



Acton-Agua Dulce Unified School District Energy Engineered Solar Solutions

March 22, 2018

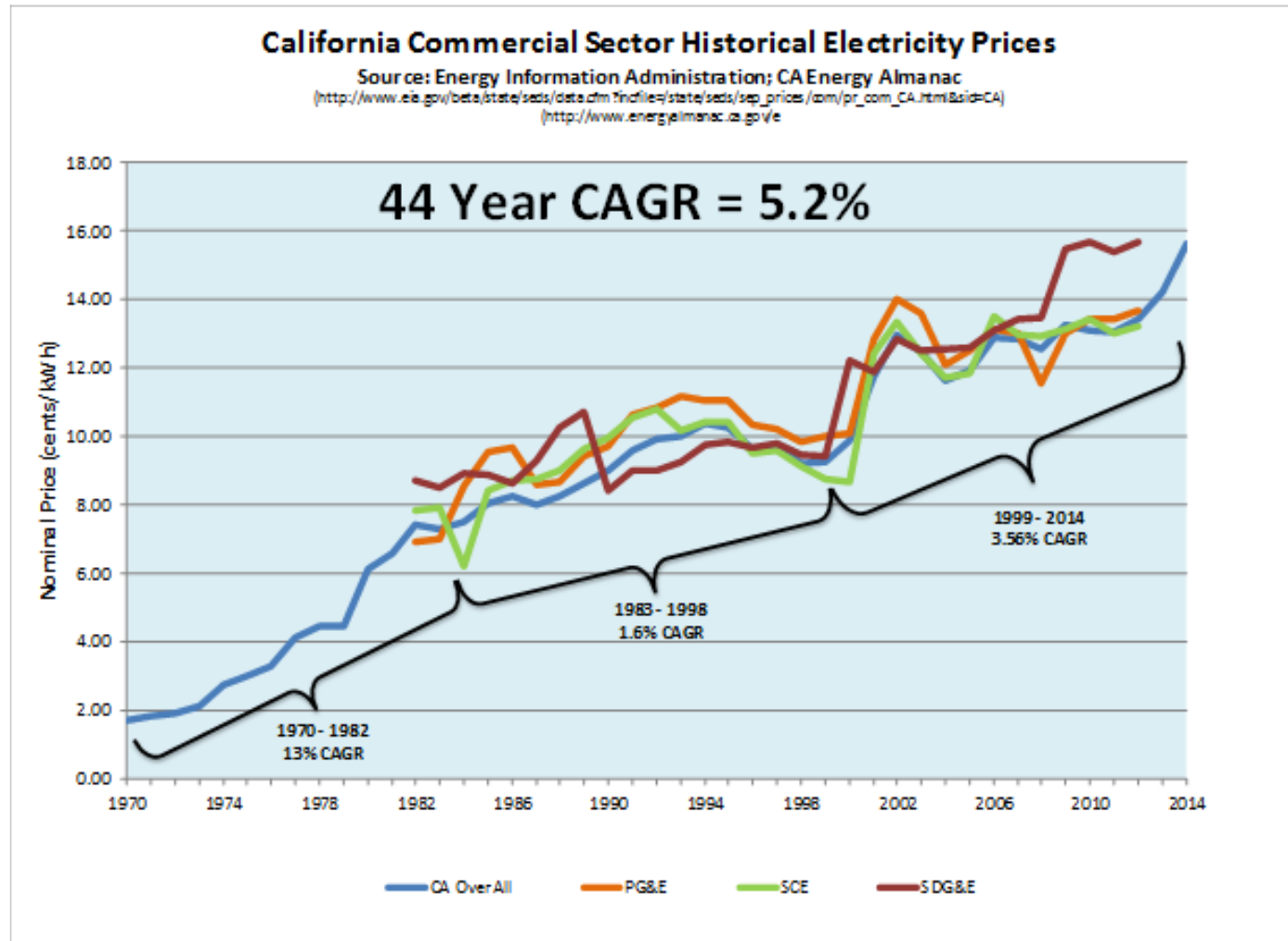


Solar Project Benefits

- **Positive Impact to General Fund**
 - \$1.5 to \$1.8 million in savings over 25 years
- **Improved Campus Security and Safety**
 - Improved lighting in parking lots for path of travel
- **Shade for Students, Cars and the Community**
- **Educational Enhancements**
 - Next Generation Science Standards Modules
- **Community Partnership**
 - Tailored support
- **Environmental and Human Health Benefits**
- **Positive PR for the District**



