABIG@DEAINC.COM

CENSUS TRACTS 0882.03, 0886.01, 0887.01

17782 17TH STREET SUITE 200 SUITE 200 TUSTIN CALIFORNIA 92780

Project Name:

Tract / APN No.:

Infiltration Rate:

Available Water:

Depletion Factor:

CONTROLLER "A"

CONTROLLER "D"

Plant

Type

Client Name:

Soil Type:

Station

No.

Bike Trail

12-Feb-20

TREE 0.5 36 in.
TREE 0.5 36 in.

CONDITIONS MAY REQUIRE ADJUSTMENTS NOT REFLECTED IN THIS SCHEDULE.

City of Garden Grove

SANDY LOAM

0.75

0.15

Crop Depth Zone Irrigation PR DU

2.16 BUBBLER 1 2.16 BUBBLER 2.16 BUBBLER 1.

2.16 BUBBLER

2.16 BUBBLER 1.2

2.16 BUBBLER 1.2

2.16 BUBBLER 1.2 77%

 0.5
 36 in.
 2.16
 BUBBLER
 1

 0.2
 36 in.
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 BUBBLER
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Pres	ssure Los	s Calculat	tion_		Pre	ssure Los	s Calculat	<u>tion</u>	
ne:	City of Garden	Grove			Client Name:	City of Garden	Grove		
me:	Bicycle and Pe	edestrian Trail			Project Name:	Bicycle and Pe	destrian Trail		
er / POC No.:	С				Water Meter / POC No.:	D			
Recycled:	Domestic				Domestic / Recycled:	Domestic			
tion:	93 ft.				POC Elevation:	93 ft.			
sure:	60 psi				Static Pressure:	60 psi			
rce & Phone #:	Carina Dan - (7	714) 741-5346			Water Source & Phone #:	Carina Dan - (7	14) 741-5346		
	March 16, 202	0			Date:	March 16, 2020)		
on No.:	C-06				Valve Station No.:	D-02			
/ Rate:	12 gpm				Valve Flow Rate:	11 gpm			
quipment	Size	Flow	Length / Qty.	PSI Loss	Equipment	Size	Flow	Length / Qty.	PSI Loss
er	1 1/2 in.	12 gpm	N/A	0.0 psi	Water Meter	1 1/2 in.	11 gpm	N/A	0.0 psi
Preventer	1 1/2 in.	12 gpm	N/A	12.0 psi	Backflow Preventer	1 1/2 in.	11 gpm	N/A	12.0 psi
PVC)	2 in.	12 gpm	780 ft.	0.7 psi	Mainline (PVC)	2 in.	11 gpm	400 ft.	0.4 psi
ve	1 1/2 in.	12 gpm	N/A	0.0 psi	Master Valve	1 1/2 in.	11 gpm	N/A	0.0 psi
r	1 in.	12 gpm	N/A	0.6 psi	Flow Meter	1 in.	11 gpm	N/A	0.6 psi
1	2 in.	12 gpm	3	0.3 psi	Gate Valve	2 in.	11 gpm	3	0.3 psi
ontrol Valve	1 in.	12 gpm	N/A	1.8 psi	Remote Control Valve	1 in.	11 gpm	N/A	1.8 psi
e	VARIES	VARIES	VARIES	4.0 psi	Lateral Line	VARIES	VARIES	VARIES	4.0 psi
timate 10%)	N/A	N/A	N/A	1.9 psi	Fittings (Estimate 10%)	N/A	N/A	N/A	1.9 psi
	Pres	ssure Req. to C	Operate Heads	30.0 psi		Pres	sure Req. to C	perate Heads	30.0 psi
		Total Pres	sure Required	51.3 psi			Total Pres	sure Required	51.0 psi
		Available Resi	idual Pressure	8.7 psi		7	Available Resi	dual Pressure	9.0 psi
			Booster Pump	N/A				Booster Pump	N/A

RECOMMENDED IRRIGATION SCHEDULING - ESTABLISHED

Location: Santa Ana

Coeff. (inch) Avail. Water Head type (in/hr) (%) Run Time # of Days Ru

(Mar.-May)

(Dec.-Feb.)

(Dec.-Feb.)

THIS RECOMMENDED IRRIGATION SCHEDULE IS MEANT TO BE USED AS A GUIDELINE ONLY, AND DOES NOT TAKE THE PLACE OF PROPER, ONGOING SYSTEM MANAGEMENT. DIFFERING SITE AND CLIMATIC

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 BUBBLER
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 BUBBLER
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 BUBBLER
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 2.16
 BUBBLER
 1.2
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4 TREE 0.5 36 in. 2.16 BUBBLER 1.2 77% 2 1 1 5 1 1 6 1 1

CIMIS Station No.: -

Reference Evapotranspiration Rate

(min) Cycle per Week (min) Cycle per Week (min) Cycle per Week (min) Cycle per Week

(Jun.-Aug.)

(Jun.-Aug.)

(Sep.-Nov.)

(Sep.-Nov.)

Run Time

	Califo	rnia Wate	r Efficient Lar	ndscape	Worksheet			
Reference Evapotranspira	tion (ET _o)	47.2 Pro		ject Type	Non-Resid	ential	0.45	
Hydrozone # / Planting	Plant Factor	Irrigation	Irrigation	ETAF	Landscape	ETAF x	Estimated Total	
Description ^a	(PF)	Me thod ^b	Efficiency (IE) ^c	(PF/IE)	Area (Sq. Ft.)	Area	Water Use (ETWU) ^d	
Regular Landscape <i>F</i>	\reas							
Tree - Low	0.2	Drip	0.77	0.26	9500	2468	72210	
Tree - Mod	0.5	Drip	0.77	0.65	2985	1938	56723	
				Totals	12485	4406	128933	
Special Landscape A	reas			•	•	•		
				1		0	(
				1		0	(
				1		0	(
				1		0	(
				Totals	0	0	(
					ETV	VU Total	128933	
<u> </u>		N.A	lavimum Allov	vod Wate	er Allowance (M Δ M Δ) ^e	16441	

	Califo	rnia Wate	r Efficient Lar	dscape	Worksheet		
Reference Evapotranspirat	ion (ET _o)	47.2	Pro	ject Type	Non-Reside	ential	0.45
Hydrozone # / Planting	Plant Factor	Irrigation	Irrigation	ETAF	Landscape	ETAF x	Estimated Total
De scription ^a	(PF)	Method ^b	Efficiency (IE) ^c	(PF/IE)	Area (Sq. Ft.)	Area	Water Use (ETWU) ^d
Regular Landscape A	reas	,					
Tree - Low	0.2	Drip	0.77	0.26	5182	1346	39389
Tree - Mod	0.5	Drip	0.77	0.65	1022	664	19421
	,	•		Totals	6204	2010	58809
Special Landscape Ar	eas						
				1		0	(
				1		0	(
				1		0	(
				1		0	(
				Totals	0	0	(
			-		ETV	VU Total	58809
		М	aximum Allov	ved Wate	er Allowance (MAWA) ^e	81699

	California \	Nater Effic	cient Landsca	pe Wor	ksheet - POC	"C"	
Reference Evapotranspira	tion (ET _o)	47.2	Pro	ject Type	Non-Resid	ential	0.45
Hydrozone # / Planting	Plant Factor	Irrigation	Irrigation	ETAF	Landscape	ETAF x	Estimated Total
Description ^a	(PF)	Me thod ^b	Efficiency (IE) ^c	(PF/IE)	Area (Sq. Ft.)	Area	Water Use (ETWU) ^d
Regular Landscape <i>P</i>	reas					•	
Tree - Low	0.2	Drip	0.77	0.26	4161	1081	31628
Tree - Mod	0.5	Drip	0.77	0.65	943	612	17919
	•			Totals	5104	1693	4954
Special Landscape A	reas			•			
				1		0	(
				1		0	(
				1		0	(
				1		0	(
				Totals	0	0	(
					ETV	VU Total	4954
		M	axim um Allov	ved Wate	er Allowance (MAWA) ^e	6721-

California Water Efficient Landscape Worksheet - POC "D"

						_	
Reference Evapotranspira	tion (ET _o)	47.2	Pro	ject Type	Non-Resid	ential	0.4
Hydrozone # / Planting	Plant Factor	Irrigation	Irrigation	ETAF	Landscape	ETAF x	Estimated Total
De scription ^a	(PF)	Method ^b	Efficiency (IE) ^c	(PF/IE)	Area (Sq. Ft.)	Area	Water Use (ETWU)
Regular Landscape A	reas						
Tree - Low	0.2	Drip	0.77	0.26	2199	571	1671
Tree - Mod	0.5	Drip	0.77	0.65	1885	1224	3582
				Totals	4084	1795	5253
Special Landscape A	reas						
				1		0	
				1		0	
				1		0	
				1		0	
				Totals	0	0	
					ETV	VU Total	5253
		М	aximum Allov	ved Wate	er Allowance (MAWA) ^e	5378



