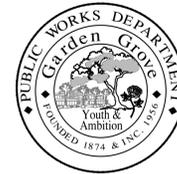


GENERAL NOTES:

- 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 (RDM) 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 COMPANIES INVOLVED.
- 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.
- THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (1-800-422-4133) TWO WORKING DAYS PRIOR TO DOING ANY EXCAVATION. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION 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.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR INSPECTION TWO WORKING DAYS PRIOR TO STARTING WORK AT (714) 741-5179.
- 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.
- 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.
- THE EDGES OF ALL A.C. PATCHES SHALL BE SEALED WITH ASPHALT EMULSION.
- CONTRACTOR SHALL HAVE SUFFICIENT MATERIALS ON HAND AT ALL TIMES TO EXPEDITE ANY EMERGENCY REPAIR.
- ALL MEASUREMENTS ARE HORIZONTAL, CONTRACTOR IS RESPONSIBLE FOR CONVERTING HORIZONTAL DISTANCES TO SLOPE DISTANCES.
- PAVEMENT LEGENDS AND CROSSWALKS SHALL BE THERMOPLASTIC.
- IF CULTURAL MATERIALS OR RESOURCES ARE DISCOVERED DURING THE PROJECT CONSTRUCTION, ALL WORK IN THE VICINITY OF THE DISCOVERY SHALL IMMEDIATELY CEASE.
- REMOVE ALL USA MARKINGS FROM PUBLIC RIGHT-OF-WAY AFTER CONSTRUCTION IS COMPLETE.



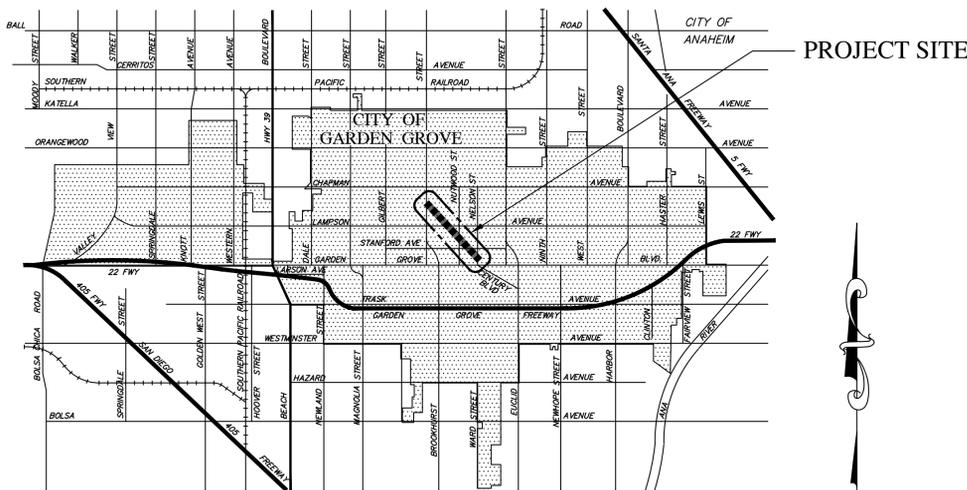
City Of Garden Grove
Department Of Public Works



**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

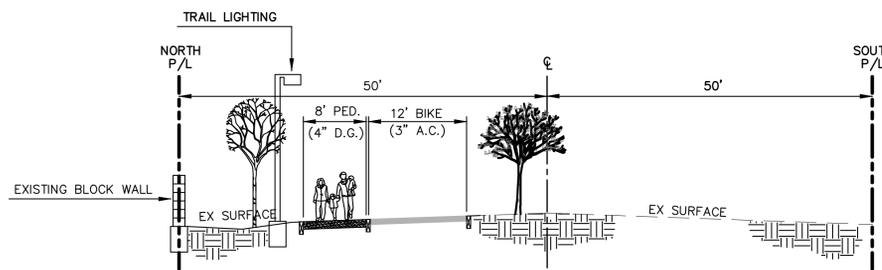
SHEET INDEX	
SHEET NO.	SHEET TITLE
1	TITLE SHEET
2	IRRIGATION LEGEND
3	IRRIGATION PLAN
4	IRRIGATION PLAN
5	IRRIGATION PLAN
6	IRRIGATION CALCULATIONS
7	IRRIGATION DETAILS
8	IRRIGATION DETAILS
9	PLANTING PLAN
10	PLANTING PLAN
11	PLANTING PLAN
12	PLANTING DETAILS
13	ELECTRICAL LEGENDS AND NOTES
14	ELECTRICAL SPECIFICATIONS



LOCATION MAP
 NOT TO SCALE

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
REFLEX TRAFFIC SYSTEMS INC.	MARC CARROLL	(530) 957-2856



SAMPLE SECTION - BIKE TRAIL
 NOT TO SCALE

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



what's below.
 Call 811 before you dig.

CALL 811 TWO WORKING DAYS BEFORE YOU DIG.

MWEL0 - AB-1881 STATEMENT:
 I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLAN.
 SIGNATURE: *Heath D. Habig* 02-04-2020
 (HEATH D. HABIG P.L.A. 5028)



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

HEATH D. HABIG P.L.A. 5028 7/9/2020
 DATE

BENCHMARK: 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 LAMPSON AVE. AND BROOKHURST ST. 15' EAST OF THE BCR AND 1' NORTH OF THE CURB FACE.

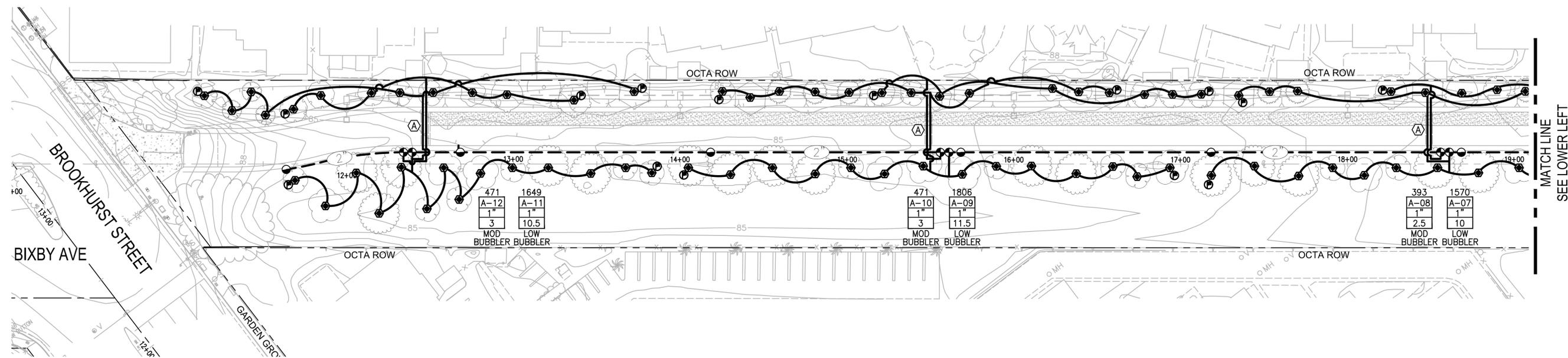
DESIGNED BY:	DRAWN BY:	CHECKED BY:
APPROVED BY:		
SENIOR ENGINEER		DATE