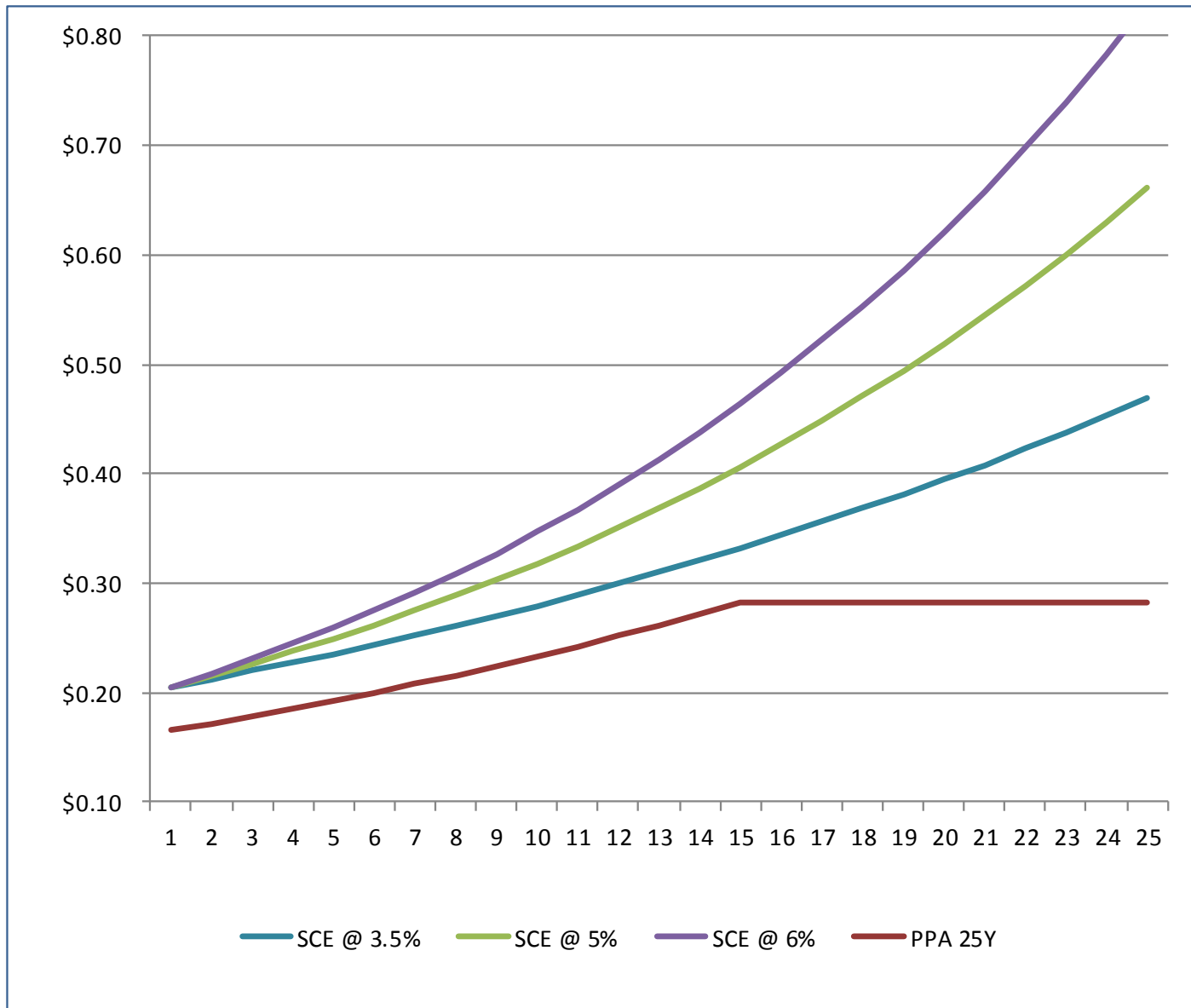
Utility Rates Continue to Rise



Savings Summary

Savings Projections	
Savings Projection Years 1-5	\$21,000 - \$26,000
Cumulative Savings Projection, Years 1-25	\$1,480,000 - \$1,830,000
Power Purchase Agreement (PPA) Terms	
Capital Costs	\$0.00
1 st year PPA rate per kWh (aggregate)	\$0.1651
PPA annual rate increase, to Year 15	3.90%
PPA annual rate increase, from Year 16 to end of term	0.00%
PPA term	25 years
Historical Consumption Data (for proposed meters)	
Total 12-month energy usage (kWh)	1,449,469
Total 12-month electricity cost during analysis period	\$238,450
Average electricity rate during analysis period	\$0.1645
Average electricity rate on current tariff	\$0.1954
Projected Utility Costs	
Average electricity rate on current tariff for 12-month period following projected solar operation date	\$0.2052
Average utility annual rate increase	5.0%
Proposed Solar System	
Mounting type	Parking Canopy and Elevated Structure
Solar system size (kW DC)	639
Number of sites	5
Projected 1st year production (kWh)	1,163,000
Solar offset of historical usage	80%

