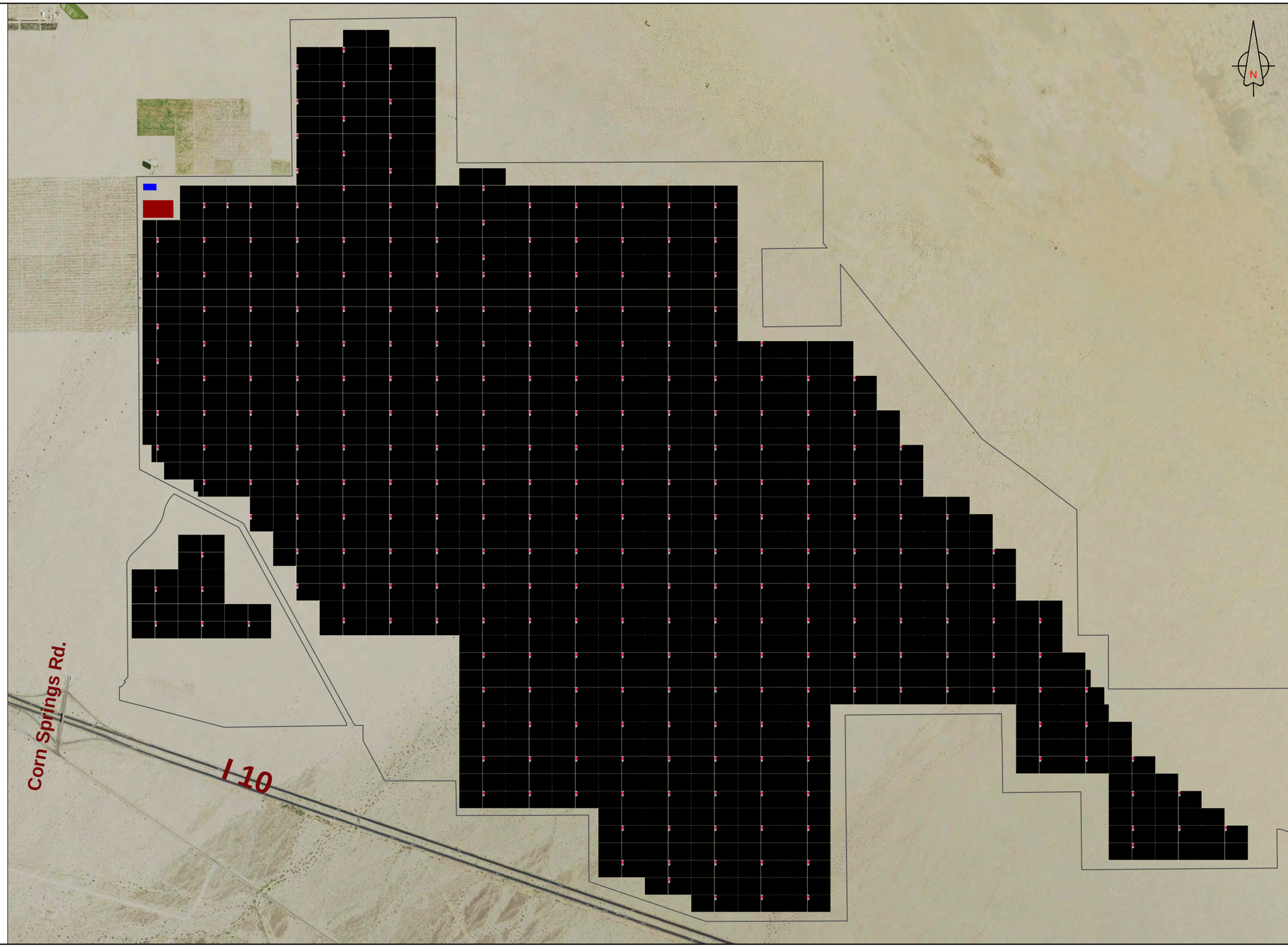
Appendix B

Site Layouts / Site Components

Conceptual



EDF- Renewable Energy
15445 Innovation Drive
San Diego, CA 92128

PROJECT OWNER

EDF- Renewable Energy
15445 Innovation Drive
San Diego, CA 92128

PROJECT ENGINEER

Job Name	Palen
Date	12/22/2015
Designed By	GM
Drawn By	
Checked By	

REVISION BLOCK

Symbol	Date	By	Revisions

Approximate Property Boundary

Typical PV Arrays

Pad-Mount Inverter/Transformer

Proposed Interconnection Facility

Proposed Parking/Laydown

LEGEND

AC Nameplate:	500.00 MW
DC Nameplate:	603.45 MWp
Layout Type:	HSAT
System Voltage:	1500 V
DC/AC Ratio:	1.21
Module Type:	c-Si
Module Wattage:	375.0 W
Inverter Type:	1.25 MW
Modules/String:	27
Module Inclination:	N/A
Module Azimuth:	N/A
GCR:	42.0 %
Modules per Block:	8046
No. of Blocks:	200
Block AC Nameplate:	2.50 MW
Block DC Nameplate:	3.02 MWp