REVISIONS			
REV.	DATE	DESCRIPTION	ISSUED BY / APP'D

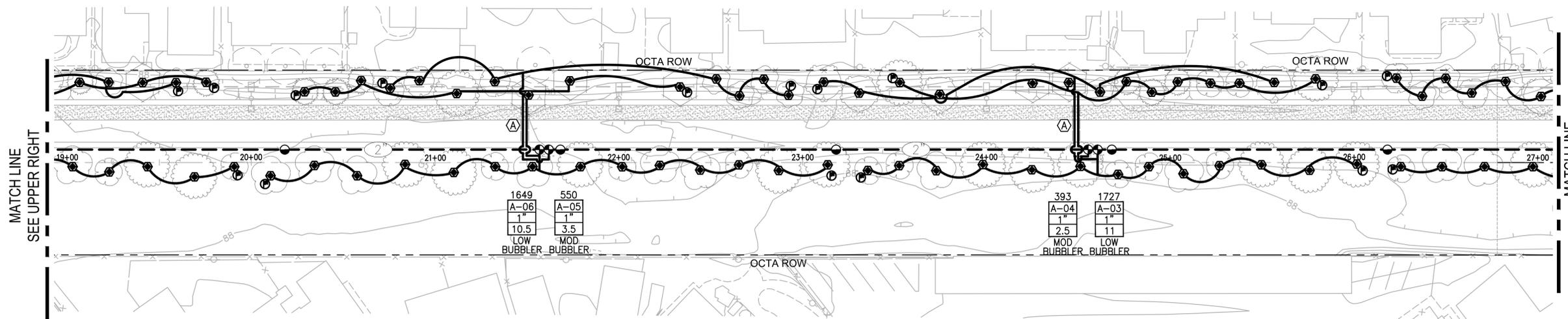
CITY TRAFFIC ENGINEER _____
 STREET DIVISIONS MGR. _____
 WATER SERVICES MGR. _____
 REAL PROPERTY AGENT _____
 XX

APPROVED BY: _____ APPROVED BY: _____
 CITY ENGINEER 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 DESIGN ASSUMPTIONS OR ACCURACY.

BICYCLE AND PEDESTRIAN TRAIL
ON THE OCTA ROW
TITLE SHEET
L-01
 SHEET 1 OF 14

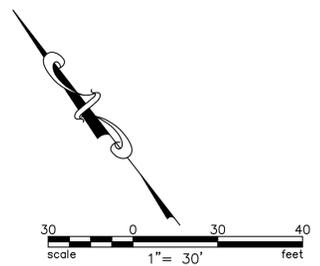


MATCH LINE
SEE LOWER LEFT



MATCH LINE
SEE UPPER RIGHT

MATCH LINE
SEE SHEET L-04



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

REV.		DATE	DESCRIPTION	ISSUED BY	APP'D

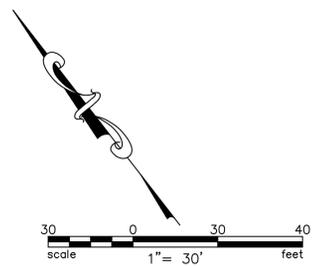
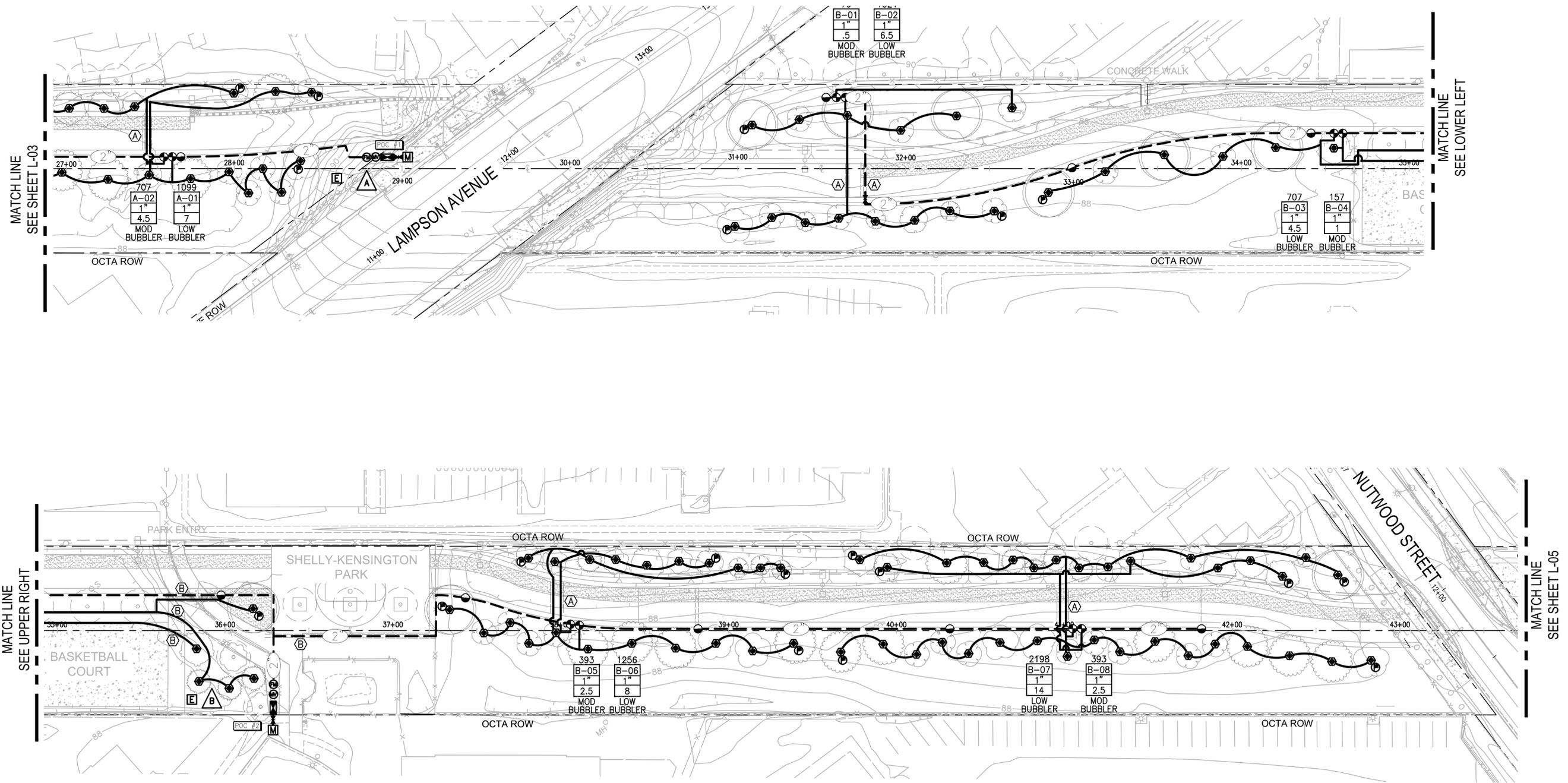


City Of Garden Grove
Department Of Public Works

BICYCLE AND PEDESTRIAN TRAIL
ON THE OCTA ROW
IRRIGATION PLAN

DRAWING NUMBER
L-03
SHEET 3 OF 14

Drawing Name: P:\G\G06E0000002\0400CAD\SHETS\01_L-03E0000-0001_LA_Irrigation.dwg
Last Opened: Jul 09, 2020 - 4:59pm by: Sww