Solar vs SCE



The Look of Solar: Carports



Laguna Hills High School
Saddleback Valley USD

Chaffey High School
Chaffey JUHSD



The Look of Solar: Shade Structures



Tulita Elementary School
Redondo Beach Unified
School District



Jefferson Elementary School
Redondo Beach Unified School District

#1 Solar Partner for Education



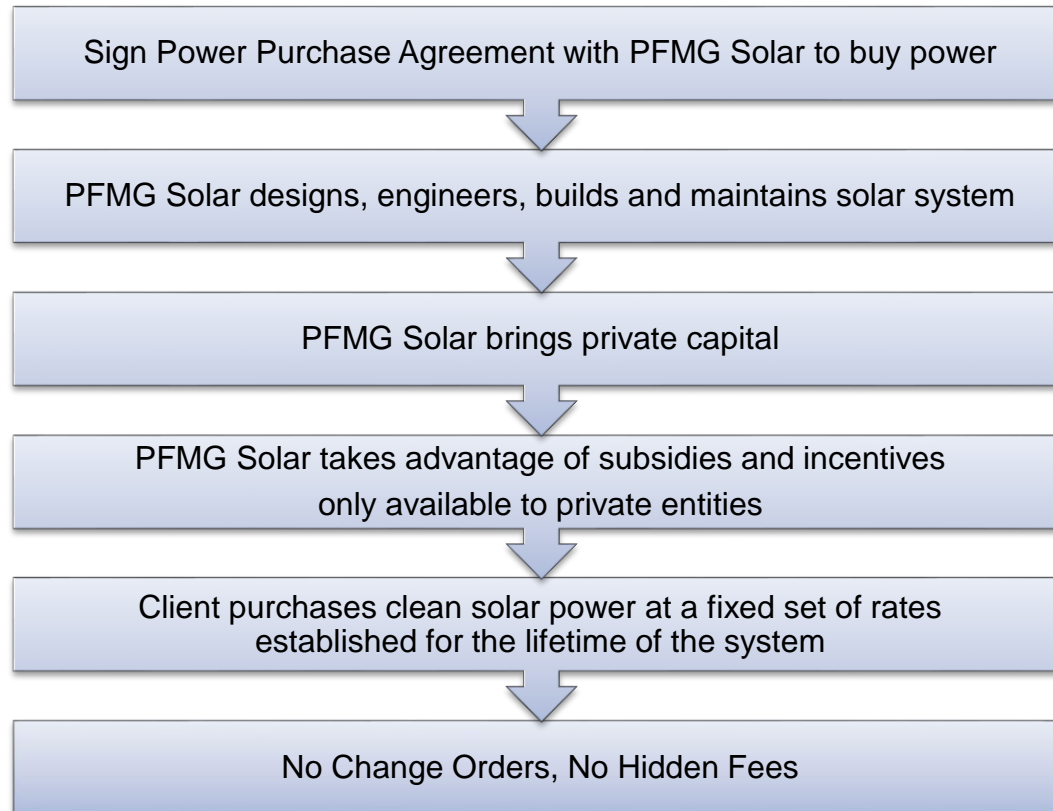
230 K-12 Schools at 28 Districts

PFMG Solar

- **The Solar Leader for Southern California Schools**
 - 230 schools at 28 school districts
 - Energy Engineered
 - No Change Orders
- **Partnership**
 - Exceptional Client References
 - Educational Enhancements (Internships, Mentoring Programs, Scholarships, SkillsUSA)
- **Construction with District Needs in Mind**
 - DSA experts- 100% close-out of DSA numbers
- **Safety**
 - Enhanced Electrical Safety Specifications



Power Purchase Agreement



California Government Code Section 4217

- **Designed to allow public agencies to take advantage of time sensitive incentives**
- **Provides flexibility and procurement for solar energy projects**

School District	Date of Approval
William S. Hart Union High School District	Board of Trustees Resolution Approval – February 16, 2011
County of Orange	Board of Supervisors Meeting Minutes – October 5, 2010
Palmdale School District	Board of Trustees Resolution Approval – April 27, 2010
Antelope Valley Union High School District	Execution of PPA - March 10, 2010
Castaic Union School District	Board of Trustees Approval – July 19, 2012
Hughes Elizabeth Lakes Union Elementary School District	Board of Trustees Resolution Approval – September 10, 2011
Keppel Union School District	Board of Trustees Approval – March 14, 2013
Wilsona School District	Board of Trustees Resolution Approval – May 19, 2011
Chaffey Joint Union High School District	Board of Trustees Approval – December 10, 2013
City of Palmdale	City Council Approval – August 1, 2012
Redondo Beach Union School District	Board of Trustees Approval – June 10, 2013
San Gabriel Unified School District	Board of Trustees Resolution Approval - August, 26, 2014