PROJECT DETAILS

Palen
Riverside, CA
Lat. 33.6999°/ Long. -115.2182°

PROJECT NAME

CAPACITY LAYOUT

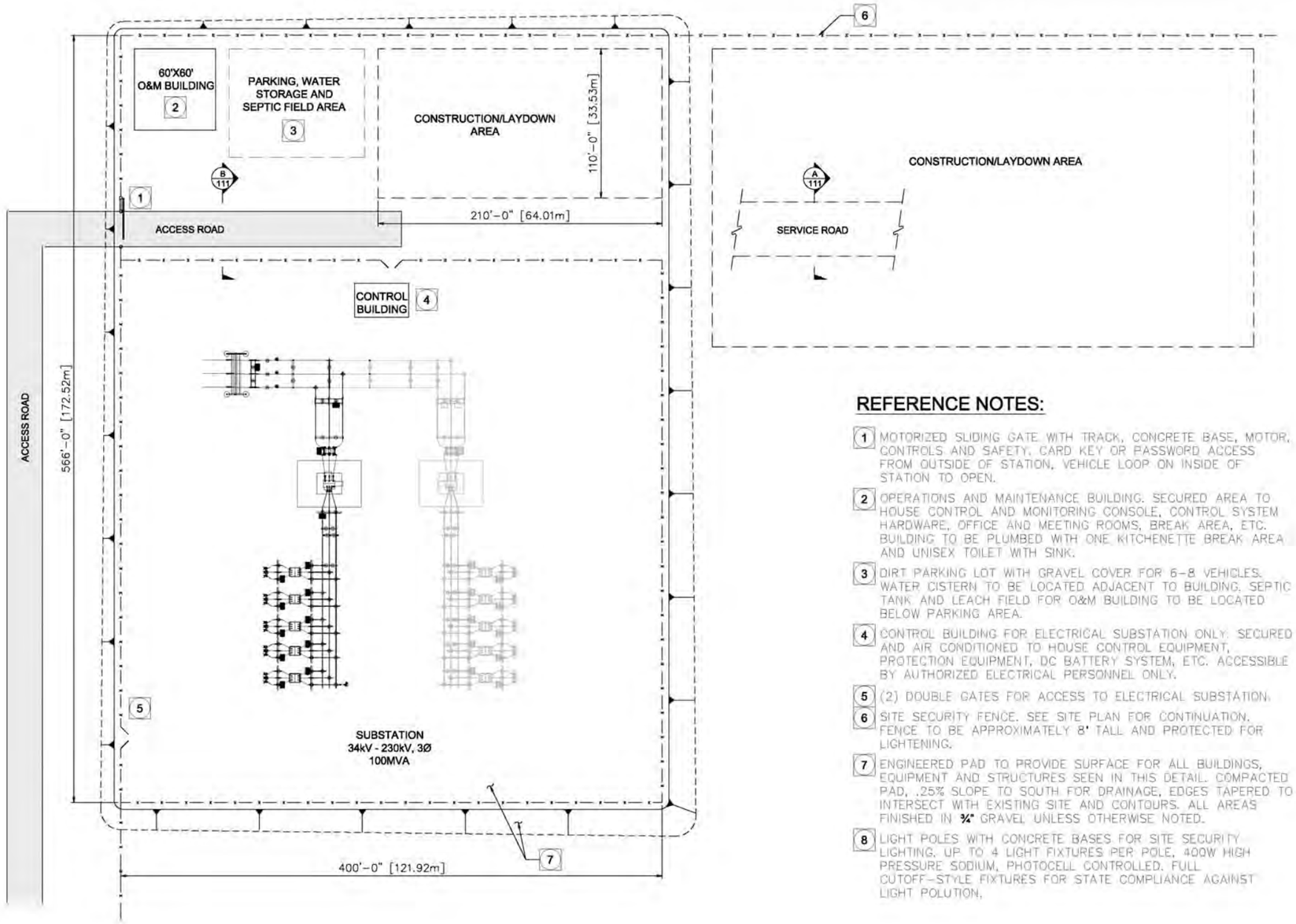
TITLE SHEET

1. Conceptual design. Actual design to be provided by contractor.
2. Drawings are preliminary and draft unless otherwise stated. Variations in system design can occur.
3. Designs, Layouts, Locations and any other information found in this or any linked set of drawings are property of EDF Renewable Energy Corp.
   Use of the drawings or any part of these drawings requires prior consent from EDF Renewable Energy Corp.
4. This drawing is for permitting purposes only. Not for Construction

NOTES

v.4

SHEET NO.



REFERENCE NOTES:

1. MOTORIZED SLIDING GATE WITH TRACK, CONCRETE BASE, MOTOR, CONTROLS AND SAFETY. CARD KEY OR PASSWORD ACCESS FROM OUTSIDE OF STATION, VEHICLE LOOP ON INSIDE OF STATION TO OPEN.
2. OPERATIONS AND MAINTENANCE BUILDING. SECURED AREA TO HOUSE CONTROL AND MONITORING CONSOLE, CONTROL SYSTEM HARDWARE, OFFICE AND MEETING ROOMS, BREAK AREA, ETC. BUILDING TO BE PLUMBED WITH ONE KITCHENETTE BREAK AREA AND UNISEX TOILET WITH SINK.