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

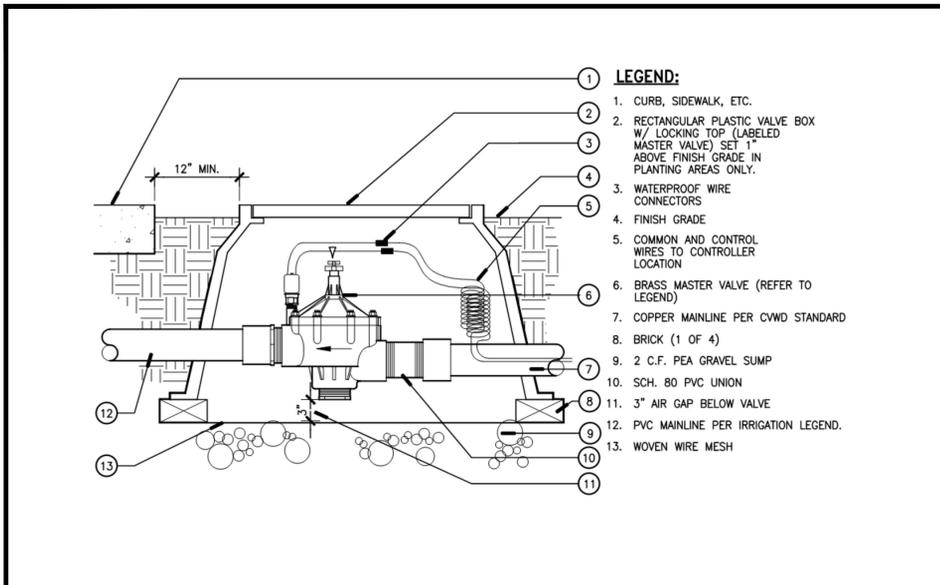
REV.		DATE	DESCRIPTION	ISSUED BY	APP'D

City of Garden Grove
 Department Of Public Works

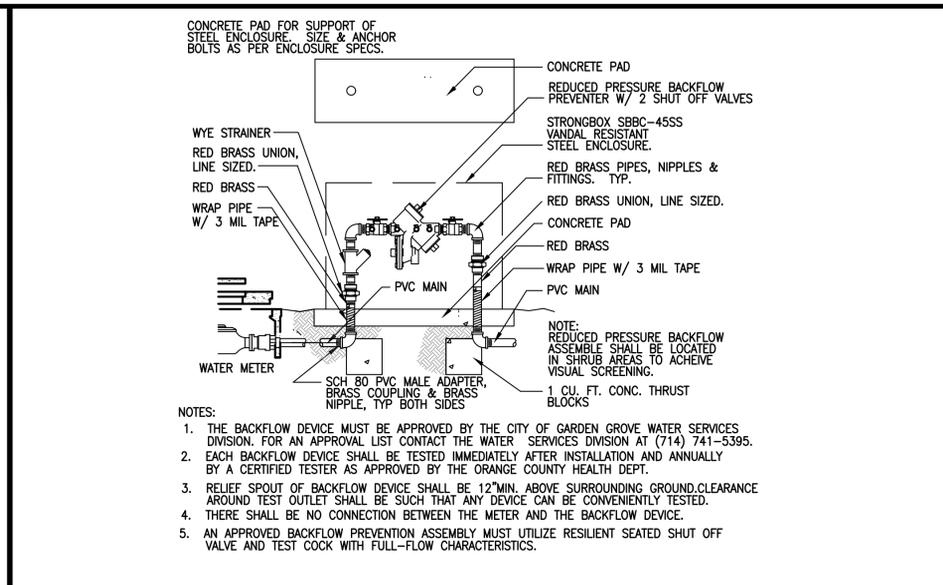
BICYCLE AND PEDESTRIAN TRAIL
 ON THE OCTA ROW
 IRRIGATION PLAN

DRAWING NUMBER
L-04
 SHEET 4 OF 14

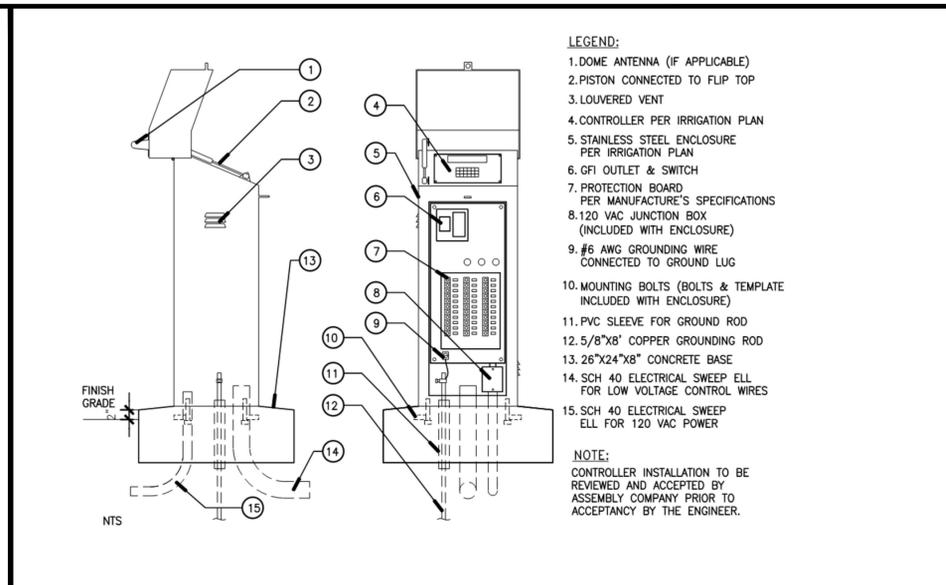
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 Last Opened: Jul 09, 2020 - 5:00pm by: Sww