City Of Garden Grove
Department Of Public Works

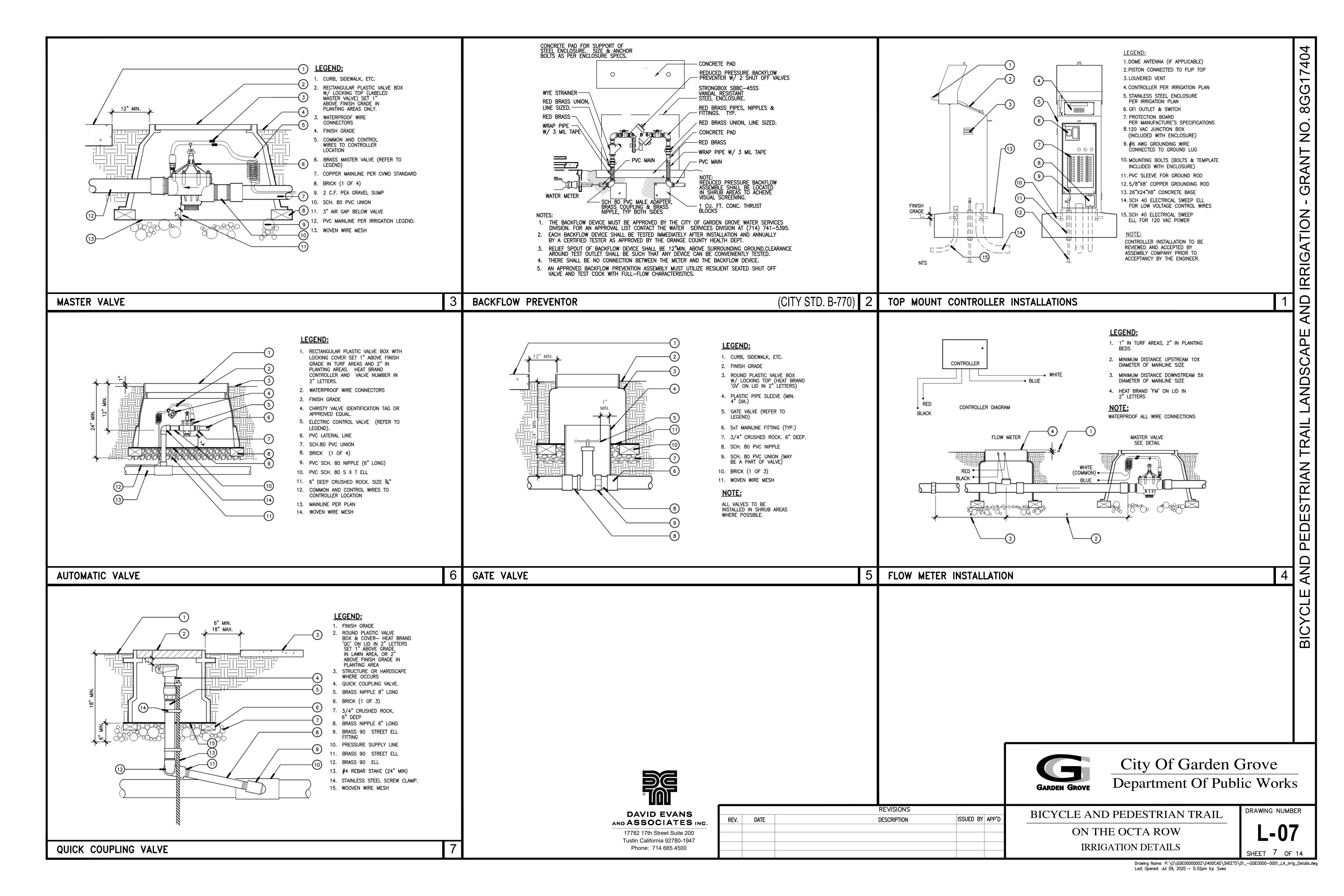
BICYCLE AND PEDESTRIAN TRAIL ON THE OCTA ROW

