



PFMG SOLAR

A Constellation Company



Los Alamitos Unified School District Operations Steering Committee

Presented by: Nancy Nien, Ph.D.,
Assistant Superintendent of Business Services
October 28, 2020



Solar Project Benefits

- **Positive Impact to Los Alamitos USD's General Fund**
 - \$16M in utility cost savings over 30 years
 - District only pays for energy produced through a Power Purchase Agreement with PFMG Solar
 - PFMG Solar responsible for all costs associated with installing and maintaining arrays
- **Shade for Students, Cars and the Community**
- **Educational Enrichment**
 - Next Generation Science Standards Modules
- **Environmental and Human Health Benefits**



The Look of Solar: Carports



Laguna Hills High School
Saddleback Valley USD



Orchard Hills School
Tustin Unified School District

The Look of Solar: Shade Structures



Tulita Elementary School
Redondo Beach Unified
School District



Coyote Canyon
Central School District

Solar Project Timeline

- **Contract Approval: October 2020**
- **Community Outreach: November 2020**
- **Design & Engineering: Q2 2021**
- **Construction Begins: Q3 2021**
- **Completion Expected : Q1-Q2 2022**



Solar Virtual Community Outreach Meetings

- **Meeting #1: McGaugh Elementary**
 - Monday, November 9 from 5:30 pm to 6:30 pm
- **Meeting #2: Rossmoor Elementary, Hopkinson Elementary, Lee Elementary, and Weaver Elementary**
 - Monday, November 16 from 5:30 pm to 6:30 pm
- **Meeting #3: Los Alamitos Elementary, McAuliffe Middle, Oak Middle**
 - Tuesday, November 17 from 5:30 pm to 6:30 pm
- **Meeting #4: Los Alamitos High and District Office**
 - Wednesday, November 18 from 5:30 pm to 6:30 pm

Additional Outreach

- Door hangers to adjacent properties
- Press release
- Local news
- District website
- Board meetings
- FAQs
- Google form feedback



Los Alamitos Unified School District Solar Initiative Frequently Asked Questions

What is the scope of the solar project the District is undertaking?


The Los Alamitos Unified School District has entered into a 30-year Power Purchase Agreement with PFMG Solar to buy electricity at a fixed rate at 10 sites. This solar project is estimated to save the District approximately \$16 million over the 30-year contract.

What is the cost to the District?


The District has no upfront cost or capital investment for the solar system. Third party ownership of the system allows the District to realize immediate savings and budget more effectively because of predictable future energy costs.

What is the project?

Solar panels will be installed on campuses in parking lots and open space. Solar shade structures in parking lots will provide shaded parking spots for faculty, students, and the community. Elevated solar structures provide shaded areas for students to gather and play. Moreover, the community will benefit from a reduction of more than 3,360 tons of carbon dioxide annually.



Parking Canopy



Elevated Structure

SCHOOL	TYPE OF INSTALLATION
District Office	Parking Canopy
Hopkinson Elementary School	Elevated Structure
Lee Elementary School	Elevated Structure
Los Alamitos Elementary School	Parking Canopy
Los Alamitos High School	Elevated Structure & Parking Canopy
McAuliffe Middle School	Elevated Structure & Parking Canopy
Mitchough Elementary School	Elevated Structure

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Meeting #1: McGaugh Elementary



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	108	43.200	270°	5°
B	Carport	4	180	72.000	211°	5°
C	Elevated	6	180	72.000	180°	5°
D	Elevated	6	180	72.000	180°	5°
			648	259.200		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	McGaugh ES 1	259000-059942	648	259.200	A,B,C,D

Arrays were designed assuming a crystalline silicon PV module of nominal power = 400W
Total estimated conduit length = 1185 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:

MCGAUGH ELEMENTARY SCHOOL

Project name:

LOS ALAMITOS USD

Site Address:

1698 BOLSA AVE
SEAL BEACH, CA 90740

Revision:

S01

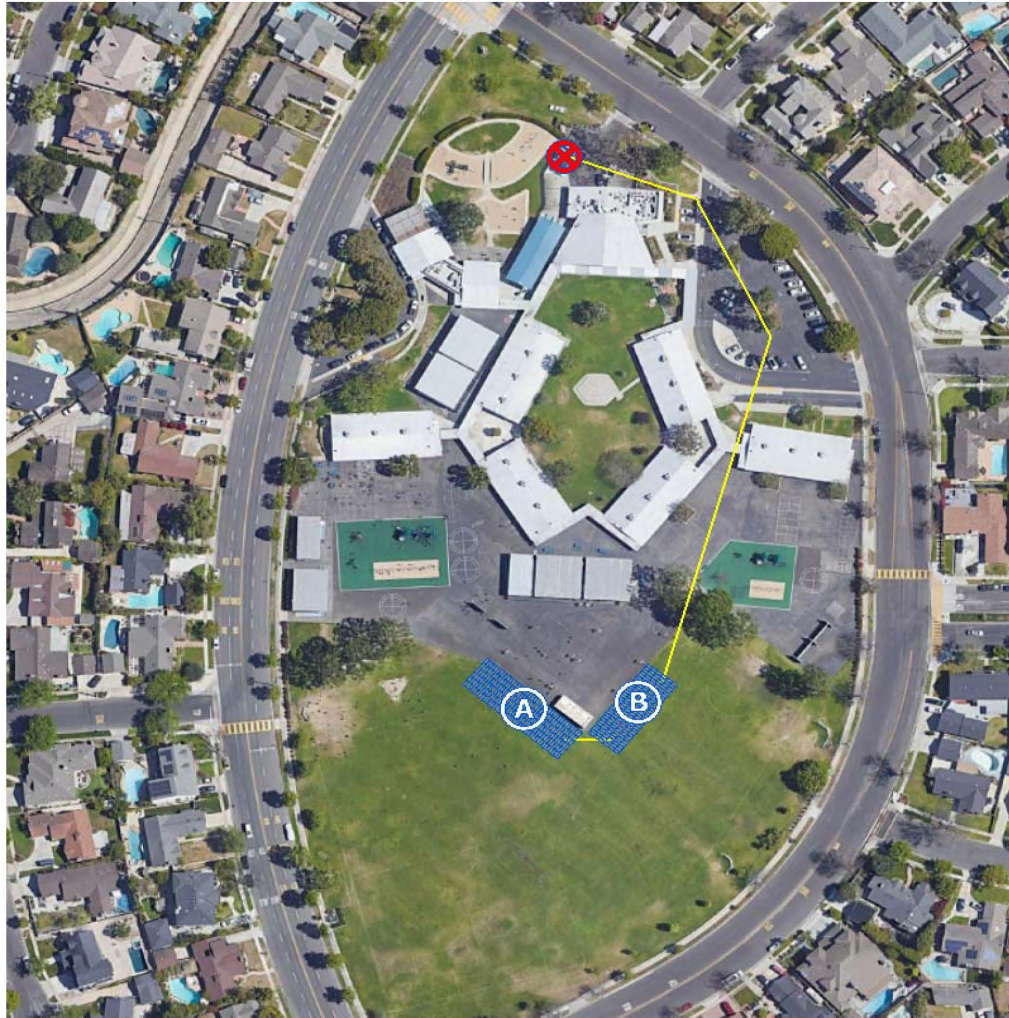
Date:

2/25/2020

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Meeting #2: Rossmoor Elementary



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	234	93.600	221°	5°
B	Elevated	6	180	72.000	128°	5°
			414	165.600		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	Rossmoor ES	259000-053656	414	165.600	A,B

Arrays were designed assuming a crystalline silicon PV module of nominal power = 400W
Total estimated conduit length = 784 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:

ROSSMOOR ELEMENTARY SCHOOL

Project name:

LOS ALAMITOS USD

Site Address:

3272 SHAKESPEARE DR
LOS ALAMITOS, CA 90720

Revision:

S01-L

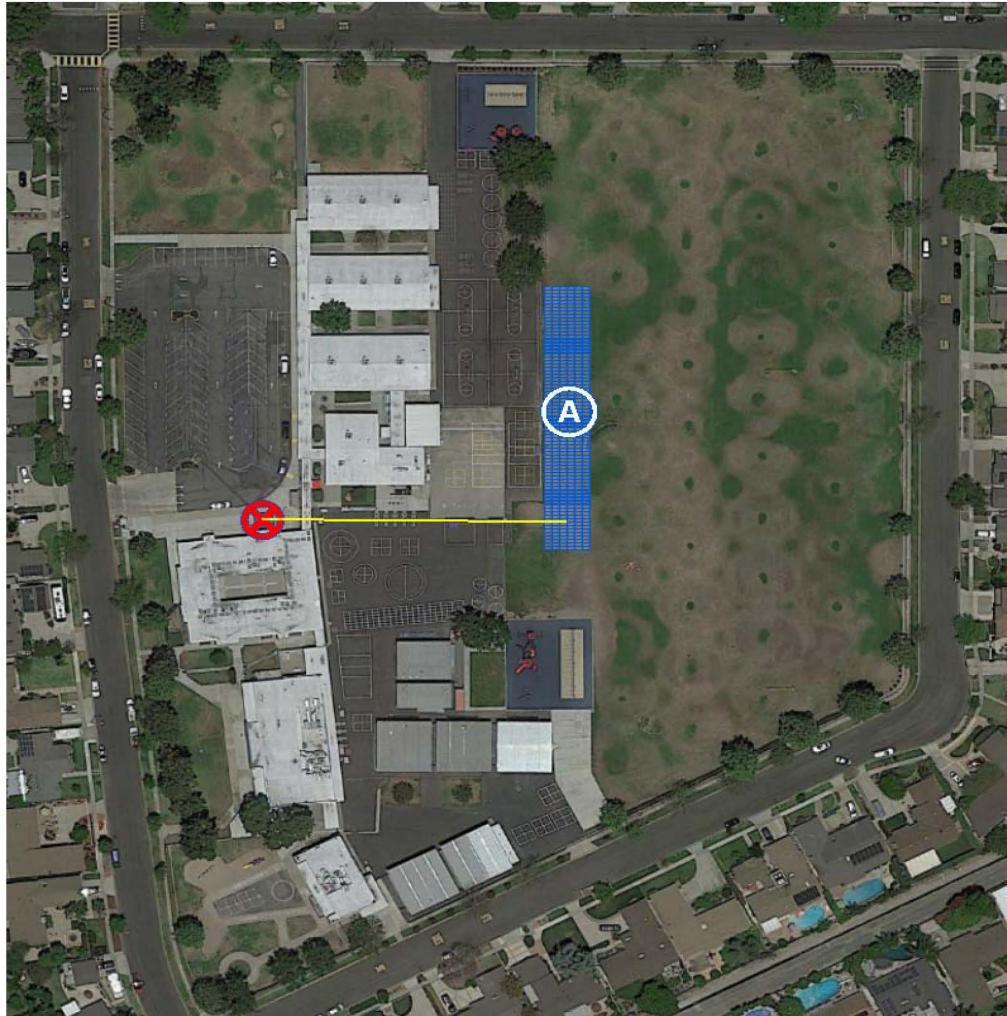
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Meeting #2: Hopkinson Elementary