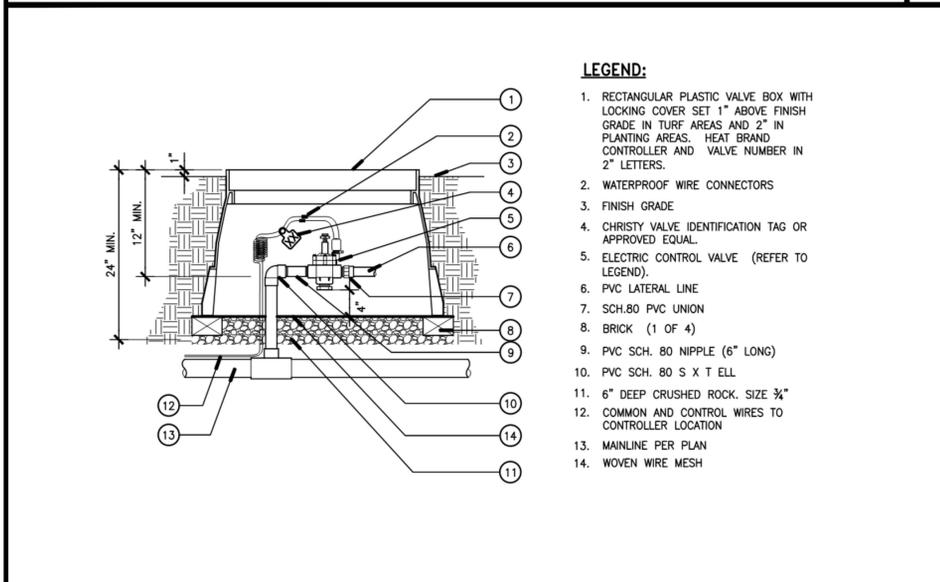
MASTER VALVE 3



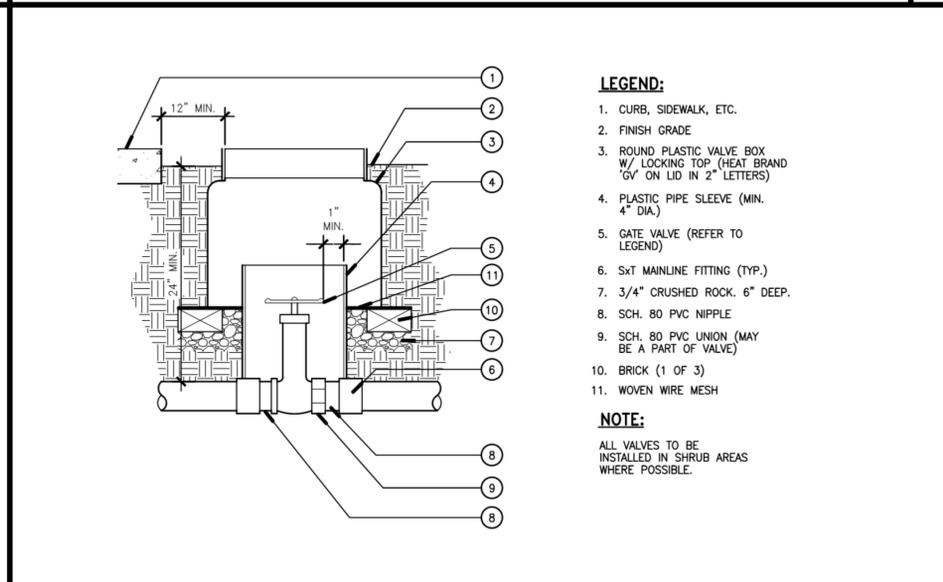
BACKFLOW PREVENTOR (CITY STD. B-770) 2



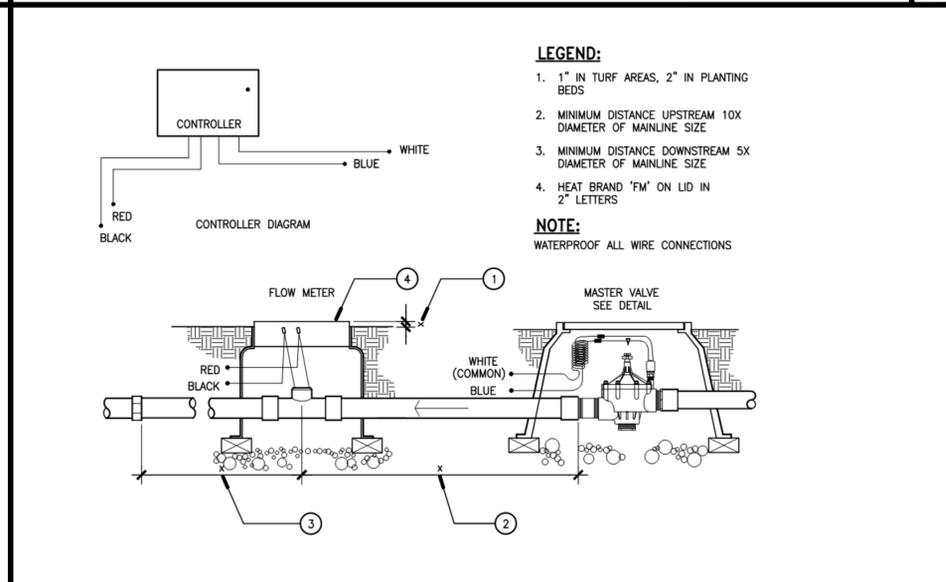
TOP MOUNT CONTROLLER INSTALLATIONS 1



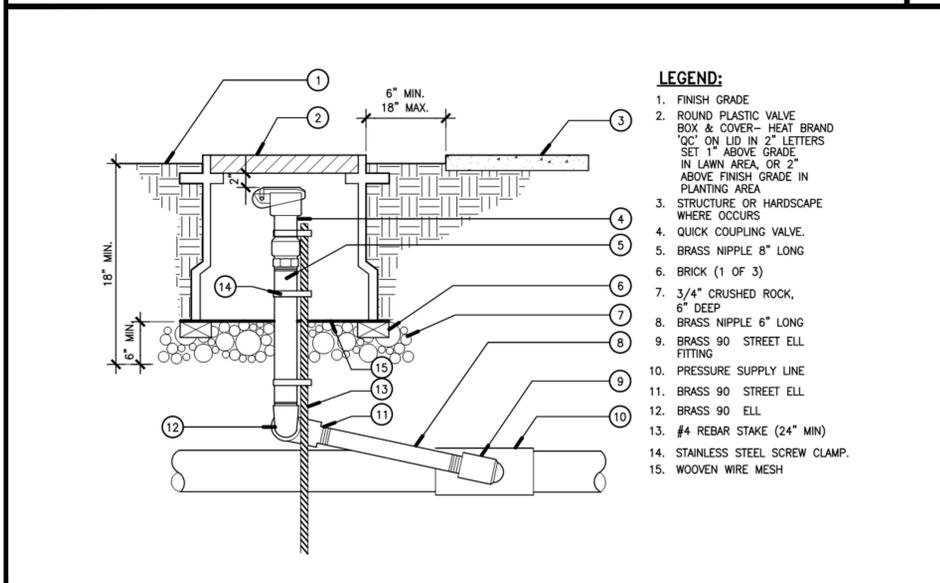
AUTOMATIC VALVE 6



GATE VALVE 5



FLOW METER INSTALLATION 4



QUICK COUPLING VALVE 7

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

City Of Garden Grove
Department Of Public Works

BICYCLE AND PEDESTRIAN TRAIL
ON THE OCTA ROW
IRRIGATION DETAILS

DRAWING NUMBER
L-07
SHEET 7 OF 14

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 sulfates 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.

Salinity (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
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www.waypointanalytical.com

Page 1 of 7

Page 3
David Evans & Associates, Inc.
March 6, 2020

Maintenance Fertilization

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 16-6-6, 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 chelates 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.

JK
Joe Kiefer

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.
March 6, 2020

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.

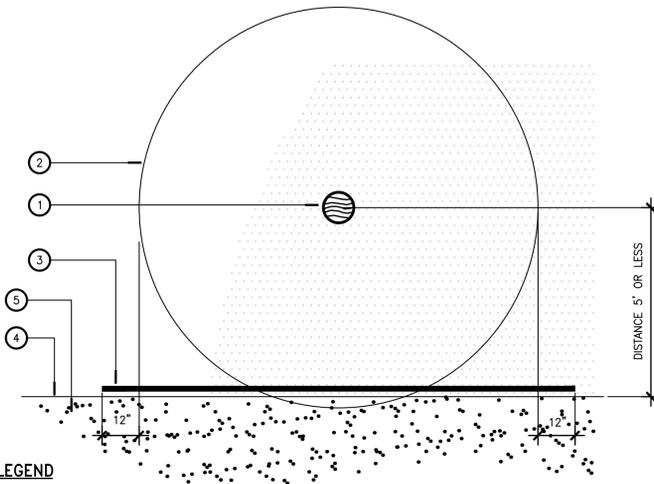
**Place slow release fertilizer tablets in the upper 12 inches of backfill at manufacturer's recommended rates.