Pomona Unified School District	Board of Education Resolution Approval - November 12, 2014
Saddleback Valley Unified School District	Board of Education Resolution Approval – April 2, 2015
Alta Loma School District	Board of Trustees Approval – May 20, 2015



SCHEMATIC LAYOUT OF PROPOSED SOLAR SYSTEM

TABLE OF SOLAR ARRAYS

Location ID	Racking Type	Modules in Rise	# of Modules	Size DC kW	Azimuth	Tilt
A	Elevated	6	180	63.900	187°	7°
			180	63.900		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	Acton ES 1	V349R-000513	180	63.900	A

Arrays were designed assuming a crystalline silicon PV module of nominal power = 355W
Total estimated conduit length = 70 ft

NOTES

1. Results of easement reports may affect final placement of solar arrays
2. Trees and/or other obstructions will have to be removed, trimmed or relocated
3. A detailed analysis of the effect of shade on the arrays has not been performed
4. A soil analysis has not been performed
5. It is assumed that the site is not in a designated flood plain
6. Arrays may be divided into 4,000sf sections with a 1' gap for earthquake safety

LEGEND

-  Solar Array
-  Point of Interconnection
-  Proposed Conduit Run
-  Tree to be removed. Final count may vary



CONFIDENTIALITY STATEMENT
This drawing is the property of PFMG Solar LLC and is not to be disclosed to others without written consent from PFMG Solar LLC

Site Name:

ACTON ELEMENTARY SCHOOL AND DISTRICT OFFICE

Project name:

ACTON-AGUA DULCE UNIFIED SCHOOL DISTRICT

Site Address:

32248 CROWN VALLEY
ACTON, CA 93510

Revision:

S01

Date:

2/20/2018

Drawn by:

SAP



SCHEMATIC LAYOUT OF PROPOSED SOLAR SYSTEM

TABLE OF SOLAR ARRAYS

Location ID	Racking Type	Modules in Rise	# of Modules	Size DC kW	Azimuth	Tilt
A	Elevated	6	96	34.080	180°	7°
B	Elevated	6	126	44.730	150°	7°
			222	78.810		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	Agua Dulce ES	259000-052273	222	78.810	A,B

Arrays were designed assuming a crystalline silicon PV module of nominal power = 355W
Total estimated conduit length = 560 ft