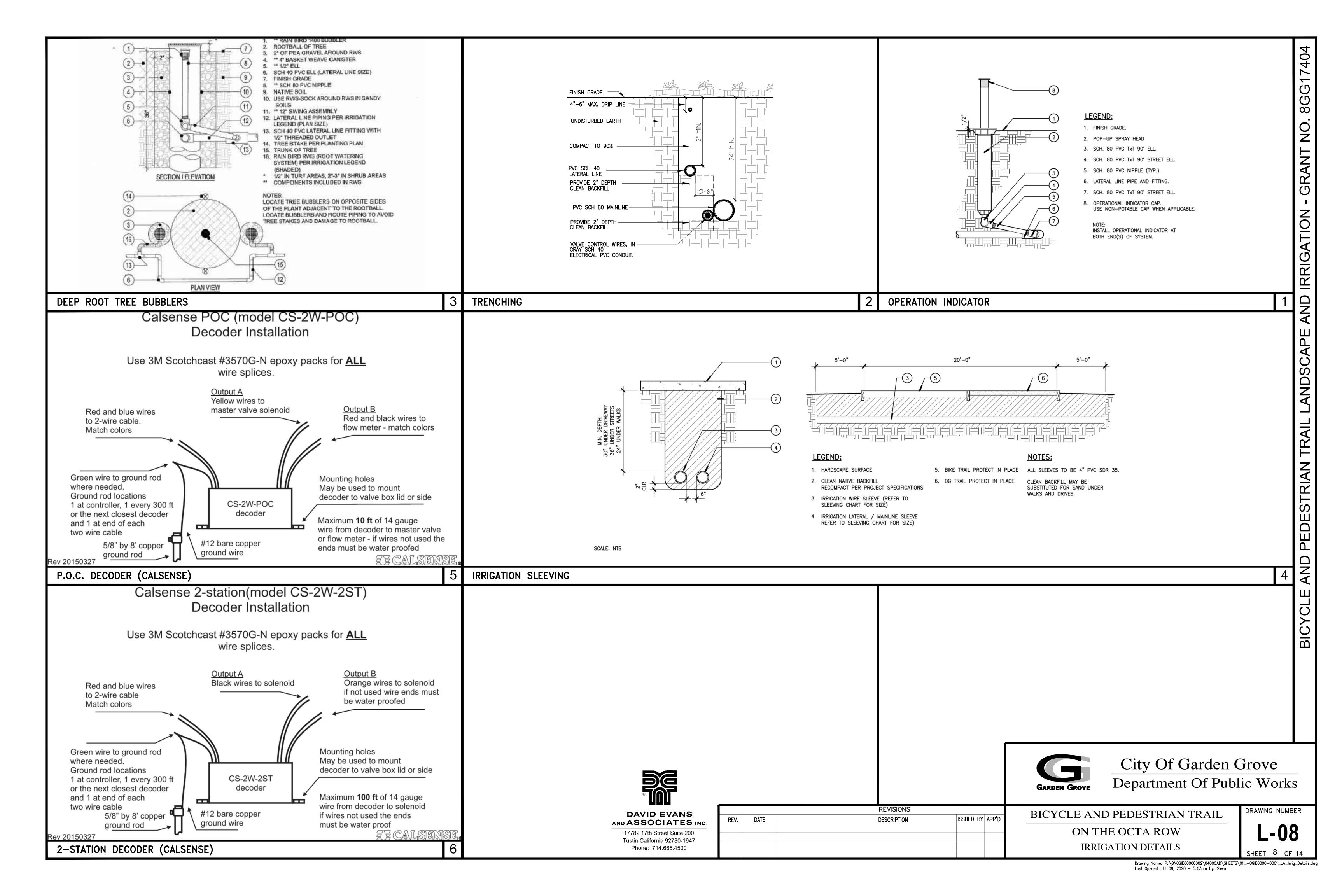
IRRIGATION CALCULATIONS

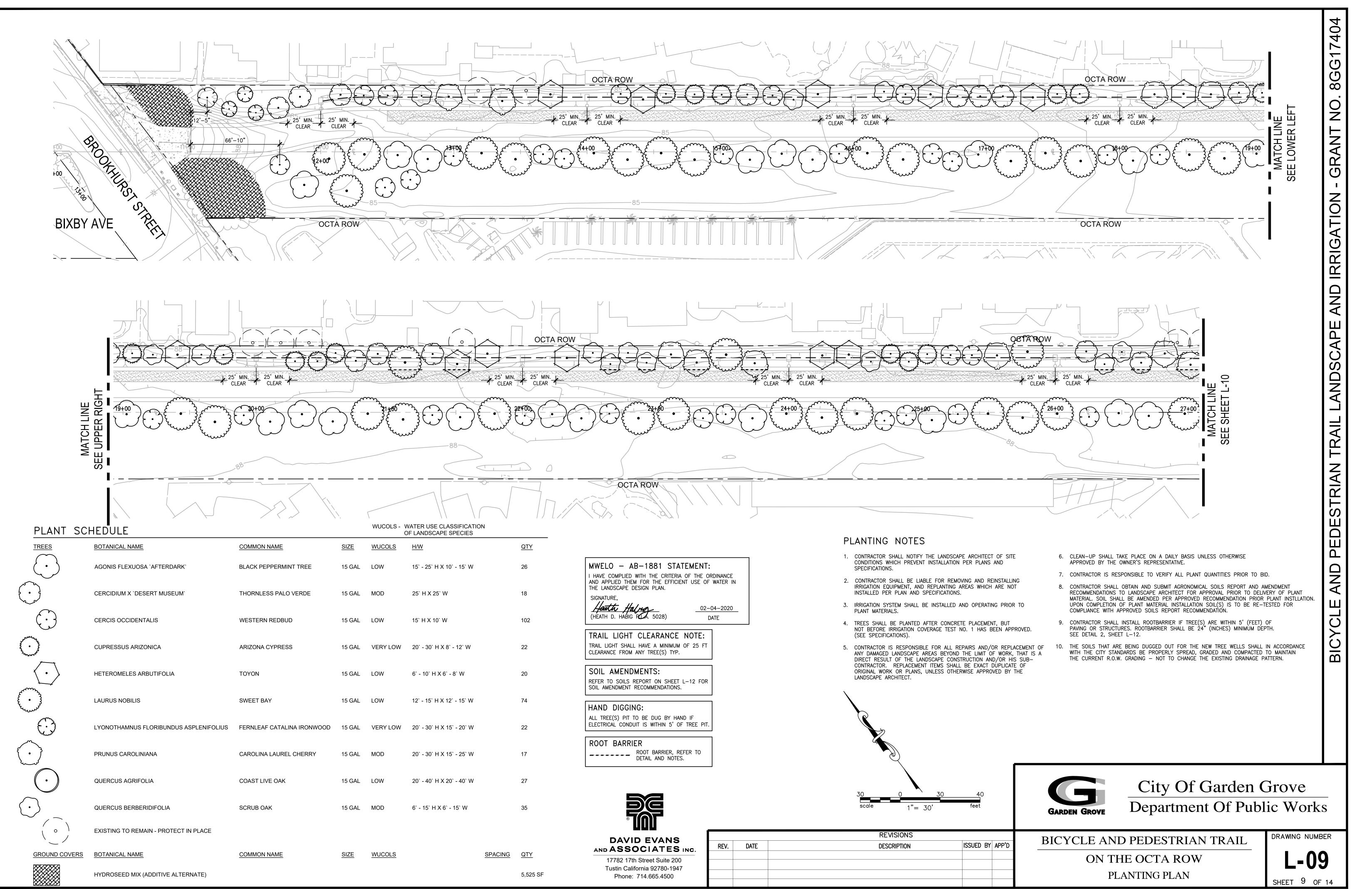
DRAWING NUMBER

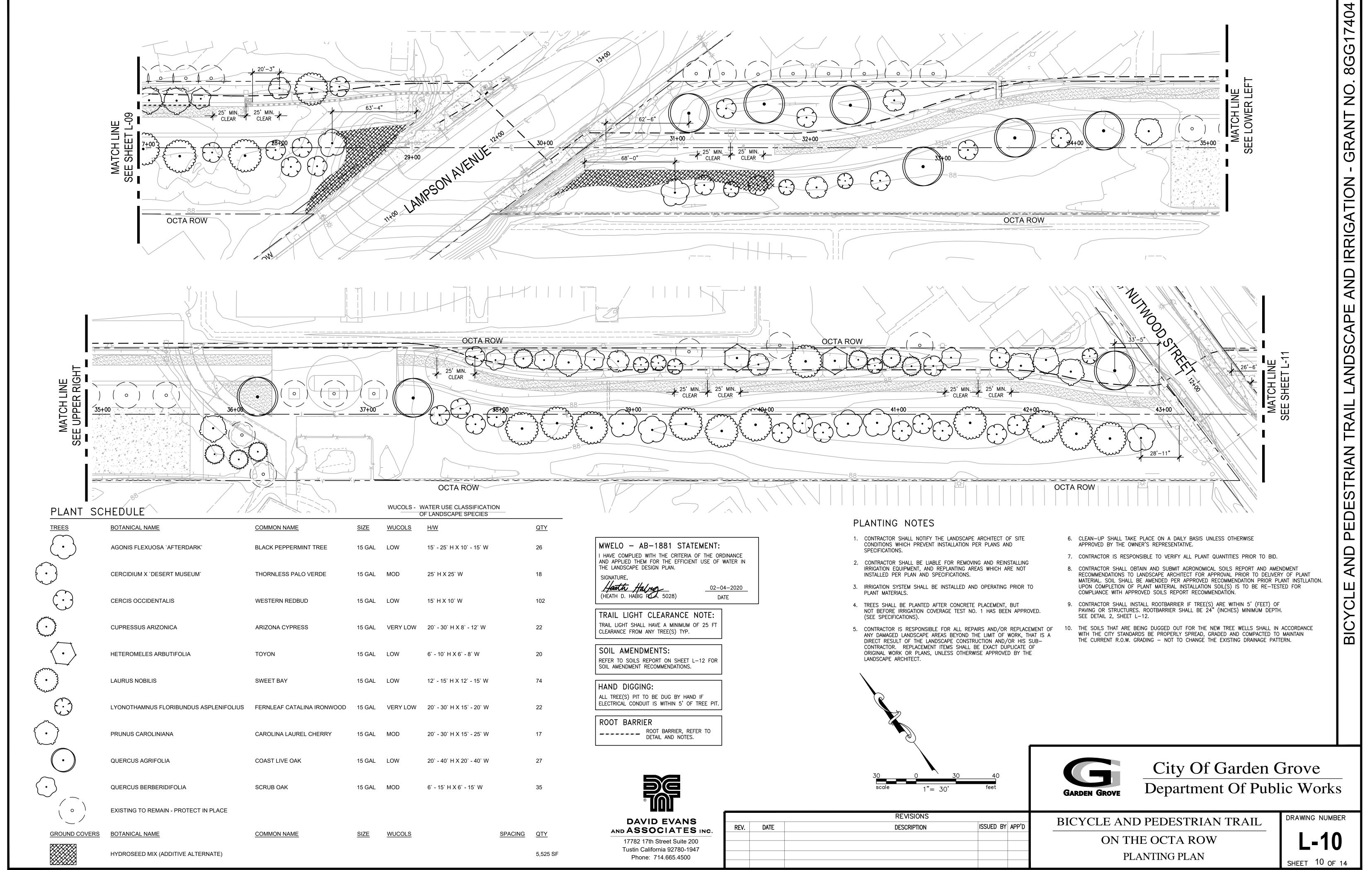
DAVID EVANS AND ASSOCIATES INC. 17782 17th Street Suite 200 Tustin California 92780-1947 Phone: 714.665.4500

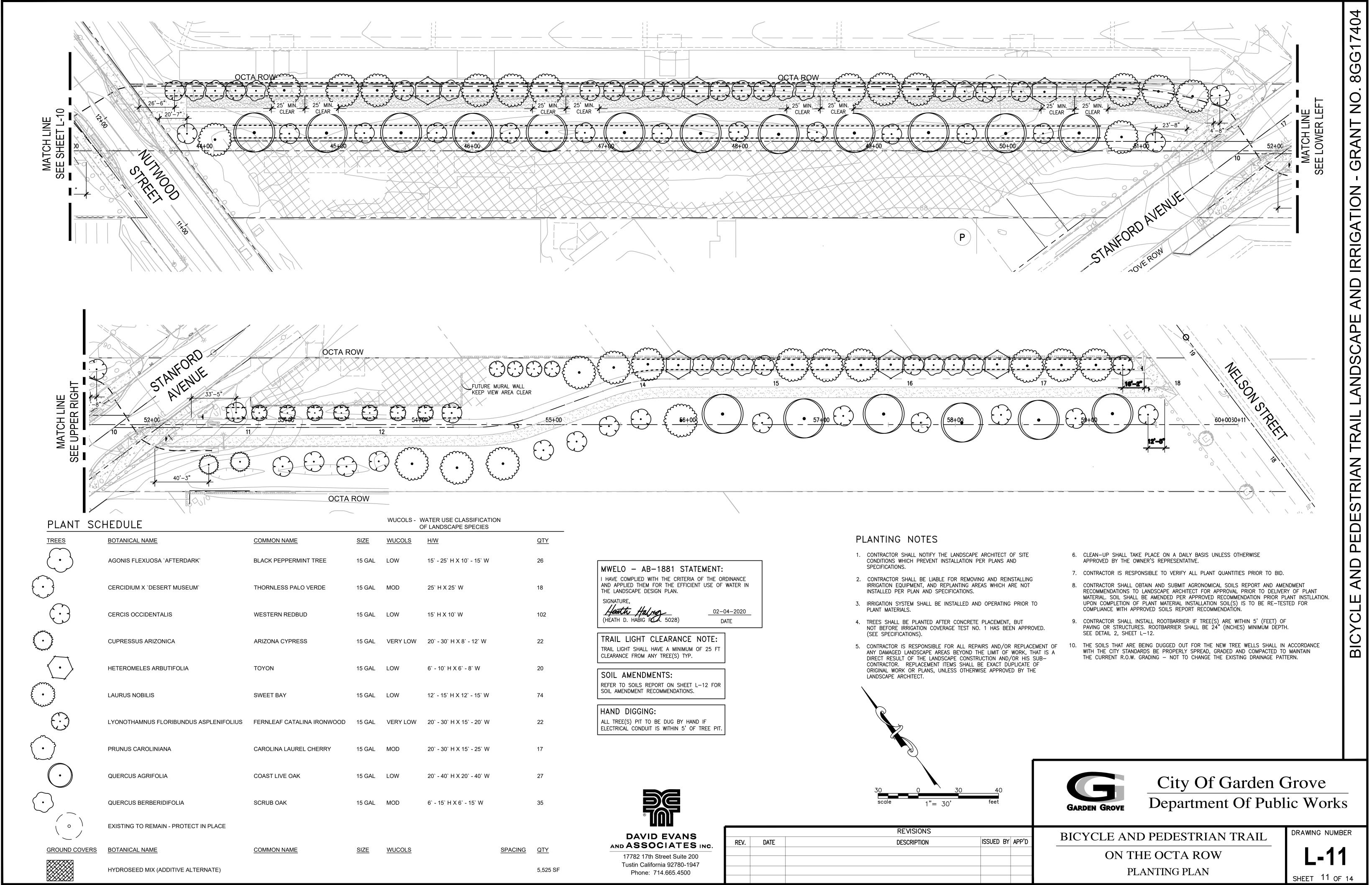
		REVISIONS		
REV.	DATE	DESCRIPTION	ISSUED BY	APP'D













Anaheim Office Lab No: 20-056-0029 March 6, 2020

David Evans & Associates, Inc 17782 17th Street Suite 200 Tustin, CA 92780

Project: Garden Grove Bike Trail Project

Attached are the results of the analyses performed on four soil samples that were collected from the above-mentioned project site by the client and received by our laboratory on 2/25/2020. These samples were analyzed for nutrient levels and agricultural suitability in preparation for planting trees.

Analytical Results & Comments

The reaction of the #4 soils is slightly acidic at 6.5 and the reaction of the #3 sample is slightly alkaline at 7.4. These levels are in the preferred range for most plants and no pH adjustment is recommended in these locations. Free lime is favorably absent.

The reaction of the #1 and #3 soils is moderately alkaline with readings of 7.7 and 8.1 on the pH scale, which could cause some plants to show yellowing of foliage beginning with the younger growth and possibly poor vigor. Free lime is favorably absent in these samples allowing for downward pH adjustment. (Incorporating soil sulfur and iron sulfate into the tree backfill will adjust the pH downward to the depth of incorporation. Downward pH adjustment would happen slowly in both areas and plants that are selected for these two areas of the project should be tolerant of alkaline soil conditions.

Salinty (ECe), soluble sodium, and boron are safely low in all four samples. The safely low sodium adsorption ratio (SAR) values indicate that sodium is properly balanced by calcium and magnesium in regards to its effect on soil structure and water infiltration.

In terms of fertility, nitrogen is low optimum in #3. Phosphorus is sufficient in #4 while low elsewhere. Potassium is sufficient in all but the #3 sample. Calcium is sufficient in all but the #1 sample. Magnesium is sufficient in all four samples. Copper is abundant in #4 while sufficient elsewhere. Zinc is sufficient in #2 and #4. Manganese is moderately low in #2. Iron is sufficient in #4. The remaining major and minor nutrients are low.

> 4741 East Hunter Ave., Ste. A Anaheim CA 92807 (714) 282-8777 W (714) 282-8575 fax www.waypointanalytical.com

> > Page 1 of 7



David Evans & Associates, Inc.

March 6, 2020 Maintenance Fertilization

Joe Kiefer

For tree and shrub plantings, uniformly broadcast sulfur coated urea at the rate of 5 lbs. per 1000 sq. ft. The first application should occur approximately 60 days after planting, with repeat applications every 120 days or as growth and color dictate. In early fall and spring, substitute a complete fertilizer such as 16-6-8, or equal, for the sulfur coated urea at the rate of 6 lbs. per 1000 sq. ft. to ensure continuing supplies of phosphorus and potassium. Follow each fertilization with a thorough irrigation. When plants have become well established, fertilizer applications can be less frequent.