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.
- 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.
- 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 plants.
- 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.

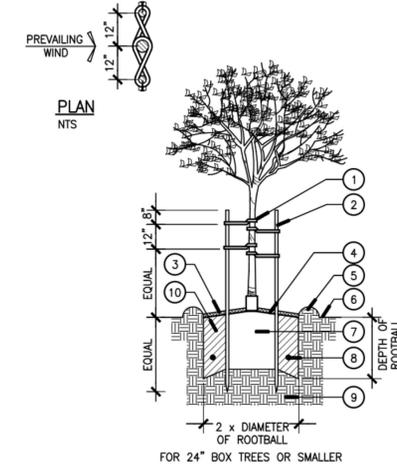
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Page 2 of 7



LEGEND

- TREE TRUNK CENTER
- EXTENT OF TREE CANOPY
- 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 PHONE: (800) 458-7668 TOP OF BARRIER SHALL BE SET FLUSH WITH TOP OF TREE BACKFILL
- EDGE OF PAVING
- PAVING



LEGEND:

- 'CINCH-TIE' BY V.I.T. CO. (800) 729-1314
- LODGEPOLE PINE STAKE IMPREGNATED WITH EPA APPROVED MATERIAL. 2-1/2" DIA. x 12' LONG FOR 24" BOX AND SMALLER.
- 2" LAYER OF MULCH OR DECOMPOSED GRANITE WHERE OCCURS.
- TOP OF ROOT BALL TO BE 1" ABOVE FINISH GRADE.
- 6" WATERING BASIN BERM (TEMPORARY)
- FINISH GRADE
- ROOTBALL
- 7 GRAM PLANTING TABLET -16 PER 24" BOX -20 PER 36" BOX -24 PER 48" BOX -36 PER 60" BOX
- NATIVE SUBGRADE
- BACKFILL MIX- SEE SPECS

NOTE:

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 POLE.

3 ROOT BARRIER DETAIL - PLAN VIEW

2 TYPICAL DOUBLE STAKE TREE

4741 East Hunter Ave., Suite A Anaheim, CA 92807
Main 714-282-8777 • Fax 714-282-8575
www.waypointanalytical.com

SOIL ANALYSIS

Send To: David Evans & Associates Inc
17782 17th Street Suite 200 Tustin, CA 92780
Project: Garden Grove Bike Trail Project
Report No: 20-056-0029
Cust No: 10261
Date Printed: 03/06/2020
Date Received: 02/25/2020
Page: 1 of 4
Lab Number: 12861

Sample Id: #1

Test	Result	Effect on Plant Growth				
		Negligible	Sensitive Crops Restricted	Many Crops Restricted	Only Tolerant Crops Substantially	Few Crops Tolerant
Salinity (ECe)	0.1 dS/m	Very Low	Low	Medium	Optimum	Very High
Sodium Adsorption Ratio (SAR)	0.77	Very Low	Low	Medium	Optimum	Very High
Boron (B)	0.08 ppm	Very Low	Low	Medium	Optimum	Very High
Sodium (Na)	0.6 meq/L	Very Low	Low	Medium	Optimum	Very High
Chloride (Cl)	0.4 meq/L	Very Low	Low	Medium	Optimum	Very High
Carbonate (CO3)		Very Low	Low	Medium	Optimum	Very High
Bicarbonate (HCO3)		Very Low	Low	Medium	Optimum	Very High
Fluoride (F)		Very Low	Low	Medium	Optimum	Very High

Test	Result	Soil Test Ratios				
		Very Low	Low	Medium	Optimum	Very High
pH	8.1 s.u.	Very Low	Low	Medium	Optimum	Very High

Test	Result	Sufficiency Factor	Soil Test Ratios					NDS-N
			Very Low	Low	Medium	Optimum	Very High	
Available-N	4 ppm	0.1	Very Low	Low	Medium	Optimum	Very High	0 ppm
Phosphorus (P) - Olsen	4 ppm	0.2	Very Low	Low	Medium	Optimum	Very High	3 ppm
Potassium (K)	141 ppm	2.2	Very Low	Low	Medium	Optimum	Very High	164 ppm
Phosphorus - sat. est.	0.1 meq/L	0.1	Very Low	Low	Medium	Optimum	Very High	4 ppm
Calcium (Ca)	299 ppm	0.7	Very Low	Low	Medium	Optimum	Very High	16 ppm
Calcium - sat. est.	1.0 meq/L	1.3	Very Low	Low	Medium	Optimum	Very High	8 ppm
Magnesium (Mg)	56 ppm	0.9	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Magnesium - sat. est.	0.2 meq/L	0.7	Very Low	Low	Medium	Optimum	Very High	8 ppm
Copper (Cu)	0.4 ppm	1.3	Very Low	Low	Medium	Optimum	Very High	23 meq/kg
Zinc (Zn)	1 ppm	0.4	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Manganese (Mn)	0 ppm	2	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Iron (Fe)	4 ppm	0.4	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Boron (B) - sat. est.	0.08 ppm	0.3	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Sulfate - sat. est.	0.4 meq/L	0.1	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Each Aluminum			Very Low	Low	Medium	Optimum	Very High	33 meq/kg

Half Sat	Organic Matter	Gravel	Weight Percent of Sample Passing 2mm Screen					USDA Soil Classification
			Coarse	Fine	Very Coarse	Coarse	Med. to Very Fine	
15 %								

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

NELSON ST TO STANFORD AVE

4741 East Hunter Ave., Suite A Anaheim, CA 92807
Main 714-282-8777 • Fax 714-282-8575
www.waypointanalytical.com

SOIL ANALYSIS

Send To: David Evans & Associates Inc
17782 17th Street Suite 200 Tustin, CA 92780
Project: Garden Grove Bike Trail Project
Report No: 20-056-0029
Cust No: 10261
Date Printed: 03/06/2020
Date Received: 02/25/2020
Page: 2 of 4
Lab Number: 12862

Sample Id: #2

Test	Result	Effect on Plant Growth				
		Negligible	Sensitive Crops Restricted	Many Crops Restricted	Only Tolerant Crops Substantially	Few Crops Tolerant
Salinity (ECe)	0.3 dS/m	Very Low	Low	Medium	Optimum	Very High
Sodium Adsorption Ratio (SAR)	0.32	Very Low	Low	Medium	Optimum	Very High
Boron (B)	0.15 ppm	Very Low	Low	Medium	Optimum	Very High
Sodium (Na)	0.4 meq/L	Very Low	Low	Medium	Optimum	Very High
Chloride (Cl)	0.4 meq/L	Very Low	Low	Medium	Optimum	Very High
Carbonate (CO3)		Very Low	Low	Medium	Optimum	Very High
Bicarbonate (HCO3)		Very Low	Low	Medium	Optimum	Very High
Fluoride (F)		Very Low	Low	Medium	Optimum	Very High

Test	Result	Soil Test Ratios				
		Very Low	Low	Medium	Optimum	Very High
pH	7.4 s.u.	Very Low	Low	Medium	Optimum	Very High