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	450	180.000	270°	5°
			450	180.000		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	Hopkinson ES	V349N-017783	450	180.000	A

Arrays were designed assuming a crystalline silicon PV module of nominal power = 400W
Total estimated conduit length = 267 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:

HOPKINSON ELEMENTARY SCHOOL

Project name:

LOS ALAMITOS USD

Site Address:

12582 KENSINGTON RD
LOS ALAMITOS, CA 90720

Revision:

S01-L

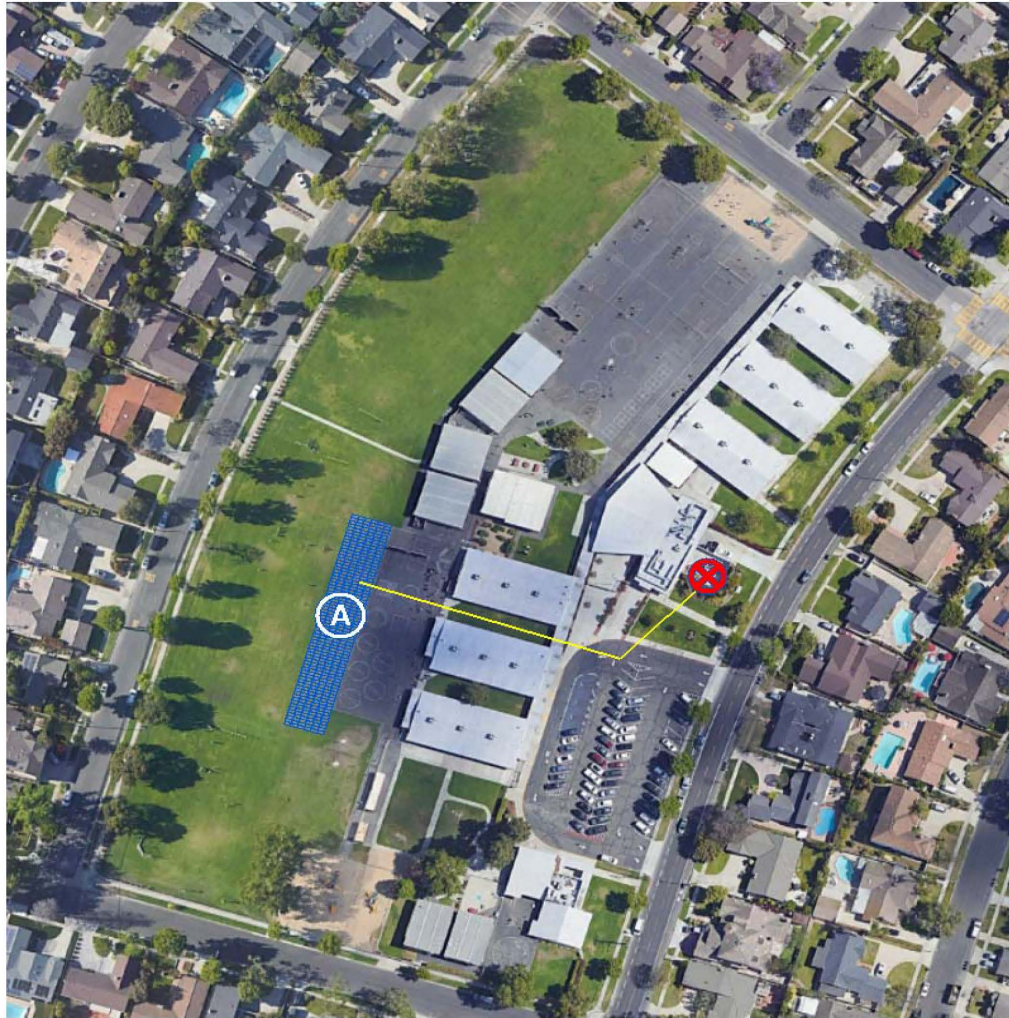
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2/25/2020