As noted above, some of the micronutrients are below optimum. When these nutrients are low, especially in an alkaline soil, deficiencies can sometimes show in the plants. If deficiencies show once plants have become established, they may be addressed upon the first sign of deficiency. Symptoms of manganese deficiency may be seen as a general loss of color in the young leaves, followed by yellowing between veins and brownish-black spots appearing. Iron and zinc deficiency symptoms are often characterized by yellow, almost white, interveinal chlorosis on the youngest growth. If these symptoms are apparent once plants are established, then an application of iron, zinc, and/or manganese chelate at the manufacturer's label rate may improve appearance. Chelates are generally more effective on alkaline soils than some of the other forms of trace elements.

If we can be of any further assistance, please feel free to contact us.

4741 East Hunter Ave., Ste. A Anaheim CA 92807 (714) 282-8777 (714) 282-8575 fax www.waypointanalytical.com

Page 3 of 7



Page 2 David Evans & Associates, Inc.

Recommendations

Backfill Preparation

Uniformly blend the following with the top 12 inches only of the backfill soil.

Materials	Amount per cu. yd.	Sample location(s)
Soil Sulfur	1 lb.	#1 & #3
Iron sulfate*	1.5 lbs.	#1 & #3
Iron sulfate*	1 lb.	#2
Gypsum	1.5 lbs.	#1
Plant Tablets	See Below**	All Locations

*Handle iron sulfate with caution since it will severely stain wet concrete and hardscape.

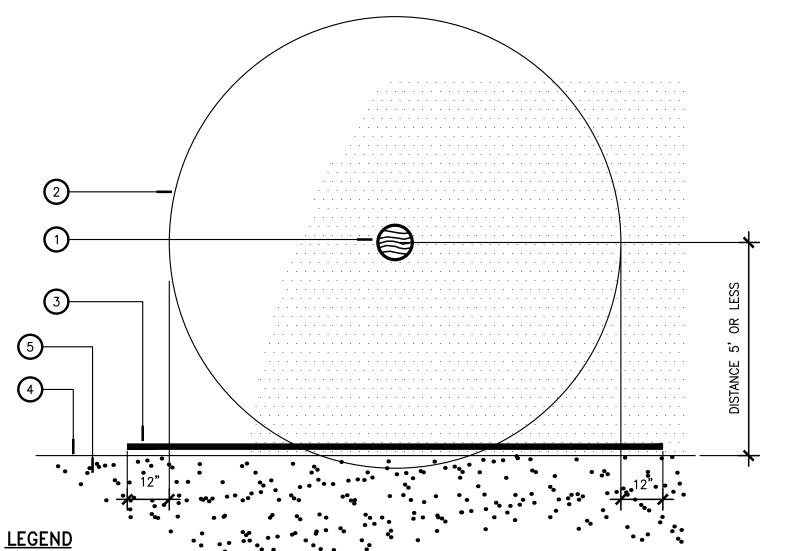
** Place slow release fertilizer tablets in the <u>upper 12 inches</u> of backfill at manufacturer's recommended

Tree and Shrub Planting Guidelines

- . Excavate planting pits at least twice the diameter of the rootball.
- The top of the rootball should be at or slightly above final grade. 3. Organic material is not required in the backfill; however, if you wish, the amended surface soil or a soil
- blend consisting of no more than 20% by volume organic matter can be placed in the upper 12 inches of backfill only. Soil below this depth should not contain any added organic matter because of the threat of plant disease and/or anaerobic soil conditions developing.
- 4. Do not cover the original rootball with other soil. Ideally, a temporary soil berm is often constructed around the outer edge of the rootball to help channel water into the rootball and then into surrounding soil until roots are established in the backfill and the rootball is no longer the sole source of water for the
- 5. Ideally, a weed and turf free zone, preferably 2-3 ft. in diameter, should be maintained just beyond the diameter of the planting hole. A 2-4 inch deep layer of coarse mulch can be placed around the

tree or shrub; mulch should be kept a minimum 4-6 inches from the trunk.

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1. TREE TRUNK CENTER

2. EXTENT OF TREE CANOPY

3. ROOT BARRIER - LENGTH OF ROOT BARRIER SHALL BE THE ANTICIPATED MATURE TREE CANOPY DIAMETER PLUS 2' MANUFACTURER: DEEP ROOT OR APPROVED EQUAL MODEL: UB 24-2

4741 East Hunter Ave. Suite A

PHONE: (800) 458-7668 TOP OF BARRIER SHALL BE SET FLUSH WITH TOP OF TREE BACKFILL

- 4. EDGE OF PAVING
- 5. PAVING

2 x DIAMETER OF ROOTBALL FOR 24" BOX TREES OR SMALLER

LEGEND:

- 1. 'CINCH-TIE' BY V.I.T. CO. (800) 729-1314
- 2. LODGEPOLE PINE STAKE IMPREGNATED WITH EPA APPROVED MATERIAL. 2-1/2" DIA. x12' LONG FOR 24" BOX AND SMALLER.
- 3. 2" LAYER OF MULCH OR DECOMPOSED GRANITE WHERE OCCURS. 4. TOP OF ROOT BALL TO BE 1" ABOVE

8GG17404

GRANT

IRRIGATION

AND

AND PEDESTRIAN

BICYCLE

- FINISH GRADE.
- 5. 6" WATERING BASIN BERM (TEMPORARY)
- FINISH GRADE

ROOTBALL

- 8. 7 GRAM PLANTING TABLET
- -16 PER 24" BOX -20 PER 36" BOX -24 PER 48" BOX -36 PER 60" BOX
- 9. NATIVE SUBGRADE
- 10. BACKFILL MIX- SEE SPECS

David Evans & Associates Inc 17782 17th Street

0.22

0.3 meq/L

14 ppm

15 ppm

419 ppm

0 ppm

Structure and water infiltration of mineral soils potentially adversely affected at SAR values higher than 6

Suite 200 Tustin, CA 92780

Sample ld: #4

Chloride (CI)

Bicarbonate (HCO3)

Phosphorus (P) - Olsen

Calcium - sat. ext.

Boron (B) - sat. ext.

Sulfate - sat. ext.

Potassium - sat. ext. 0.3 meq/L

 Magnesium (Mg)
 63 ppm

 Magnesium - sat. ext.
 0.7 meq/L

Cu, Zn, Mn and Fe were analyzed by DTPA extract

MIN. TWO TIES (TOP & BOTTOM) REQUIRED. USE THIRD TIE WHEN NECESSARY TO HOLD TREE IN UPRIGHT POSITION. TIES TO BE SECURED TO AVOID SLIPPAGE (WRAP STAKE TO FORM FIGURE EIGHT). NAIL W/ (1) GALV. NAIL THROUGH EACH TIE INTO

Garden Grove Bike Trail Project

SATURATION EXTRACT - PLANT SUITABILITY

Test Result Strongly Moderately Slightly Neutral Slightly Moderately Strongly Qualitating Alkaline Alkaline Alkaline Lime

EXTRACTABLE NUTRIENTS

4741 East Hunter Ave. Suite A

www.waypointanalytical.com SOIL ANALYSIS

Cust No:

Lab Number :

Date Printed: 03/06/2020

Date Received : 02/25/2020

4 of 4

12864

6 ppm

NH4-N

8 ppm

28 meq/kg

Main 714-282-8777 ° Fax 714-282-8575

ROOT BARRIER DETAIL - PLAN VIEW TYPICAL DOUBLE STAKE TREE

Garden Grove Bike Trail Project

David Evans & Associates Inc 17782 17th Street

Suite 200 Tustin, CA 92780

4741 East Hunter Ave. Suite A

Main 714-282-8777 ° Fax 714-282-8575

Anaheim, CA 92807

www.waypointanalytical.com SOIL ANALYSIS

Cust No:

Lab Number :

20-056-0029

3 of 4

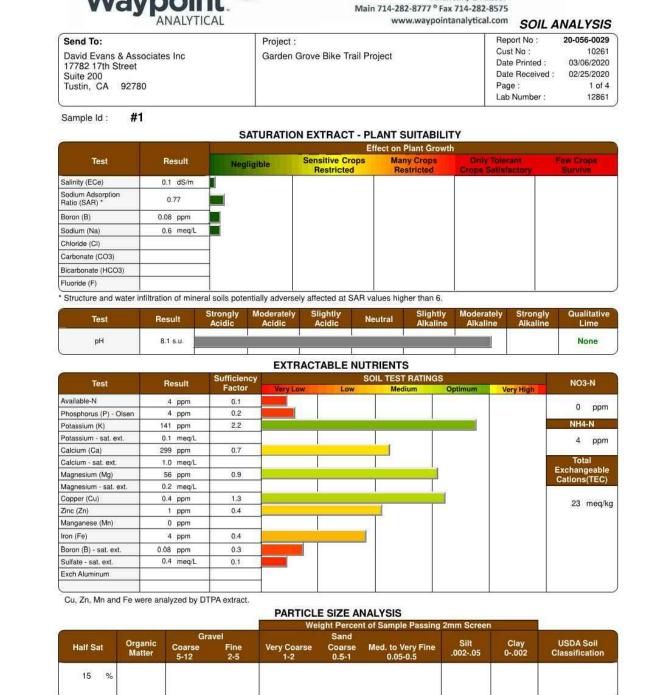
12863

None

NO3-N

Date Printed: 03/06/2020

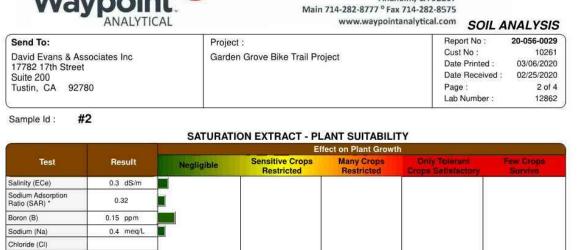
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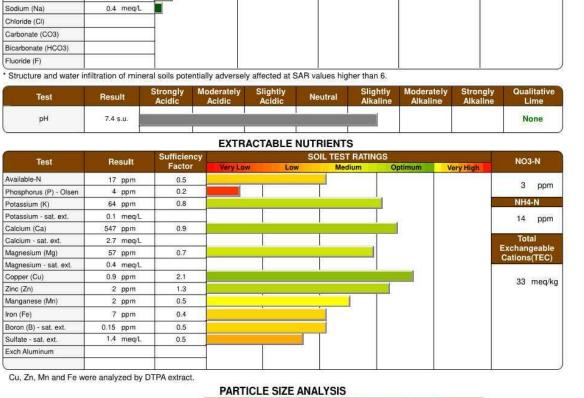