Test	Result	Sufficiency Factor	Soil Test Ratios					NDS-N
			Very Low	Low	Medium	Optimum	Very High	
Available-N	17 ppm	0.5	Very Low	Low	Medium	Optimum	Very High	3 ppm
Phosphorus (P) - Olsen	4 ppm	0.2	Very Low	Low	Medium	Optimum	Very High	3 ppm
Potassium (K)	64 ppm	0.8	Very Low	Low	Medium	Optimum	Very High	164 ppm
Phosphorus - sat. est.	0.1 meq/L	0.1	Very Low	Low	Medium	Optimum	Very High	4 ppm
Calcium (Ca)	547 ppm	0.9	Very Low	Low	Medium	Optimum	Very High	16 ppm
Calcium - sat. est.	2.7 meq/L	1.3	Very Low	Low	Medium	Optimum	Very High	8 ppm
Magnesium (Mg)	57 ppm	0.7	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Magnesium - sat. est.	0.4 meq/L	0.7	Very Low	Low	Medium	Optimum	Very High	8 ppm
Copper (Cu)	0.9 ppm	2.1	Very Low	Low	Medium	Optimum	Very High	23 meq/kg
Zinc (Zn)	2 ppm	1.3	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Manganese (Mn)	2 ppm	0.5	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Iron (Fe)	7 ppm	0.4	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Boron (B) - sat. est.	0.15 ppm	0.3	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Sulfate - sat. est.	1.4 meq/L	0.3	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Each Aluminum			Very Low	Low	Medium	Optimum	Very High	33 meq/kg

Half Sat	Organic Matter	Gravel	Weight Percent of Sample Passing 2mm Screen					USDA Soil Classification
			Coarse	Fine	Very Coarse	Coarse	Med. to Very Fine	
17 %								

Graphical interpretation is a general guide. Optimum levels will vary by crop and objectives. Page 5 of 7.

STANFORD AVE TO NUTWOOD ST

4741 East Hunter Ave., Suite A Anaheim, CA 92807
Main 714-282-8777 • Fax 714-282-8575
www.waypointanalytical.com

SOIL ANALYSIS

Send To: David Evans & Associates Inc
17782 17th Street Suite 200 Tustin, CA 92780
Project: Garden Grove Bike Trail Project
Report No: 20-056-0029
Cust No: 10261
Date Printed: 03/06/2020
Date Received: 02/25/2020
Page: 3 of 4
Lab Number: 12863

Sample Id: #3

Test	Result	Effect on Plant Growth				
		Negligible	Sensitive Crops Restricted	Many Crops Restricted	Only Tolerant Crops Substantially	Few Crops Tolerant
Salinity (ECe)	0.9 dS/m	Very Low	Low	Medium	Optimum	Very High
Sodium Adsorption Ratio (SAR)	2.02	Very Low	Low	Medium	Optimum	Very High
Boron (B)	0.18 ppm	Very Low	Low	Medium	Optimum	Very High
Sodium (Na)	3.7 meq/L	Very Low	Low	Medium	Optimum	Very High
Chloride (Cl)	0.4 meq/L	Very Low	Low	Medium	Optimum	Very High
Carbonate (CO3)		Very Low	Low	Medium	Optimum	Very High
Bicarbonate (HCO3)		Very Low	Low	Medium	Optimum	Very High
Fluoride (F)		Very Low	Low	Medium	Optimum	Very High

Test	Result	Soil Test Ratios				
		Very Low	Low	Medium	Optimum	Very High
pH	7.7 s.u.	Very Low	Low	Medium	Optimum	Very High

Test	Result	Sufficiency Factor	Soil Test Ratios					NDS-N
			Very Low	Low	Medium	Optimum	Very High	
Available-N	26 ppm	0.7	Very Low	Low	Medium	Optimum	Very High	20 ppm
Phosphorus (P) - Olsen	2 ppm	0.1	Very Low	Low	Medium	Optimum	Very High	3 ppm
Potassium (K)	30 ppm	0.3	Very Low	Low	Medium	Optimum	Very High	164 ppm
Phosphorus - sat. est.	0.1 meq/L	0.1	Very Low	Low	Medium	Optimum	Very High	4 ppm
Calcium (Ca)	627 ppm	1.0	Very Low	Low	Medium	Optimum	Very High	16 ppm
Calcium - sat. est.	3.7 meq/L	1.3	Very Low	Low	Medium	Optimum	Very High	8 ppm
Magnesium (Mg)	75 ppm	0.8	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Magnesium - sat. est.	1.0 meq/L	0.8	Very Low	Low	Medium	Optimum	Very High	8 ppm
Copper (Cu)	0.9 ppm	1.0	Very Low	Low	Medium	Optimum	Very High	23 meq/kg
Zinc (Zn)	0 ppm	0.2	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Manganese (Mn)	0 ppm	0.2	Very Low	Low	Medium	Optimum	Very High	33 meq/kg
Iron (Fe)	6 ppm	0.3	Very					

ELECTRICAL SPECIFICATIONS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. 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 DRAWINGS.
- B. THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND SPECIFICATIONS IN A MANNER TO BE FULLY COGNIZANT OF ALL WORK REQUIRED UNDER THIS SECTION.
- C. 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

- A. 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

- A. 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.
- C. 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.
- D. 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

- A. 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, RECONFIGURING OR RELOCATING ELECTRICAL EQUIPMENT WILL NOT BE PERMITTED WITHOUT SPECIFIC WRITTEN APPROVAL OF THE ENGINEER.

1.06 SUBMITTALS

- A. 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.
- B. 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), IPCSEA (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.
- C. 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

- A. 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 OF THE WORK.

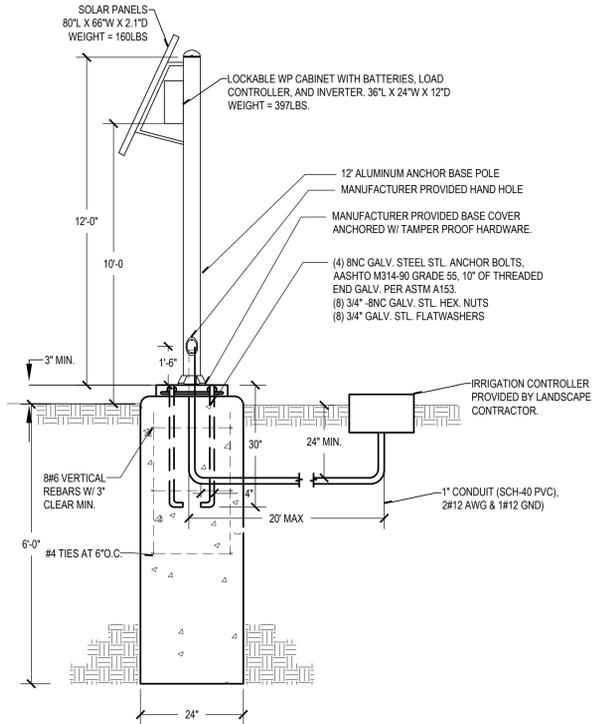
PART 2 PRODUCTS

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.
- B. ALL MAJOR EQUIPMENT COMPONENTS SHALL HAVE THE MANUFACTURER'S NAME, ADDRESS, MODEL NUMBER, AND SERIAL NUMBER PERMANENTLY ATTACHED IN A CONSPICUOUS MANNER.

POLE DETAIL (NTS)

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.