NOTES

1. Results of easement reports may affect final placement of solar arrays
2. Trees and/or other obstructions will have to be removed, trimmed or relocated
3. A detailed analysis of the effect of shade on the arrays has not been performed
4. A soil analysis has not been performed
5. It is assumed that the site is not in a designated flood plain
6. Arrays may be divided into 4,000sf sections with a 1' gap for earthquake safety

LEGEND

-  Solar Array
-  Point of Interconnection
-  Proposed Conduit Run
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Site Name:

AGUA DULCE ELEMENTARY SCHOOL

Project name:

ACTON-AGUA DULCE UNIFIED SCHOOL DISTRICT

Site Address:

11311 FRASCATI STREET
SANTA CLARITA, CA 91390

Revision:

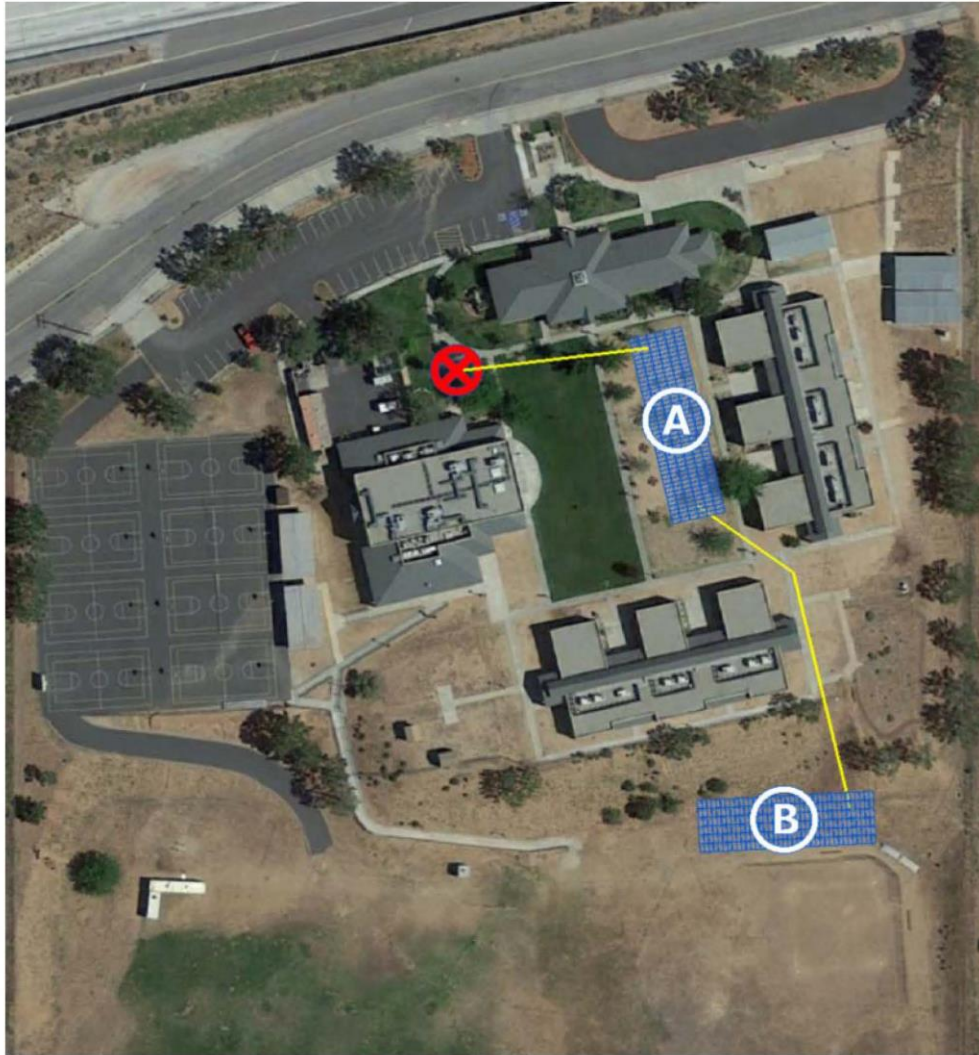
S01

Date:

2/20/2018

Drawn by:

SAP



SCHEMATIC LAYOUT OF PROPOSED SOLAR SYSTEM

TABLE OF SOLAR ARRAYS

Location ID	Racking Type	Modules in Rise	# of Modules	Size DC kW	Azimuth	Tilt
A	Elevated	6	252	89.460	257°	7°
B	Elevated	6	228	80.940	177°	7°
			480	170.400		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	High Desert MS	259000-058477	480	170.400	A,B

Arrays were designed assuming a crystalline silicon PV module of nominal power = 355W
Total estimated conduit length = 402 ft

NOTES

1. Results of easement reports may affect final placement of solar arrays
2. Trees and/or other obstructions will have to be removed, trimmed or relocated
3. A detailed analysis of the effect of shade on the arrays has not been performed
4. A soil analysis has not been performed
5. It is assumed that the site is not in a designated flood plain
6. Arrays may be divided into 4,000sf sections with a 1' gap for earthquake safety

LEGEND

-  Solar Array
-  Point of Interconnection
-  Proposed Conduit Run
-  Tree to be removed. Final count may vary



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Site Name:

HIGH DESERT MIDDLE SCHOOL

Project name:

ACTON-AGUA DULCE UNIFIED SCHOOL DISTRICT

Site Address:

3620 ANTELOPE WOODS
ACTON, CA 93510

Revision:

S01

Date:

2/20/2018

Drawn by:

SAP



SCHEMATIC LAYOUT OF PROPOSED SOLAR SYSTEM

TABLE OF SOLAR ARRAYS

Location ID	Racking Type	Modules in Rise	# of Modules	Size DC kW	Azimuth	Tilt
A	Elevated	6	348	123.540	180°	7°
			348	123.540		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	Meadowlark ES	259000-054018	348	123.540	A

Arrays were designed assuming a crystalline silicon PV module of nominal power = 355W
Total estimated conduit length = 444 ft

NOTES

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2. Trees and/or other obstructions will have to be removed, trimmed or relocated
3. A detailed analysis of the effect of shade on the arrays has not been performed
4. A soil analysis has not been performed
5. It is assumed that the site is not in a designated flood plain
6. Arrays may be divided into 4,000sf sections with a 1' gap for earthquake safety

LEGEND

-  Solar Array
-  Point of Interconnection
-  Proposed Conduit Run
-  Tree to be removed. Final count may vary



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Site Name:

MEADOWLARK ELEMENTARY SCHOOL

Project name:

ACTON-AGUA DULCE UNIFIED SCHOOL DISTRICT

Site Address:

3015 SACRAMENTO AVE
ACTON, CA 93510

Revision:

S01

Date:

2/20/2018

Drawn by:

SAP



SCHEMATIC LAYOUT OF PROPOSED SOLAR SYSTEM

TABLE OF SOLAR ARRAYS

Location ID	Racking Type	Modules in Rise	# of Modules	Size DC kW	Azimuth	Tilt
A	Carport	6	174	61.770	140°	7°
B	Carport	6	198	70.290	140°	7°
C	Carport	6	198	70.290	140°	7°
			570	202.350		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	Vasquez HS	V349R-000304	570	202.350	A,B,C

Arrays were designed assuming a crystalline silicon PV module of nominal power = 355W
Total estimated conduit length = 990 ft

NOTES

1. Results of easement reports may affect final placement of solar arrays
2. Trees and/or other obstructions will have to be removed, trimmed or relocated
3. A detailed analysis of the effect of shade on the arrays has not been performed
4. A soil analysis has not been performed
5. It is assumed that the site is not in a designated flood plain
6. Arrays may be divided into 4,000sf sections with a 1' gap for earthquake safety

LEGEND

-  Solar Array
-  Point of Interconnection
-  Proposed Conduit Run
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Site Name:

VASQUEZ HIGH SCHOOL

Project name:

ACTON-AGUA DULCE UNIFIED SCHOOL DISTRICT

Site Address:

33630 RED ROVER MINE
ACTON, CA 93510

Revision:

S01

Date:

2/20/2018

Drawn by:

SAP



Partners for Many Generations

Providing value to the Communities we serve