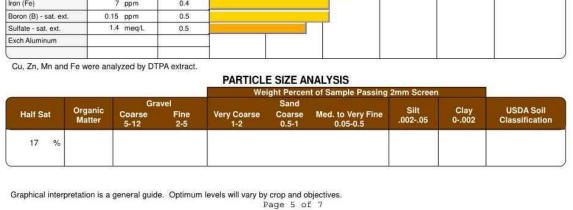
NELSON ST TO STANFORD AVE

Graphical interpretation is a general guide. Optimum levels will vary by crop and objectives. Page $\,4\,$ of $\,7\,$

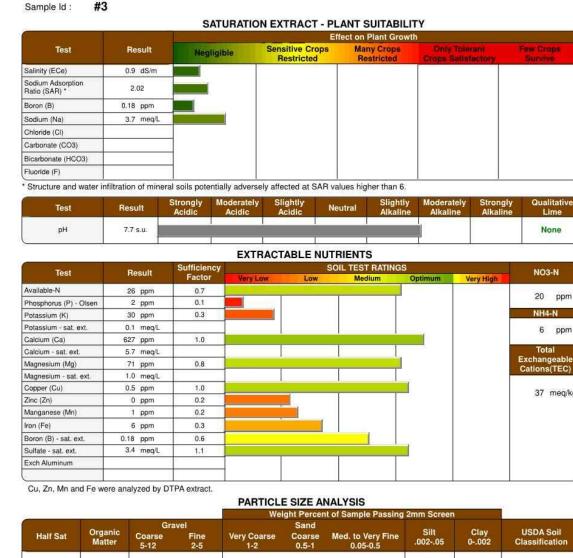
4741 East Hunter Ave. Suite A

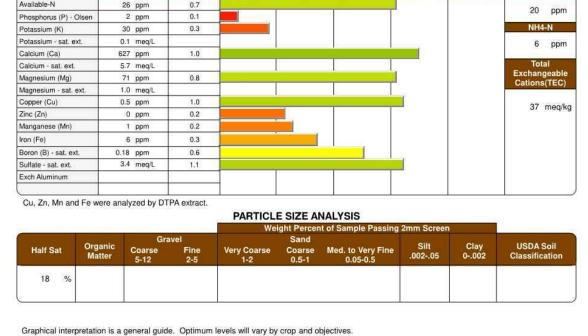


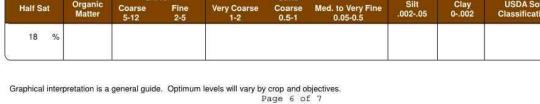




STANFORD AVE TO NUTWOOD ST







NUTWOOD ST TO LAMPSON AVE



LAMPSON AVE TO BROOKHURST ST

PARTICLE SIZE ANALYSIS

SOILS REPORT



Phone: 714.665.4500

DAVID EVANS DATE AND ASSOCIATES INC. 17782 17th Street Suite 200 Tustin California 92780-1947

REVISIONS DESCRIPTION ISSUED BY APP'D

City Of Garden Grove Department Of Public Works

BICYCLE AND PEDESTRIAN TRAIL ON THE OCTA ROW PLANTING DETAILS

DRAWING NUMBER L-12

Drawing Name: P:\G\GGIE00000002\0400CAD\SHEETS\01_-GGIE0000-0001_LA_PIt_Details.dwg

SHEET 12 OF 14 Last Opened: Jul 09, 2020 - 5:13pm by: Sxwa

1.01 SCOPE OF WORK

- WORK COVERED BY THIS SECTION CONSISTS OF FURNISHING ALL LABOR, EQUIPMENT, SUPPLIES, AND MATERIALS, UNLESS OTHERWISE SPECIFIED, AND IN PERFORMING ALL OPERATIONS NECESSARY FOR THE INSTALLATION OF A COMPLETE AND OPERABLE ELECTRICAL SYSTEM AS REQUIRED BY THESE SPECIFICATIONS AND AS INDICATED ON THE
- B. THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND SPECIFICATIONS IN A MANNER TO BE FULLY COGNIZANT OF ALL WORK REQUIRED UNDER THIS SECTION.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS UNLESS OTHERWISE ARRANGED AND SCHEDULE ALL REQUIRED INSPECTIONS FOR THE EXECUTION OF THE WORK UNDER THIS CONTRACT.

1.02 GENERAL REQUIREMENTS

WORK DONE UNDER THIS SECTION SHALL COMPLY WITH THE LATEST EDITION OF THE CALIFORNIA ELECTRICAL CODE NEC (NATIONAL ELECTRICAL CODE), THE STATE OF CALIFORNIA TITLE 24, THE STATE BUILDING STANDARDS, (OSHA) OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, AND TO ANY APPLICABLE LOCAL JURISDICTIONAL REQUIREMENTS. IN CASE OF CONFLICT BETWEEN REQUIREMENT, THE MOST RESTRICTIVE SHALL APPLY.

1.03 ELECTRICAL CONTRACTOR'S RESPONSIBILITY

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COMPLETE SET OF DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL CHECK THE DRAWINGS OF THE OTHER TRADES AND SHALL CAREFULLY READ THE ENTIRE SPECIFICATIONS AND DETERMINE HIS RESPONSIBILITIES.
- B. BEFORE SUBMITTING THE BID, THE ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE AND FULLY ACQUAINT HIMSELF WITH EXISTING CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL THE EQUIPMENT AND ASSOCIATED WIRING IN SUCH A MANNER AS TO CONFORM WITH EXISTING LAYOUT, AVOID OBSTRUCTIONS, AND MEET APPLICABLE CODE REQUIREMENTS.
- THE INTENT OF THESE DRAWINGS IS TO DESCRIBE A COMPLETE AND OPERABLE SYSTEM. WHERE EXISTING CONDITIONS DIFFER FROM DRAWINGS, ADJUSTMENT SHALL BE MADE AND ALLOWANCES INCLUDED FOR ALL NECESSARY EQUIPMENT TO COMPLETE ALL PARTS OF THE DRAWINGS AND SPECIFICATIONS. BRING ANY QUESTIONS TO THE ENGINEER'S ATTENTION PRIOR TO BIDDING.
- WHEREVER A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT, DEVICES. CIRCUIT BREAKERS, ETC., ARISES ON THE DRAWING AND/OR SPECIFICATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITION NOTED ON DRAWINGS AND/OR IN SPECIFICATIONS TO ENSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE OWNER AND ENGINEER.

1.04 WORK NOT INCLUDED

A. CERTAIN LABOR, MATERIALS, OR EQUIPMENT MAY BE FURNISHED UNDER OTHER CONTRACTS BY THE OWNER. WHEN SUCH IS THE CASE, THE EXTENT, SOURCE, AND DESCRIPTION OF THESE ITEMS WILL BE INDICATED ON THE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS. UNLESS OTHERWISE NOTED, ALL LABOR, MATERIALS AND EQUIPMENT FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL WORK SHALL BE PROVIDED UNDER THIS SECTION OF THESE SPECIFICATIONS.

1.05 SPECIAL REQUIREMENTS

THE DRAWINGS INDICATE GENERAL ARRANGEMENT OF CIRCUITS, OUTLETS, LOCATIONS OF MOTOR CONTROLLERS WITH DISCONNECTS, PANELBOARDS, CONDUIT ROUTING, AND OTHER WORK. INFORMATION SHOWN ON THE DRAWINGS IS ESSENTIALLY DIAGRAMMATIC: HOWEVER. RECIRCUITING OR RELOCATING ELECTRICAL EQUIPMENT WILL NOT BE PERMITTED WITHOUT SPECIFIC WRITTEN APPROVAL OF THE ENGINEER.

1.06 SUBMITTALS

- AFTER AWARD OF THE CONTRACT AND BEFORE ANY MATERIALS ARE DELIVERED TO THE JOB SITE, A COMPLETE LIST OF ALL MATERIALS PROPOSED TO BE FURNISHED AND INSTALLED UNDER THIS SECTION MUST BE SUBMITTED TO THE **ENGINEER**
- SUBMIT TO THE ENGINEER FOR APPROVAL ONE PRINT AND ONE REPRODUCIBLE OF ALL LIGHTING FIXTURES, SWITCHGEAR, PANELBOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS, CONDUIT, CONDUCTORS, PULLBOXES, AND MOTOR STARTERS. SHOP DRAWINGS SHALL INCLUDE MANUFACTURER'S PRINTED INFORMATION FOR EACH OF THESE ITEMS IDENTIFIED ON THE DRAWINGS. THE INFORMATION SHALL INCLUDE, AS MINIMUM, OVERALL DIMENSIONS, WEIGHT, PHASE, VOLTAGE RATINGS, WIRING DIAGRAMS, AND NAMEPLATE DATA

1.07 STANDARDS AND MATERIALS

- A. ALL MATERIALS SHALL CONFORM WITH THE CURRENT APPLICABLE INDUSTRY STANDARDS, NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION). ANSI (AMERICAN NATIONAL STANDARDS INSTITUTE). IPCEA (INSULATED POWER CABLE ENGINEERS ASSOCIATION), IEEE (INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS), NATIONAL ELECTRICAL SAFETY CODE.
- B. UNLESS OTHERWISE INDICATED, ALL MATERIALS SHALL BE UNDERWRITERS LABORATORIES LISTED AND LABELED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
- WORKMANSHIP AND NEAT APPEARANCE SHALL BE AS IMPORTANT AS THE ELECTRICAL MECHANICAL EFFICIENCY. DEFECTIVE AND DAMAGED MATERIALS SHALL BE REPLACED OR REPAIRED PRIOR TO FINAL APPROVAL AND ACCEPTANCE. THE DRAWINGS AND SPECIFICATIONS TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT THAN CODES, STATUTES, OR ORDINANCES IN EFFECT. APPLICABLE CODES, STANDARDS, ORDINANCES, AND STATUTES TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT OR CONFLICT WITH THE DRAWINGS OR SPECIFICATIONS.