POLE AND SOLAR ASSEMBLY TO BE A COMPLETE MANUFACTURER PACKAGED KIT. PROVIDE SOLAR ELECTRIC POWER COMPANY (SEPCO) #SEPA-550-HM-MPPT28 -INV3/300W)-P25-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 CALCULATIONS - IRRIGATION CONTROLLER

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
BATTERIES:	6 X 112 AMP-HOURS (12VDC)	8064 WATT-HRS/DAY
INVERTER:	1 X 300 WATTS	300 WATTS (120VAC OUTPUT)

ABBREVIATIONS

A	AMPERE	NTS	NOT TO SCALE
AFF	ABOVE FINISHED FLOOR	OC	ON CENTER
AFG	ABOVE FINISHED GRADE	OD	OUTSIDE DIAMETER
AIC	AMPERE INTERRUPTING CAPACITY	P	POLE
AWG	AMERICAN WIRE GAUGE	PB	PULL BOX
C	CONDUIT	PF	POWER FACTOR
CO	CONDUIT ONLY	PNL	PANEL
CONC	CONCRETE	POC	POINT OF CONNECTION
CU	COPPER	PP	POWER POLE
CL	CENTERLINE	PWR	POWER
DN	DOWN	PVC	POLYVINYL CHLORIDE
DWG	DRAWING	QTY	QUANTITY
EA	EACH	REQD	REQUIRED
EC	ELECTRICAL CONTRACTOR	REQMT	REQUIREMENT
EMT	ELECTRICAL METALLIC TUBING	RGS	RIGID GALVANIZED STEEL
FLA	FULL LOAD CURRENT	RMC	RIGID METALLIC CONDUIT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	RNC	RIGID NONMETALLIC CONDUIT
GND	GROUND	SHT	SHEET
IG	ISOLATED/INSULATED GROUND	SPEC	SPECIFICATIONS
ISC	SHORT CIRCUIT CURRENT AVAILABLE IN RMS	TYP	TYPICAL
	SYMMETRICAL AMPERES	UL	UNDERWRITERS LABORATORY
KCMIL	THOUSAND CIRCULAR MILS	UNON	UNLESS OTHERWISE NOTED
KW	KILOWATT	V	VOLT, VOLTAGE
KV	KILO VOLT	VA	VOLT-AMPERE
KVA	KILO VOLT-AMPERE	W	WATT
MFR	MANUFACTURER	WH	WATT-HOUR
MAX	MAXIMUM	WP	WEATHERPROOF
MIN	MINIMUM	WT	WEATHERTIGHT
NEC	NATIONAL ELECTRICAL CODE	WW	WIREWAY
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION	4W	FOUR-WIRE
		3W	THREE-WIRE
NEW (N)	NEW, TO BE FURNISHED AND INSTALLED BY CONTRACTOR	Ø	DIAMETER, PHASE NUMBER
NIC	NOT IN CONTRACT	#	NUMBER
		°C	DEGREE CELSIUS

GENERAL NOTES

1. 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.
2. WHERE WIRE SIZES ARE INDICATED ON PLANS, FOR INDIVIDUAL CIRCUITS, THE WIRE SIZE INDICATED SHALL APPLY TO THE COMPLETE CIRCUIT, UNLESS OTHERWISE NOTED.
3. 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 TIMES.
4. FURNISH PULL STRING IN EACH RACEWAY RUN OVER 10' IN LENGTH, IN WHICH PERMANENT WIRING IS NOT INSTALLED.
5. 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.
7. ALL ELECTRIC MATERIAL SHALL BE LISTED BY "UL" FOR THE TYPE OF APPLICATION AND "UL" LABEL SHALL APPEAR ON ALL ELECTRICAL EQUIPMENT.
8. ALL DISTRIBUTION AND CONTROL EQUIPMENT (SUCH AS CBs, 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.
9. 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 UNDERWRITERS 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.
11. 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.
12. 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.
14. 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

1. 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)
3. 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.
8. 2019 TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.
9. 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 INDEX

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

ELECTRICAL LEGENDS & NOTES

1

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DESIGN WEST ENGINEERING
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