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Meeting #2: Lee Elementary



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	414	165.600	107°	5°
			414	165.600		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	Lee ES	V349N-010540	414	165.600	A

Arrays were designed assuming a crystalline silicon PV module of nominal power = 400W
Total estimated conduit length = 384 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:

LEE ELEMENTARY SCHOOL

Project name:

LOS ALAMITOS USD

Site Address:

11481 FOSTER RD
LOS ALAMITOS, CA 90720

Revision:

S01-L

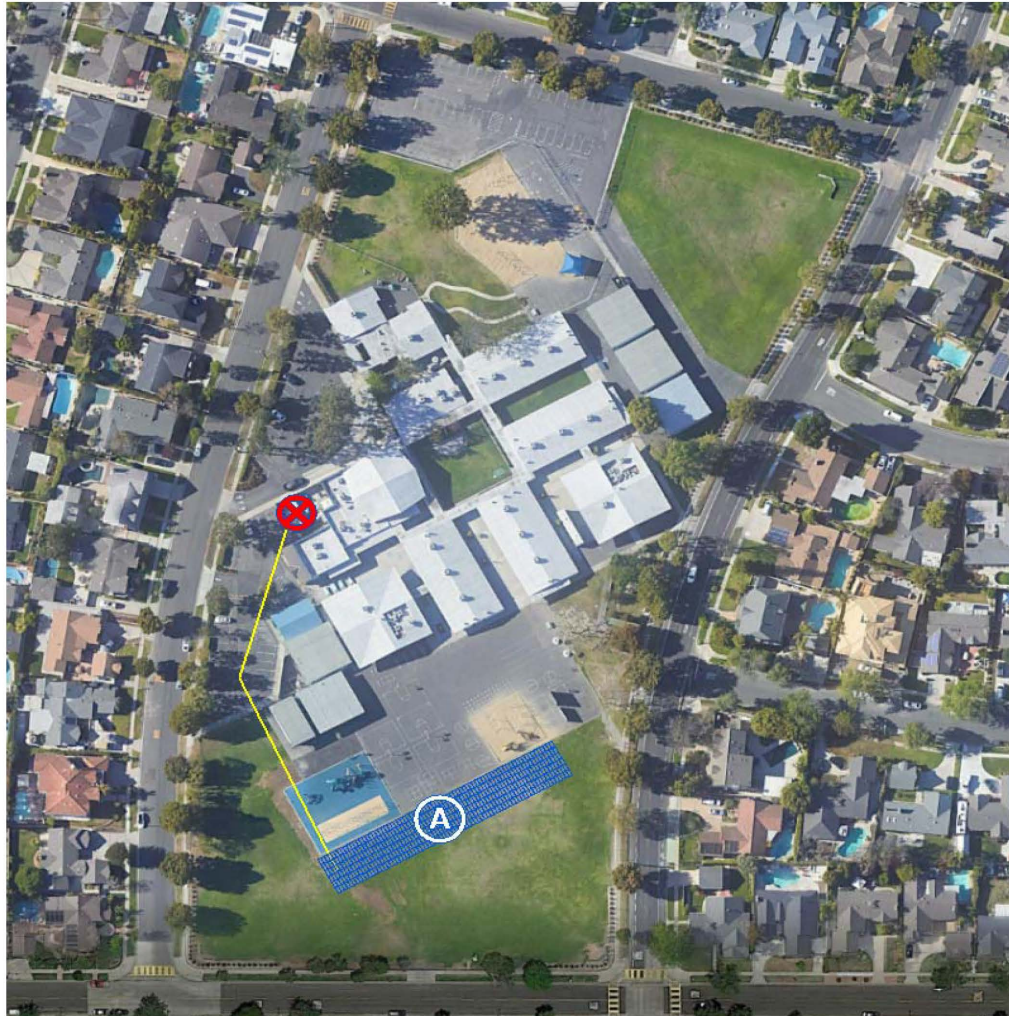
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2/25/2020

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Meeting #2: Weaver Elementary



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	450	180.000	151°	5°
			450	180.000		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	Weaver ES	259000-071739	450	180.000	A

Arrays were designed assuming a crystalline silicon PV module of nominal power = 400W
Total estimated conduit length = 398 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:

WEAVER ELEMENTARY SCHOOL

Project name:

LOS ALAMITOS USD

Site Address:

11872 WEMBLEY RD
LOS ALAMITOS, CA 90720

Revision:

S01-L

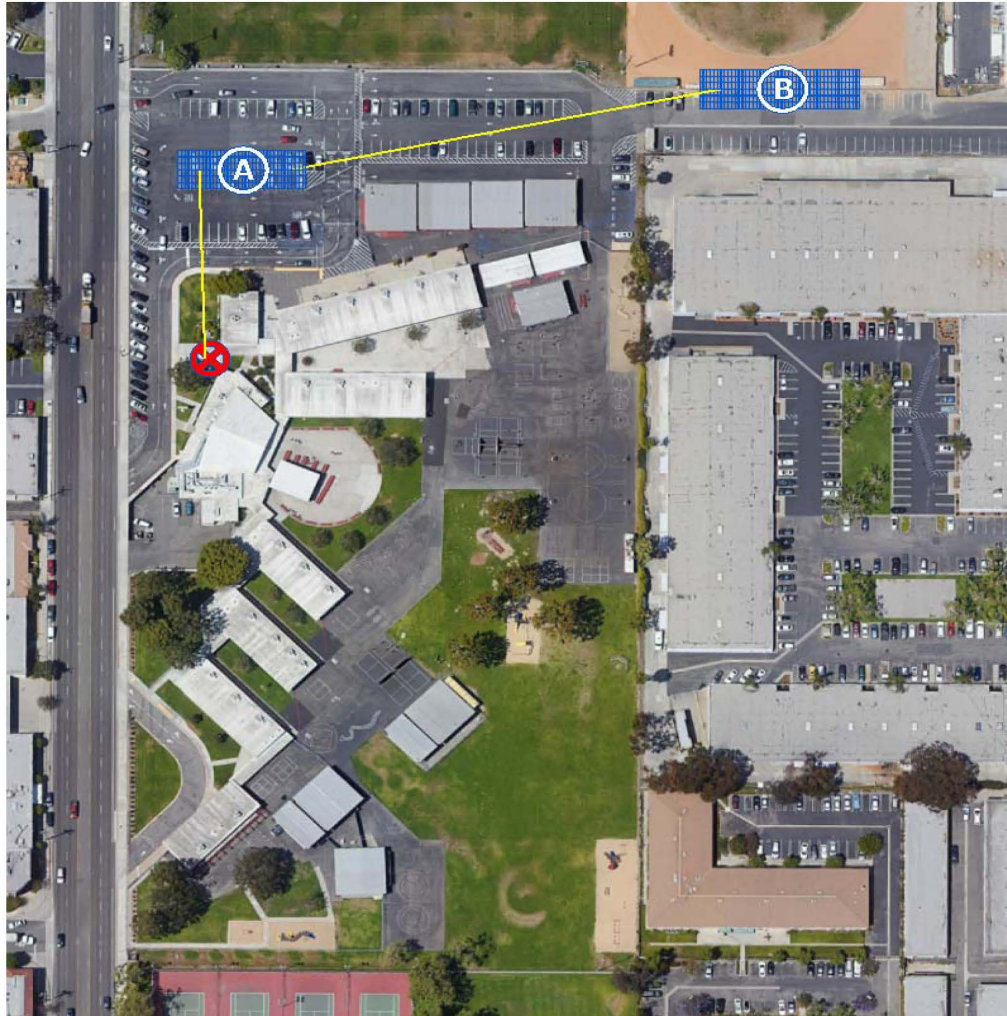
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Meeting #3: Los Alamitos Elementary



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	216	86.400	180°	5°
B	Carport	6	270	108.000	180°	5°
			486	194.400		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	Los Alamitos ES	259000-062868	486	194.400	A,B

Arrays were designed assuming a crystalline silicon PV module of nominal power = 400W
Total estimated conduit length = 610 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:

LOS ALAMITOS ELEMENTARY SCHOOL

Project name:

LOS ALAMITOS USD

Site Address:

10862 BLOOMFIELD ST
LOS ALAMITOS, CA 90720

Revision:

S01-L

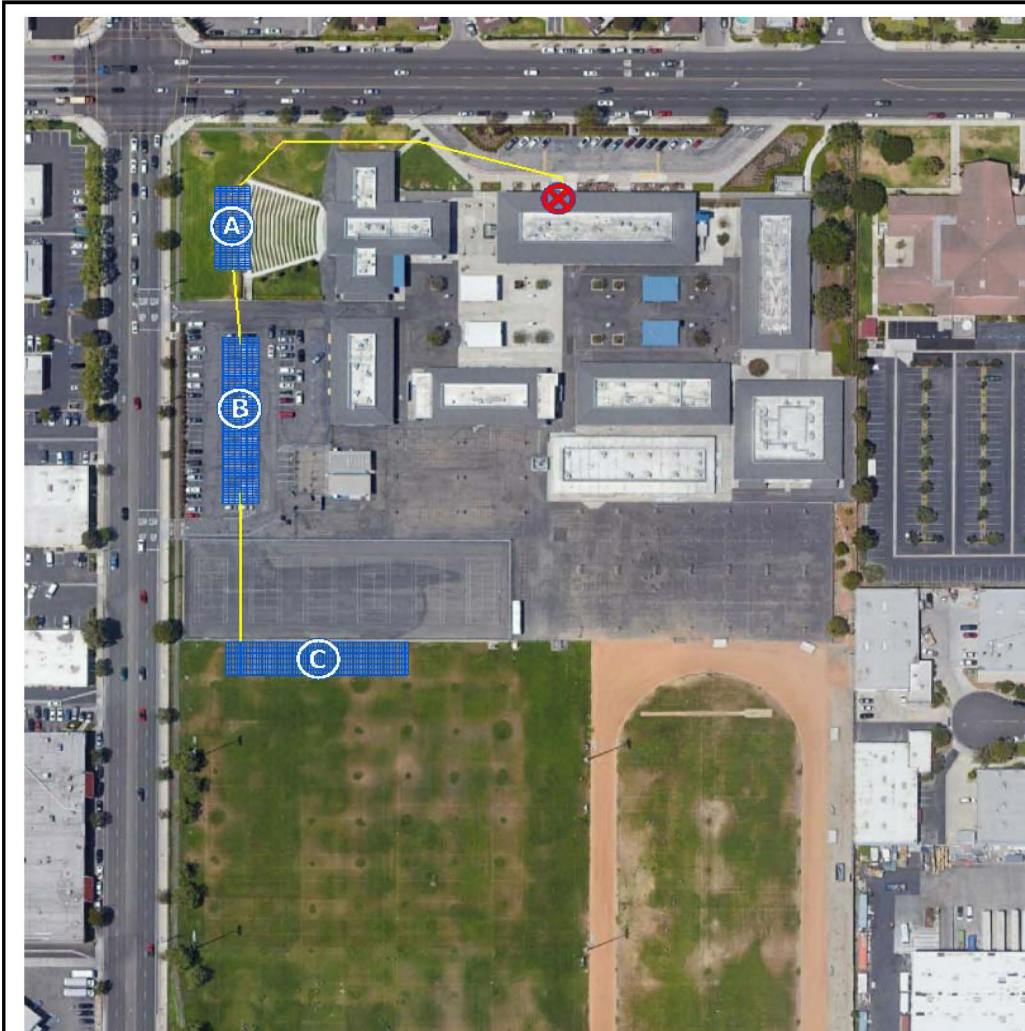
Date:

2/25/2020

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Meeting #3: McAuliffe Middle



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	72.000	270°	5°
B	Carport	6	360	144.000	270°	5°
C	Elevated	6	360	144.000	180°	5°
			900	360.000		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	McAuliffe MS	V349N-017542	900	360.000	A,B,C

Arrays were designed assuming a crystalline silicon PV module of nominal power = 400W
Total estimated conduit length = 733 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:

MCAULIFFE MIDDLE SCHOOL

Project name:

LOS ALAMITOS USD

Site Address:

4112 CERRITOS AVE
LOS ALAMITOS, CA 90720

Revision:

S01-L

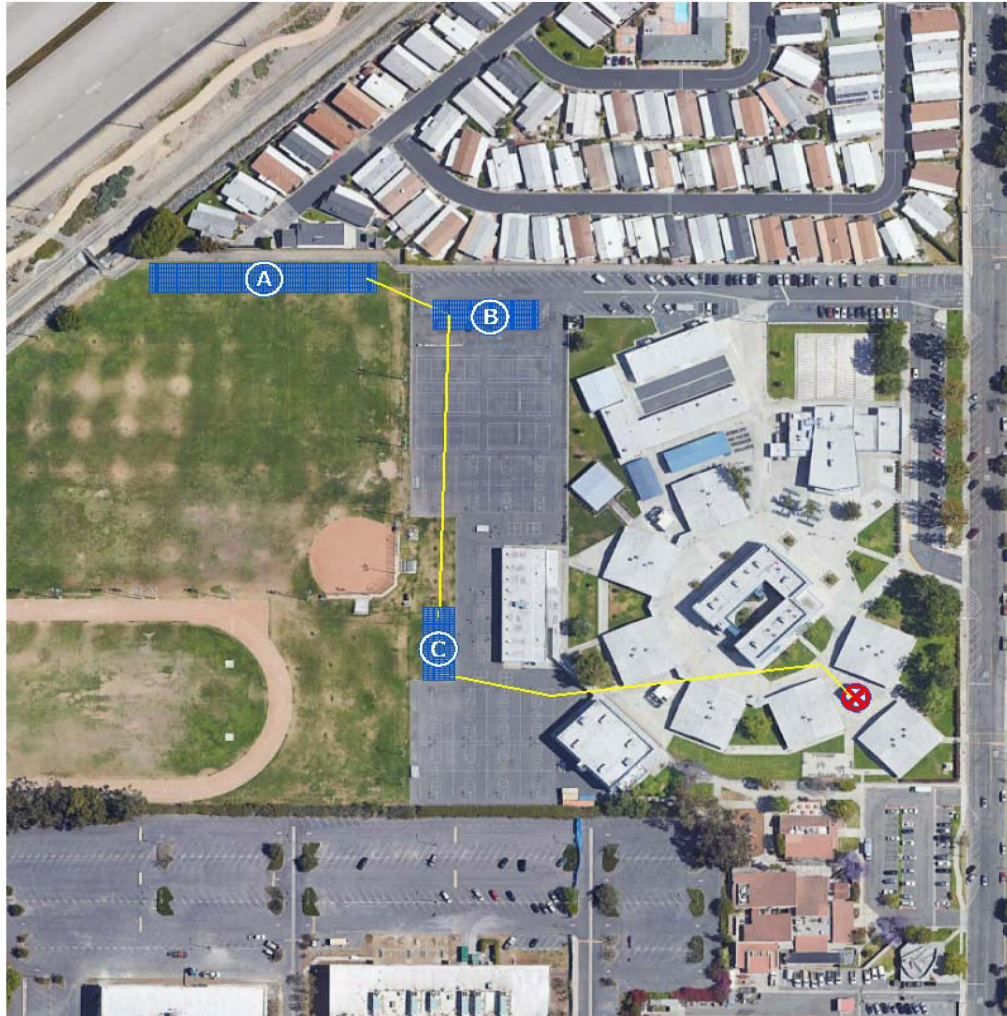
Date:

2/25/2020

Drawn by:

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Meeting #3: Oak Middle



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	504	201.600	180°	5°
B	Carport	6	234	93.600	180°	5°
C	Elevated	6	180	72.000	270°	5°
			918	367.200		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	Oak MS	V349N-000600	918	367.200	A,B,C

Arrays were designed assuming a crystalline silicon PV module of nominal power = 400W
Total estimated conduit length = 1075 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:

OAK MIDDLE SCHOOL

Project name:

LOS ALAMITOS USD

Site Address:

10821 OAK ST
LOS ALAMITOS, CA 90720

Revision:

S01-L

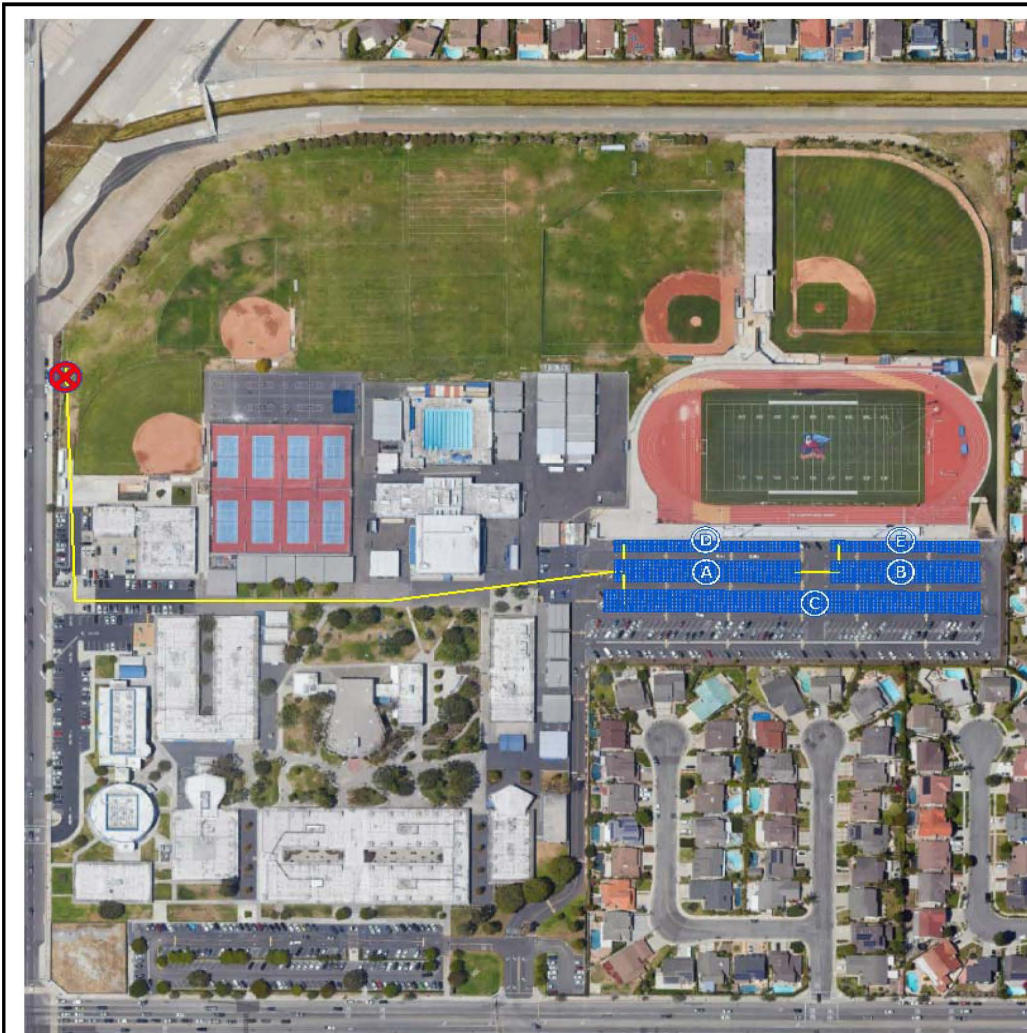
Date:

2/25/2020

Drawn by:

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Meeting #4: Los Alamitos High



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	558	223.200	181°	5°
B	Carport	6	450	180.000	181°	5°
C	Carport	6	1,134	453.600	181°	5°
D	Carport	3	279	111.600	181°	5°
E	Carport	3	225	90.000	181°	5°
			2,646	1,058.400		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	Los Alamitos HS	V349N-006307	2,646	1,058.400	A,B,C,D,E

Arrays were designed assuming a crystalline silicon PV module of nominal power = 400W
Total estimated conduit length = 1615 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
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Site Name:

LOS ALAMITOS HIGH SCHOOL

Project name:

LOS ALAMITOS USD

Site Address:

3591 CERRITOS AVE
LOS ALAMITOS, CA 90720

Revision:

S01-L

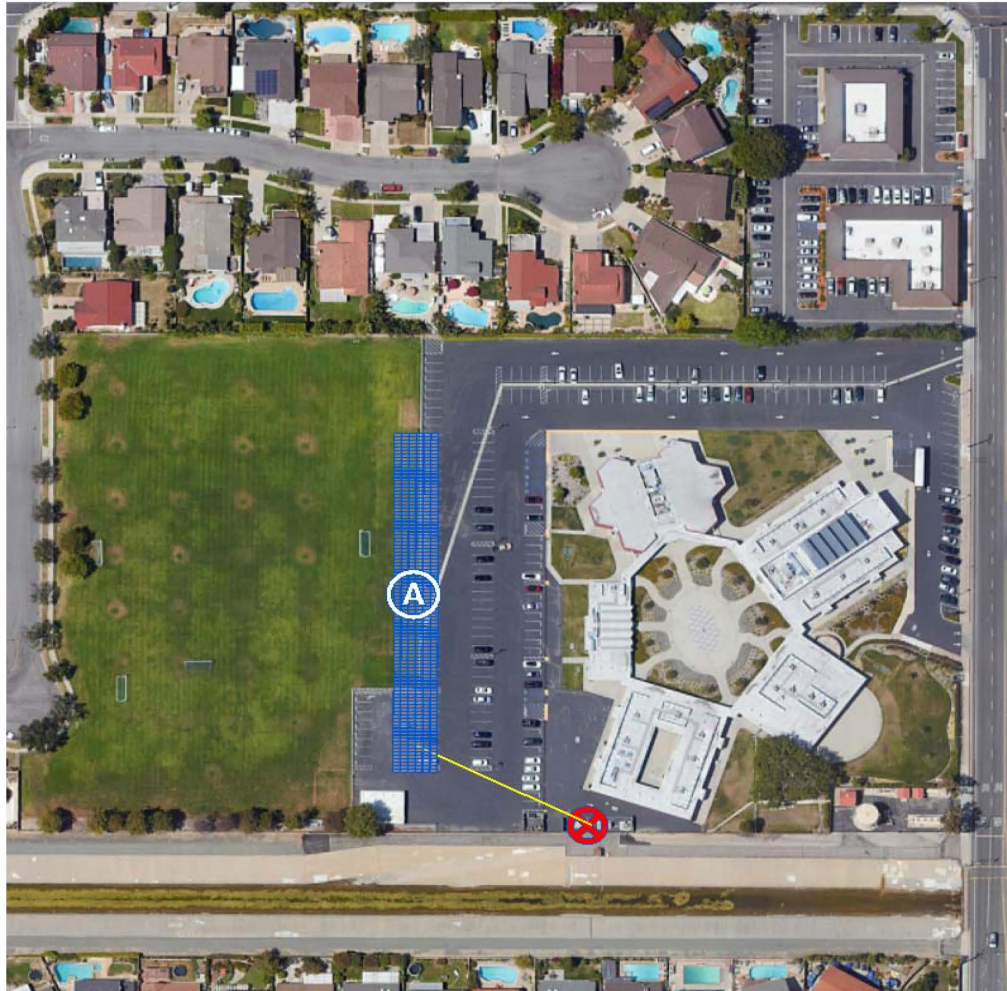
Date:

2/25/2020

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SAP

Meeting #4: District Office



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	594	237.600	271°	5°
			594	237.600		

TABLE OF UTILITY METERS





Location ID	Meter Name	Meter Number	# of Modules	Size DC kW	Connected to Arrays
	District Office	259000-042164	594	237.600	A

Arrays were designed assuming a crystalline silicon PV module of nominal power = 400W
Total estimated conduit length = 180 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:

DISTRICT OFFICE

Project name:

LOS ALAMITOS USD

Site Address:

10291 BLOOMFIELD ST
LOS ALAMITOS, CA 90720

Revision:

S01-L

Date:

2/25/2020

Drawn by:

SAP