1.08 DELIVERY AND STORAGE OF MATERIALS

THE CONTRACTOR SHALL RETAIN IN HIS POSSESSION AND SHALL BE RESPONSIBLE FOR ALL PORTABLE AND DETACHABLE PARTS OF PORTIONS OF INSTALLATIONS SUCH AS FUSES, KEY LOCKS, ADAPTERS, BLOCKING CLIPS, AND INSERTS UNTIL FINAL COMPLETION OF WORK. THESE PARTS SHALL BE DELIVERED TO THE OWNER UPON COMPLETION

PART 2 PRODUCTS

2.01 EQUIPMENT AND MATERIALS

- A. ALL MATERIALS FURNISHED AND INSTALLED UNDER THIS CONTRACT SHALL BE NEW, FREE FROM DEFECTS, AND SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE OF THE WORK. SHOULD ANY TROUBLE DEVELOP DURING THEIR PERIOD DUE TO DEFECTIVE MATERIALS OR FAULTY WORKMANSHIP, THE CONTRACTOR SHALL FURNISH ALL NECESSARY MATERIALS AND LABOR TO CORRECT THE TROUBLE WITHOUT ANY COST TO THE OWNER. ANY DEFECTIVE MATERIAL OR INFERIOR WORKMANSHIP NOTED AT THE TIME OF INSTALLATION SHALL BE CORRECTED IMMEDIATELY TO THE SATISFACTION OF THE OWNER.
- ALL MAJOR EQUIPMENT COMPONENTS SHALL HAVE THE MANUFACTURER'S NAME, ADDRESS, MODEL NUMBER, AND SERIAL NUMBER PERMANENTLY ATTACHED IN A CONSPICUOUS MANNER.

FROM MANUFACTURER CUTSHEET:POLES DESIGNED PER 2013 AASHTO FOR A 110 MPH WIND SPEED AND A 50 YEAR DESIGN LIFE WHEN SUPPORTING A COMBINED LOADING OF 26 SQ. FT. EPA AND 600 LBS. WEIGHT MOUNTED AT THE TOP OF THE POLE.

AMPERE

CONDUIT

CONCRETE

CENTERLINE

COPPER

DOWN

EACH

DRAWING

CONC

DWG

GFCI

GND

KCMIL

KW

KVA

MFR

MAX

NEMA

CONDUIT ONLY

ABOVE FINISHED FLOOR

ABOVE FINISHED GRADE

AMERICAN WIRE GAUGE

ELECTRICAL CONTRACTOR

ELECTRICAL METALLIC TUBING

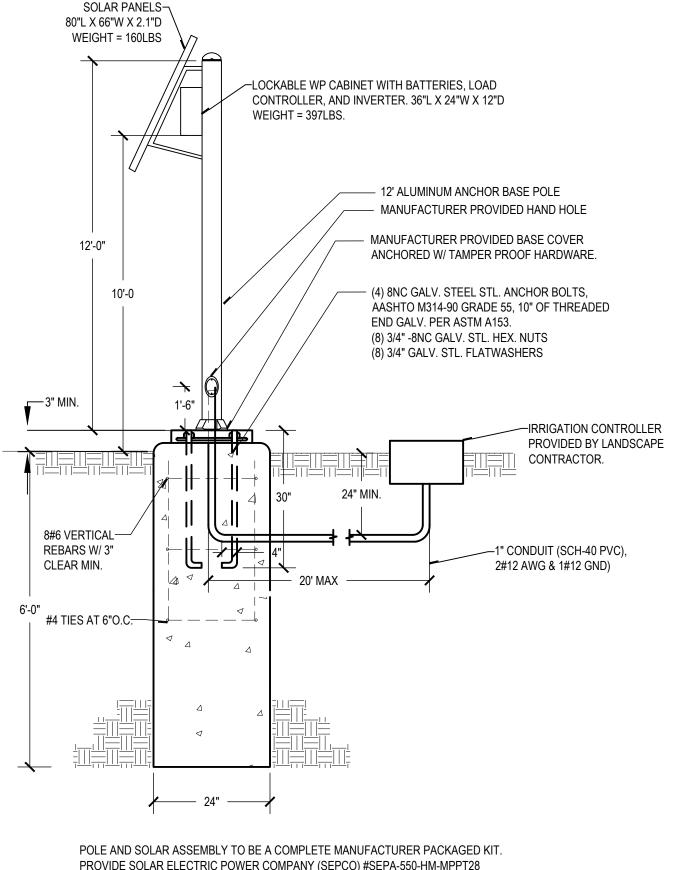
MINIMUM M/M METER AND MAIN SECTION

NEW, TO BE FURNISHED AND INSTALLED BY

CONTRACTOR

NOT IN CONTRACT

AMPERE INTERRUPTING CAPACITY



POLE DETAIL (NTS)

PROVIDE SOLAR ELECTRIC POWER COMPANY (SEPCO) #SEPA-550-HM-MPPT28 -INV3(300W)-PZ5-AL-AB-12' OR APPROVED EQUAL. REFER TO IRRIGATION PLANS FOR LOCATIONS. INSTALL POLE ASSEMBLY WITHIN 20FT OF IRRIGATION CONTROLLER AND CLEAR OF ALL OVERHEAD OBSTRUCTIONS (EX: TREES). SYSTEM SHALL BE 5-YEAR MAINTENANCE FREE AND INCLUDE WARRANTY UP TO 25 YEARS.

LOAD CALO	CULATIONS - IRRIGATION CONTROLLE	R
DEMAND:	CONTROLLER (ET-2000e + GR)	6.7 WATTS
	CONTROLLER RUNTIME	24 HRS/DAY
	STATIONS (QUANTITY 24)	336 WATTS
	STATIONS RUNTIME	0.5 HRS/DAY
	TOTAL DEMAND	329 WATT-HRS/DAY
SUPPLY:	2 X 300W SOLAR PV CELLS	550 WATTS
	SUN EXPOSURE	4 HRS/DAY
	BATTERY CHARGE	2200 WATT-HRS/DAY

ABBREVIATIONS

TS	NOT TO SCALE
OC .	ON CENTER
)D	OUTSIDE DIAMETER
1	POLE
В	PULL BOX
F	POWER FACTOR
NL	PANEL
OC	POINT OF CONNECTION
Р	POWER POLE
WR	POWER
VC	POLYVINYL CHLORIDE

- QTY QUANTITY REQD REQUIRED REQMT REQUIREMENT RGS RIGID GALVANIZED STEEL RMC RIGID METALLIC CONDUIT
- FULL LOAD CURRENT GROUND FAULT CIRCUIT INTERRUPTER ISOLATED/INSULATED GROUND SPECIFICATIONS SHORT CIRCUIT CURRENT AVAILABLE IN RMS TYPICAL SYMMETRICAL AMPERES
- THOUSAND CIRCULAR MILS UON KILOWATT KILO VOLT KILO VOLT-AMPERE MANUFACTURER MAXIMUM
- NATIONAL ELECTRICAL CODE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
- RIGID NONMETALLIC CONDUIT UNDERWRITERS LABORATORY UL VOLT, VOLTAGE VOLT-AMPERE WATT-HOUR WEATHERPROOF WEATHERTIGHT WIREWAY
- UNLESS OTHERWISE NOTED FOUR-WIRE
 - THREE-WIRE DIAMETER, PHASE NUMBER °C DEGREE CELSIUS

- **GENERAL NOTES** ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST CALIFORNIA CODE OF REGULATIONS (CCR),
- NATIONAL ELECTRICAL CODE EDITION AND ALL APPLICABLE LOCAL CODES AND REGULATIONS. WHERE WIRE SIZES ARE INDICATED ON PLANS, FOR INDIVIDUAL CIRCUITS, THE WIRE SIZE INDICATED SHALL APPLY TO
- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OR OTHER TRADES RELATING TO WORK TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED. MAINTAIN HEADROOM AND MINIMUM CODE REQUIRED WORKING CLEARANCES AT ALL
- FURNISH PULL STRING IN EACH RACEWAY RUN OVER 10' IN LENGTH, IN WHICH PERMANENT WIRING IS NOT INSTALLED.
- PROVIDE PULL BOXES WHEREVER NECESSARY TO FACILITATE PULLING OF CONDUCTORS. COORDINATE LOCATIONS OF BOXES WITH OTHER TRADES TO AVOID CONFLICT. PULL BOXES SHALL BE ACCESSIBLE. THE SIZE OF PULL BOX SHALL COMPLY WITH N.E.C. REQUIREMENTS.
- 6. ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT INCLUDING THOSE THAT ARE EXPOSED TO OUTSIDE ENVIRONMENT (UP TO 16') SHALL BE WEATHERPROOF TYPE, NEMA 3R.
- ALL ELECTRIC MATERIAL SHALL BE LISTED BY "UL" FOR THE TYPE OF APPLICATION AND "UL" LABEL SHALL APPEAR ON ALL ELECTRICAL EQUIPMENT.
- ALL DISTRIBUTION AND CONTROL EQUIPMENT (SUCH AS CB's, SWITCHES, CONTACTORS, ETC.), TERMINATIONS SHALL BE
- FULLY RATED PER UL AS FOLLOWS:
- a. 125A OR LESS: 60°C OR MORE: b. MORE THAN 125A: 75°C OR MORE.

THE COMPLETE CIRCUIT, UNLESS OTHERWISE NOTED.

- ANY ERRORS, OMISSIONS, OR DESIGN DISCREPANCIES ON PLANS OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ELECTRICAL ENGINEER FOR CLARIFICATION OR CORRECTION PRIOR TO CONSTRUCTION AND PREPARATION OF SUBMITTAL PACKAGES.
- 10. CONDUCTORS SHALL HAVE UNDERWRITER'S LABORATORIES, INC.(UL) LISTED, 600 VOLT INSULATION OF TYPE SPECIFIED BELOW OR ELSEWHERE IN THE SPECIFICATIONS. CONDUCTORS SHALL BE COPPER.

1. BRANCH CIRCUITS - LIGHTING AND POWER.

- a. #10 AWG AND SMALLER, SOLID WIRE TYPE THW OR THHN/THWN, THHW(THHN FOR DRY LOCATION ONLY). b. #8 AWG TO #2 AWG, STRANDED TYPE THW OR THHN/THHW. c. #1 AWG AND LARGER, STRANDED TYPE XHHW.
- 2. FEEDERS: TYPE THW OR THHN/THWN, OR XHHW.
- PROVIDE GREEN INSULATED GROUNDING CONDUCTOR IN EACH RACEWAY INCLUDING CONDUITS, PLUG STRIPS, WIREMOLD. SIZE OF GROUNDING SHALL BE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE ARTICLE 250.
- WIRING METHOD SHALL BE EMT ABOVE GROUND AND MOUNTED IN CONCEALED SPACES AND SCHEDULE-40 PVC FOR UNDERGROUND INSTALLATION. USE RIGID WHEN ENCASED IN CONCRETE OR SUSCEPTIBLE TO DAMAGE.
- 13. USE 10AWG CONDUCTORS FOR 20 AMPERE, 120V BRANCH CIRCUITS LONGER THAN 75 FEET. USE 10AWG CONDUCTORS FOR 20 AMPERE, 277V BRANCH CIRCUITS LONGER THAN 200 FEET.
- UNLESS OTHERWISE INDICATED, SHARING OF NEUTRAL/GROUNDED CONDUCTORS AMONG SINGLE PHASE BRANCH CIRCUITS OF DIFFERENT PHASES INSTALLED IN THE SAME RACEWAY IS NOT PERMITTED. PROVIDE DEDICATED NEUTRAL/GROUNDED CONDUCTOR FOR EACH INDIVIDUAL BRANCH CIRCUIT.