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

City Of Garden Grove
Department Of Public Works

BICYCLE AND PEDESTRIAN TRAIL ON THE OCTA ROW

DRAWING NUMBER

E1.1

SHEET 13 OF 14

BICYCLE AND PEDESTRIAN TRAIL LANDSCAPE AND IRRIGATION - GRANT NO. 8GG17404

<p>2.02 CONDUIT</p> <p>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.</p> <p>B. ALL EMPTY CONDUITS (CO) SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE INDICATED ON THE DRAWING.</p> <p>C. WHERE CONDUIT CROSSES AN EXPANSION JOINT, PROVIDE APPROVED FITTINGS WHICH ALLOW DEFLECTIONS EQUIVALENT TO TWICE THE MOVEMENT ALLOWED BY THE DESIGN.</p> <p>2.03 CONDUCTORS</p> <p>A. PROVIDE A COMPLETE SYSTEM OF CONDUCTORS IN RACEWAY SYSTEMS AS SHOWN ON THE DRAWINGS AND THEN HEREIN SPECIFIED.</p> <p>B. LIGHTING AND POWER CONDUCTORS SHALL BE COPPER, 600 VOLT, TYPE THWN/THHN, NO. 12 MINIMUM UNLESS OTHERWISE NOTED.</p> <p>C. CONTROL CONDUCTORS SHALL BE 600V, TYPE THWN/THHN, NO.14 MINIMUM SIZE UNLESS OTHERWISE NOTED.</p> <p>2.04 FITTINGS</p> <p>A. CONNECTOR, COUPLING, LOCKNUT, BUSHINGS AND CAPS USED WITH RIGID CONDUIT SHALL BE STEEL, THREADED AND GALVANIZED. BUSHINGS SHALL BE INSULATED.</p> <p>B. EMT FITTINGS, CONNECTORS AND COUPLINGS SHALL BE STEEL, ZINC, OR CADMIUM PLATED, COMPRESSION TYPE, WITH INSULATED THROAT.</p> <p>C. FLEXIBLE STEEL CONDUIT CONNECTORS SHALL BE TWIST-IN-TYPE WITH INSULATED THROAT. THE FINISH SHALL BE ZINC OR CADMIUM PLATING.</p> <p>D. EMT CONDUIT FITTINGS SHALL BE THE COMPRESSION TYPE; SET SCREW FITTINGS SHALL NOT BE USED.</p> <p>2.05 JUNCTION AND PULL BOXES</p> <p>A. FOR INTERIOR DRY LOCATIONS, BOXES SHALL BE GALVANIZED ONE-PIECE DRAWN STEEL, KNOCKOUT TYPE WITH REMOVABLE, MACHINE SCREW SECURED COVERS.</p> <p>B. FOR EXTERIOR WET LOCATIONS, BOXES SHALL BE NEMA 3R OR NEMA 4 RATED, GASKET MACHINE SCREW SECURED COVERS.</p> <p>C. INGROUND PULLBOXES SHALL BE CONCRETE ELECTRICAL PULL BOX WITH LID APPROPRIATE FOR INSTALLATION LOCATION. SIZE PULLBOX PER NEC REQUIREMENTS.</p> <p>D. ALL BOXES SHALL BE SIZED FOR THE NUMBER AND SIZES OF CONDUCTORS AND CONDUITS ENTERING THE BOX AND EQUIPPED WITH PLASTER RINGS WHERE REQUIRED.</p> <p>2.15 ELECTRICAL CONNECTIONS</p> <p>A. 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.</p> <p>2.16 SUPPORTING DEVICES</p> <p>A. 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 CODE).</p> <p>PART 3 EXECUTION</p> <p>3.01 WORKMANSHIP AND COMPLETION OF INSTALLATION</p> <p>A. 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 BE CORRECTED WITHOUT ADDITIONAL COST TO THE OWNER.</p> <p>B. 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.</p> <p>C. 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.</p> <p>D. UPON COMPLETION OF THE INSTALLATION AND AS A CONDITION OF ITS ACCEPTANCE FURNISH ONE COPY OF THE FINAL INSPECTION CERTIFICATE TO THE OWNER.</p> <p>3.02 PREPARATION COORDINATION</p> <p>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.</p> <p>B. 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.</p> <p>C. 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.</p> <p>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.</p> <p>3.03 TRENCHING AND BACKFILLING</p> <p>A. PERFORM ALL SUCH TRENCHING AND BACKFILLING IN ACCORDANCE WITH DRAWING DETAILS.</p> <p>3.04 CORE CUTTING, DRILLING, AND PATCHING</p>	<p>A. NO HOLES WILL BE ALLOWED IN ANY STRUCTURAL MEMBERS WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT OR STRUCTURAL ENGINEER AND GENERAL CONTRACTOR.</p> <p>3.05 INSTALLATION</p> <p>A. WORKMANSHIP IS TO BE NEAT, BY EXPERIENCED WORKMEN WITH ADEQUATE SUPERVISION, AND IN LINE WITH NORMAL INDUSTRY WORK PRACTICES.</p> <p>B. MAINTAIN WORKING CLEARANCE AROUND ELECTRICAL EQUIPMENT, IN ACCORDANCE WITH CODE REQUIREMENTS AS A MINIMUM.</p> <p>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.</p> <p>D. WHERE ALLOWED, EXPOSED CONDUIT RUNS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS, OR INTERSECTION OF VERTICAL PLANES AND CEILINGS.</p> <p>E. INSTALL PRODUCTS ACCORDING TO MANUFACTURERS INSTRUCTIONS.</p> <p>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.</p> <p>G. ALL POWER WIRING SHALL BE INSTALLED IN CONDUIT.</p> <p>H. PROVIDE CONCRETE BASES FOR LIGHTING POLES.</p> <p>I. INSTALL POLES AND PLUMB.</p> <p>1. PROVIDE SHIMS TO ADJUST PLUMB.</p> <p>2. GROUT AROUND EACH BASE.</p> <p>3.06 GROUNDING</p> <p>A. ALL EQUIPMENT SHALL BE PROPERLY GROUNDED AS INDICATED ON DRAWINGS AND AS REQUIRED BY THE LATEST EDITION OF APPLICABLE CODES.</p> <p>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.</p> <p>C. BUILDING GROUNDING SYSTEM RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS.</p> <p>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.</p> <p>3.07 BRANCH CIRCUITS</p> <p>A. NO MORE THAN THREE BRANCH CIRCUITS PERMITTED IN ONE CONDUIT UNLESS INDICATED OTHERWISE</p> <p>3.09 PROTECTION</p> <p>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.</p> <p>3.10 CLEANING OF EQUIPMENT, MATERIAL, AND PREMISES</p> <p>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.</p> <p>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.</p> <p>3.11 HANDLING OF WIRE AND CABLE</p> <p>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.</p> <p>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.</p> <p>3.12 TESTING AND INSPECTIONS</p> <p>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.</p> <p>B. THE CONTRACTOR SHALL REPLACE ALL DAMAGED OR DEFECTIVE EQUIPMENT OR WORK.</p> <p>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.</p> <p>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.</p> <p>E. THE CONTRACTOR SHALL FURNISH THE OWNER CERTIFICATES OF INSPECTION AND APPROVAL BY THE ELECTRICAL INSPECTION AUTHORITY ON ALL WORK COMPLETED AS REQUIRED.</p> <p>F. 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.</p> <p>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.</p>	<p>H. COMPLETE ALL TITLE 24 REQUIRED CERTIFICATE(S) OF INSTALLATION (NRC) AND CERTIFICATE(S) OF ACCEPTANCE (NRCA) TO BE COMPLETED PER THE CONTRACT DOCUMENTS.</p> <p>I. RESPONSIBILITIES OF INSTALLING CONTRACTORS</p> <p>A.A. GENERAL CONTRACTOR (GC)</p> <p>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.</p> <p>A.A. ELECTRICAL CONTRACTOR (EC)</p> <p>a. VERIFY PROPER INSTALLATION AND PERFORMANCE OF ALL ELECTRICAL SERVICES PROVIDED.</p> <p>b. COMPLETE TITLE 24 CERTIFICATE(S) OF INSTALLATION AND MANUFACTURER'S PRE-START CHECKLISTS PRIOR TO SCHEDULING STARTUP/PROGRAMMING OF LIGHTING CONTROL EQUIPMENT.</p> <p>i. RETAIN CERTIFICATE(S) OF INSTALLATION IN A 3-RING BINDER IN AN ORGANIZED FASHION. BINDER IS TO REMAIN ON THE JOB SITE</p> <p>ii. MAKE CERTIFICATE(S) OF INSTALLATION AVAILABLE FOR BUILDING INSPECTOR'S REVIEW.</p> <p>iii. RETAIN CALIBRATION RECORDS FOR EQUIPMENT PROVIDED WITH MANUFACTURER CALIBRATED SENSORS IN THE CERTIFICATE(S) OF INSTALLATION BINDER.</p> <p>iv. CORRECT LABELING OF ALL CIRCUITS WITH CONNECTED EQUIPMENT.</p> <p>c. COMPLETE THE CERTIFICATE(S) OF ACCEPTANCE PER THE CONTRACT DOCUMENTS.</p> <p>i. THE COMPANY INSTALLING THE LIGHTING SYSTEMS MUST BE AN AUTHORIZED LIGHTING CONTROLS ACCEPTANCE TEST EMPLOYER CERTIFIED BY A LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN WHO IS AN AUTHORIZED LIGHTING CONTROLS ACCEPTANCE TEST EMPLOYER TO COMPLETE THE ACCEPTANCE TESTING.</p> <p>ii. ALL REQUIRED ACCEPTANCE TESTING MUST BE COMPLETED BY A LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN EMPLOYED BY THE LIGHTING CONTROLS ACCEPTANCE TEST EMPLOYER.</p> <p>iii. RETAIN CERTIFICATE(S) OF ACCEPTANCE IN A 3-RING BINDER IN AN ORGANIZED FASHION. BINDER IS TO REMAIN ON THE JOB SITE</p> <p>iv. UPLOAD ALL CERTIFICATE(S) OF ACCEPTANCE TO THE CALIFORNIA TITLE 24 CERTIFICATES OF ACCEPTANCE DATABASE, IF, AT THE TIME OF PROJECT COMPLETION, THE DATABASE IS AVAILABLE TO THE PUBLIC.</p> <p>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.</p>	
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ELECTRICAL SPECIFICATIONS 1

 <p>DESIGN WEST ENGINEERING MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS</p>		 <p>DAVID EVANS AND ASSOCIATES INC. 17782 17th Street Suite 200 Tustin California 92780-1947 Phone: 714.665.4500</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>ISSUED BY / APP'D</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REVISIONS				REV.	DATE	DESCRIPTION	ISSUED BY / APP'D																	 <p>City Of Garden Grove Department Of Public Works</p>	<p>DRAWING NUMBER</p> <p style="font-size: 24pt; font-weight: bold;">E2.1</p> <p>SHEET 14 OF 14</p>
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BICYCLE AND PEDESTRIAN TRAIL
ON THE OCTA ROW