APPLICABLE CODES

- 2019 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
- 2. 2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R. (IBC WITH AMENDMENTS)
- 2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (NEC WITH AMENDMENTS)
- 4. 2019 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R. (UMC WITH AMENDMENTS)
- 5. 2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R. (UPC WITH AMENDMENTS)
- 6. 2019 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R. (IFC WITH AMENDMENTS)
- 7. 2019 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.
- 2019 TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.
- 2019 CALIFORNIA ENERGY CODE (PART 6, TITLE 24 C.C.R.)
- 10. 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBSG), PART 11, TITLE 24 C.C.R.

NOTE TO CONTRACTOR

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE SAME.

SHEET NUMBER	SHEET TITLE
E1.1	ELECTRICAL LEGENDS & NOTES
E2.1	ELECTRICAL SPECIFICATIONS

ELECTRICAL LEGENDS & NOTES



City Of Garden Grove
Department Of Public Works



MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



BATTERIES: 6 X 112 AMP-HOURS (12VDC)

INVERTER 1 X 300 WATTS



8064 WATT-HRS/DAY

300 WATTS (120VAC OUTPUT)

		REVISIONS		
REV.	DATE	DESCRIPTION	ISSUED BY	APP'D

BICYCLE AND PEDESTRIAN TRAIL

ON THE OCTA ROW

DRAWING NUMBER

SHEET**13** OF **14**

AND

2.02 CONDUIT

- A. PROVIDE RACEWAYS AS INDICATED ON THE DRAWINGS AND AS HEREIN SPECIFIED, CONDUITS SHALL BE RIGID STEEL "GRC" (THICK WALL) GALVANIZED; ELECTRICAL METALLIC TUBING "EMT" (THIN WALL); FLEXIBLE STEEL, GALVANIZED; LIQUID-TIGHT, FLEXIBLE STEEL CONDUIT WITH GROUND BOND; ALUMINUM CONDUIT; OR SCHEDULE 40 PVC.
- B. ALL EMPTY CONDUITS (CO) SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE INDICATED ON THE DRAWING.
- WHERE CONDUIT CROSSES AN EXPANSION JOINT, PROVIDE APPROVED FITTINGS WHICH ALLOW DEFLECTIONS EQUIVALENT TO TWICE THE MOVEMENT ALLOWED BY THE DESIGN.

2.03 CONDUCTORS

- PROVIDE A COMPLETE SYSTEM OF CONDUCTORS IN RACEWAY SYSTEMS AS SHOWN ON THE DRAWINGS AND THEN
- B. LIGHTING AND POWER CONDUCTORS SHALL BE COPPER, 600 VOLT, TYPE THWN/THHN, NO. 12 MINIMUM UNLESS
- C. CONTROL CONDUCTORS SHALL BE 600V, TYPE THWN/THHN, NO.14 MINIMUM SIZE UNLESS OTHERWISE NOTED.

- A. CONNECTOR, COUPLING, LOCKNUT, BUSHINGS AND CAPS USED WITH RIGID CONDUIT SHALL BE STEEL, THREADED AND GALVANIZED. BUSHINGS SHALL BE INSULATED.
- B. EMT FITTINGS, CONNECTORS AND COUPLINGS SHALL BE STEEL, ZINC, OR CADMIUM PLATED, COMPRESSION TYPE, WITH INSULATED THROAT.
- C. FLEXIBLE STEEL CONDUIT CONNECTORS SHALL BE TWIST-IN-TYPE WITH INSULATED THROAT. THE FINISH SHALL BE
- D. EMT CONDUIT FITTINGS SHALL BE THE COMPRESSION TYPE; SET SCREW FITTINGS SHALL NOT BE USED.

2.05 JUNCTION AND PULL BOXES

- A. FOR INTERIOR DRY LOCATIONS, BOXES SHALL BE GALVANIZED ONE-PIECE DRAWN STEEL, KNOCKOUT TYPE WITH REMOVABLE, MACHINE SCREW SECURED COVERS.
- B. FOR EXTERIOR WET LOCATIONS, BOXES SHALL BE NEMA 3R OR NEMA 4 RATED, GASKET MACHINE SCREW SECURED
- C. INGROUND PULLBOXES SHALL BE CONCRETE ELECTRICAL PULL BOX WITH LID APPROPRIATE FOR INSTALLATION LOCATION. SIZE PULLBOX PER NEC REQUIREMENTS.
- D. ALL BOXES SHALL BE SIZED FOR THE NUMBER AND SIZES OF CONDUCTORS AND CONDUITS ENTERING THE BOX AND

2.15 ELECTRICAL CONNECTIONS

UNLESS OTHERWISE NOTED, ALL WIRING FOR MOTORS, STARTERS, CONTROLS, AND EQUIPMENT SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. WHERE MOTORS FOR MECHANICAL EQUIPMENT ARE FURNISHED BY OTHER DIVISIONS, WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR, EXCEPT WHERE WIRED INTEGRALLY WITH THE EQUIPMENT.

2.16 SUPPORTING DEVICES

ALL EQUIPMENT CONDUITS SHALL BE SUPPORTED, ANCHORED AND BRACED IN ACCORDANCE WITH THE MOST STRINGENT CODES AND REQUIREMENTS. COMPLY WITH CHAPTER 23 OF THE LATEST CBC (CALIFORNIA BUILDING

PART 3 EXECUTION

3.01 WORKMANSHIP AND COMPLETION OF INSTALLATION

EQUIPPED WITH PLASTER RINGS WHERE REQUIRED.

- WORKMANSHIP AND NEAT APPEARANCE SHALL BE AS IMPORTANT AS THE ELECTRICAL AND MECHANICAL EFFICIENCY. DEFECTIVE AND DAMAGED MATERIALS SHALL BE REPLACED OR REPAIRED PRIOR TO FINAL INTERPRETATIONS INCLUDED. ANY DEFICIENCY PERTAINING TO EITHER WORKMANSHIP OR MATERIALS FOUND BY THE INSPECTOR SHALL
- THE CONTRACTOR SHALL MAINTAIN ON JOB SITE A SET OF THE WORKING DRAWINGS WHICH SHALL BE UPDATED DAILY IN DETAIL FOR WORK ACCOMPLISHED. UPON COMPLETION OF THE WORK, A SET OF REPRODUCIBLE CONTRACT DRAWINGS SHALL BE OBTAINED FROM THE GENERAL CONTRACTOR AND ALL CHANGES AS NOTED ON THE RECORD SET OF PRINTS SHALL BE INCORPORATED THEREON WITH RED INK IN A NEAT, LEGIBLE, UNDERSTANDABLE AND PROFESSIONAL MANNER.
- ALL EQUIPMENT AND MATERIAL CONNECTED WITH THIS PROJECT SHALL BE INSTALLED COMPLETE, THOROUGHLY CLEANED, AND ALL RESIDUE REMOVED FROM INSIDE SURFACES. EXTERIOR SURFACES OF ALL MATERIAL AND EQUIPMENT SHALL BE CLEANED AND DELIVERED IN A PERFECT, UNBLEMISHED CONDITION.
- UPON COMPLETION OF THE INSTALLATION AND AS A CONDITION OF ITS ACCEPTANCE FURNISH ONE COPY OF THE FINAL INSPECTION CERTIFICATE TO THE OWNER.

3.02 PREPARATION COORDINATION.

- A. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH ALL OTHER CONTRACTORS FURNISHING LABOR, MATERIALS AND WORK, SO THAT THE WORK AS WHOLE SHALL BE EXECUTED AND COMPLETED WITHOUT CONFLICT OR DELAY.
- EXAMINE THE DRAWINGS AND SPECIFICATIONS AND DETERMINE THE WORK TO BE PERFORMED BY THE ELECTRICAL MECHANICAL AND OTHER TRADES. PROVIDE THE TYPE AND AMOUNT OF ELECTRICAL MATERIALS AND EQUIPMENT NECESSARY TO PLACE THIS WORK IN PROPER OPERATION, COMPLETELY WIRED TESTED AND READY FOR USE. THIS SHALL INCLUDE ALL CONDUIT, WIRE, DISCONNECTS, RELAYS, AND OTHER DEVICES FOR THE REQUIRED OPERATION SEQUENCE OF ALL ELECTRICAL, MECHANICAL, AND OTHER SYSTEMS OR EQUIPMENT.
- PERFORM ALL WORK IN A MANNER WHICH WILL NOT CAUSE UNNECESSARY INCONVENIENCE OR DANGER TO THE OCCUPANTS, NOR INTERFERE WITH THE ACTIVITIES IN THE BUILDING.
- D. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE EACH POWER INTERRUPTION WITH OWNER, AND SHALL PROVIDE AT LEAST TWO WEEKS NOTICE OF PROPOSED INTERRUPTION AND WORK TO BE ACCOMPLISHED.

3.03 TRENCHING AND BACKFILLING

A. PERFORM ALL SUCH TRENCHING AND BACKFILLING IN ACCORDANCE WITH DRAWING DETAILS.

3.04 CORE CUTTING, DRILLING, AND PATCHING

A. NO HOLES WILL BE ALLOWED IN ANY STRUCTURAL MEMBERS WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT OR STRUCTURAL ENGINEER AND GENERAL CONTRACTOR.

3.05 INSTALLATION

- A. WORKMANSHIP IS TO BE NEAT, BY EXPERIENCED WORKMEN WITH ADEQUATE SUPERVISION, AND IN LINE WITH NORMAL INDUSTRY WORK PRACTICES.
- B. MAINTAIN WORKING CLEARANCE AROUND ELECTRICAL EQUIPMENT, IN ACCORDANCE WITH CODE REQUIREMENTS AS A
- C. ALL CONDUIT TO BE RUN CONCEALED UNLESS OTHERWISE NOTED. ALL CONDUITS SHALL BE ROUTED OVERHEAD IN CEILING SPACES. NO CONDUITS SHALL BE PERMITTED IN CONCRETE SLAB, MASONRY WALLS UNLESS SPECIFICALLY SO INDICATED. CONDUIT SHALL BE RUN SO AS NOT TO INTERFERE WITH OTHER PIPING FIXTURES OR EQUIPMENT.
- D. WHERE ALLOWED, EXPOSED CONDUIT RUNS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS, OR INTERSECTION OF VERTICAL PLANES AND CEILINGS.
- E. INSTALL PRODUCTS ACCORDING TO MANUFACTURERS INSTRUCTIONS.
- F. ALL ROTATING ELECTRICAL EQUIPMENT SHALL BE SUPPLIED WITH A FLEXIBLE, LIQUID-TIGHT CONDUIT WITH APPROPRIATE SLACK AND SHALL NOT EXCEED THIRTY-SIX (36) INCHES.
- G. ALL POWER WIRING SHALL BE INSTALLED IN CONDUIT.
- H. PROVIDE CONCRETE BASES FOR LIGHTING POLES..
- I. INSTALL POLES AND PLUMB. 1. PROVIDE SHIMS TO ADJUST PLUMB. 2. GROUT AROUND EACH BASE.

3.06 GROUNDING

- A. ALL EQUIPMENT SHALL BE PROPERLY GROUNDED AS INDICATED ON DRAWINGS AND AS REQUIRED BY THE LATEST EDITION OF APPLICABLE CODES.
- B. FURNISH AND INSTALL ALL GROUNDING CONDUCTORS, CONDUIT AND CLAMPS. THE SIZE OF THE GROUNDING CONDUCTORS SHALL BE NOT LESS THAN THAT SPECIFIED IN THE NEC.
- C. BUILDING GROUNDING SYSTEM RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS.
- D. EACH BRANCH CIRCUIT SHALL BE EQUIPPED WITH CODE SIZE GREEN GROUND, EQUIPMENT WIRE (PER NEC 250-95) (NOT INDICATED ON DRAWINGS) WITHIN THE SAME CONDUIT FOR ALL CIRCUITS OF PANELBOARDS.

3.07 BRANCH CIRCUITS

A. NO MORE THAN THREE BRANCH CIRCUITS PERMITTED IN ONE CONDUIT UNLESS INDICATED OTHERWISE

3.09 PROTECTION

A. USE ALL MEANS NECESSARY TO PROTECT THE WORK AND MATERIALS FROM LOSS DURING AND AFTER INSTALLATION, AND PROVIDE ADEQUATE AND PROPER STORAGE FACILITIES DURING THE PROGRESS OF THE WORK. PROVIDE FOR THE SAFETY AND GOOD CONDITION OF ALL WORK UNTIL FINAL ACCEPTANCE OF THE WORK BY THE OWNER. REPLACE ALL DAMAGE OR DEFECTIVE WORK, MATERIAL, AND EQUIPMENT AT NO EXPENSE TO THE OWNER BEFORE REQUESTING FINAL ACCEPTANCE.

3.10 CLEANING OF EQUIPMENT, MATERIAL, AND PREMISES

- A. SITE SHALL BE LEFT BROOM CLEAN AFTER COMPLETION OF WORK EACH DAY. UPON COMPLETION OF THE WORK, LEAVE THE PREMISES CLEAN OF ALL DIRT AND DEBRIS.
- B. ALL EQUIPMENT AND MATERIAL CONNECTED WITH THIS PROJECT SHALL BE INSTALLED COMPLETE, THOROUGHLY CLEANED, AND ALL RESIDUE REMOVED FROM INSIDE SURFACES. EXTERIOR SURFACES OF ALL MATERIAL AND EQUIPMENT SHALL BE CLEANED AND DELIVERED IN A PERFECT, UNBLEMISHED CONDITION.

3.11 HANDLING OF WIRE AND CABLE

- A. HANDLE WIRE AND CABLE SO AS TO AVOID DAMAGE TO CONDUCTORS AND TAKE EVERY PRECAUTION TO AVOID SHARP BENDING OR SCORING OF THE CABLE. CABLE SHALL NOT BE LAID NOR DRAGGED UPON THE GROUND.
- B. THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND REPLACE AT HIS OWN EXPENSE ALL WIRE AND CABLE DAMAGED DUE TO IMPROPER HANDLING, AND SHALL PAY FOR THE NEW WIRE OR CABLE.

3.12 TESTING AND INSPECTIONS

- A. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND ARRANGE ALL REQUIRED INSPECTIONS FOR THE EXECUTION OF THE WORK UNDER THIS CONTRACT.
- THE CONTRACTOR SHALL REPLACE ALL DAMAGED OR DEFECTIVE EQUIPMENT OR WORK.
- C. ALL CIRCUITS SHALL BE TESTED FOR CONTINUITY AND CIRCUIT INTEGRITY BY THE CONTRACTOR. ADJUSTMENTS SHALL BE MADE FOR CIRCUITS NOT COMPLYING WITH TESTING CRITERIA.
- D. THE CONTRACTOR SHALL FURNISH ALL INSTRUMENTS AND PERFORM ANY ADDITIONAL TESTS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL ALSO CORRECT ALL FAILURES AND REPLACE ANY DAMAGED PORTIONS OF THE WORK RESULTING FROM THOSE TESTS. THE COST OF THE FOREGOING ITEMS SHALL BE PAID BY THE CONTRACTOR.
- E. THE CONTRACTOR SHALL FURNISH THE OWNER CERTIFICATES OF INSPECTION AND APPROVAL BY THE ELECTRICAL INSPECTION AUTHORITY ON ALL WORK COMPETED AS REQUIRED.
- TITLE 24 REQUIRES THE COMPLETION OF ALL APPLICABLE CERTIFICATES OF INSTALLATION AND CERTIFICATES OF ACCEPTANCE FOR LIGHTING SYSTEMS. THIS SHALL INCLUDE INDOOR AND OUTDOOR LIGHTING SYSTEMS.
- G. CONTRACT DRAWINGS AND SPECIFICATIONS, GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS, ELECTRICAL PROVISIONS AND DIVISION-1 SPECIFICATION SECTIONS APPLY TO WORK OF THIS SECTION.

COMPLETE ALL TITLE 24 REQUIRED CERTIFICATE(S) OF INSTALLATION (NRCI) AND CERTIFICATE(S) OF ACCEPTANCE (NRCA) TO BE COMPLETED PER THE CONTRACT DOCUMENTS.

I. RESPONSIBILITIES OF INSTALLING CONTRACTORS

- A.A. GENERAL CONTRACTOR (GC)
- a. ENSURE THAT ALL CONTRACTORS IDENTIFIED AS THE CONTRACTOR RESPONSIBLE FOR ACCEPTANCE TESTING AND COMPLETION OF THE TITLE 24 CERTIFICATE(S) OF ACCEPTANCE ARE CERTIFIED BY THE STATE OF CALIFORNIA OR ITS DESIGNATED BODY TO CONDUCT EACH RESPECTIVE TEST.
- A.A. ELECTRICAL CONTRACTOR (EC)
- a. VERIFY PROPER INSTALLATION AND PERFORMANCE OF ALL ELECTRICAL SERVICES PROVIDED. b. COMPLETE TITLE 24 CERTIFICATE(S) OF INSTALLATION AND MANUFACTURER'S PRE-START CHECKLISTS PRIOR
- TO SCHEDULING STARTUP/PROGRAMMING OF LIGHTING CONTROL EQUIPMENT. i. RETAIN CERTIFICATE(S) OF INSTALLATION IN A 3-RING BINDER IN AN ORGANIZED FASHION. BINDER IS TO REMAIN
- ON THE JOB SITE ii. MAKE CERTIFICATE(S) OF INSTALLATION AVAILABLE FOR BUILDING INSPECTOR'S REVIEW.
- iii. RETAIN CALIBRATION RECORDS FOR EQUIPMENT PROVIDED WITH MANUFACTURER CALIBRATED SENSORS IN
- THE CERTIFICATE(S) OF INSTALLATION BINDER.
- iv. CORRECT LABELING OF ALL CIRCUITS WITH CONNECTED EQUIPMENT. c. COMPLETE THE CERTIFICATE(S) OF ACCEPTANCE PER THE CONTRACT DOCUMENTS.
- i. THE COMPANY INSTALLING THE LIGHTING SYSTEMS MUST BE AN AUTHORIZED LIGHTING CONTROLS ACCEPTANCE TEST EMPLOYER CERTIFIED BY A LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN CERTIFICATION PROVIDER OR INCLUDE IN THEIR BID THE COST OF RETAINING AND OVERSEEING A CONTRACTOR WHO IS AN AUTHORIZED LIGHTING CONTROLS ACCEPTANCE TEST EMPLOYER TO COMPLETE THE ACCEPTANCE
- ii. ALL REQUIRED ACCEPTANCE TESTING MUST BE COMPLETED BY A LIGHTING CONTROLS ACCEPTANCE TEST
- TECHNICIAN EMPLOYED BY THE LIGHTING CONTROLS ACCEPTANCE TEST EMPLOYER. iii. RETAIN CERTIFICATE(S) OF ACCEPTANCE IN A 3-RING BINDER IN AN ORGANIZED FASHION. BINDER IS TO REMAIN
- ON THE JOB SITE iv. UPLOAD ALL CERTIFICATE(S) OF ACCEPTANCE TO THE CALIFORNIA TITLE 24 CERTIFICATES OF ACCEPTANCE
- d. SUCCESSFUL COMPLETION OF THE REQUIRED ACCEPTANCE TESTS IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR. ANY COSTS ASSOCIATED WITH MODIFICATIONS NECESSARY TO OBTAIN COMPLIANCE AND RE-TESTING OF SYSTEMS SHALL BE INCLUDED IN THE BASE BID OF THIS PROJECT.

DATABASE, IF, AT THE TIME OF PROJECT COMPLETION, THE DATABASE IS AVAILABLE TO THE PUBLIC.

ELECTRICAL SPECIFICATIONS



City Of Garden Grove
Department Of Public Works

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REVISIONS |ISSUED BY|APP'D DATE DESCRIPTION

BICYCLE AND PEDESTRIAN TRAIL ON THE OCTA ROW

DRAWING NUMBER

Phone: 909.890.3700 Email: cadd@designwesteng.com DESIGN WEST ENGINEERING MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS

an Bernardino, CA 92408