3. DIRT PARKING LOT WITH GRAVEL COVER FOR 6-8 VEHICLES. WATER CISTERN TO BE LOCATED ADJACENT TO BUILDING. SEPTIC TANK AND LEACH FIELD FOR O&M BUILDING TO BE LOCATED BELOW PARKING AREA.
4. CONTROL BUILDING FOR ELECTRICAL SUBSTATION ONLY. SECURED AND AIR CONDITIONED TO HOUSE CONTROL EQUIPMENT, PROTECTION EQUIPMENT, DC BATTERY SYSTEM, ETC. ACCESSIBLE BY AUTHORIZED ELECTRICAL PERSONNEL ONLY.
5. (2) DOUBLE GATES FOR ACCESS TO ELECTRICAL SUBSTATION.
6. SITE SECURITY FENCE. SEE SITE PLAN FOR CONTINUATION. FENCE TO BE APPROXIMATELY 8' TALL AND PROTECTED FOR LIGHTENING.
7. ENGINEERED PAD TO PROVIDE SURFACE FOR ALL BUILDINGS, EQUIPMENT AND STRUCTURES SEEN IN THIS DETAIL. COMPACTED PAD, .25% SLOPE TO SOUTH FOR DRAINAGE, EDGES TAPERED TO INTERSECT WITH EXISTING SITE AND CONTOURS. ALL AREAS FINISHED IN ¾" GRAVEL UNLESS OTHERWISE NOTED.
8. LIGHT POLES WITH CONCRETE BASES FOR SITE SECURITY LIGHTING. UP TO 4 LIGHT FIXTURES PER POLE, 400W HIGH PRESSURE SODIUM, PHOTOCELL CONTROLLED. FULL CUTOFF-STYLE FIXTURES FOR STATE COMPLIANCE AGAINST LIGHT POLUTION.

N

1"=40' 40' 0' 40' 80'

1"=10m 10m 0 10m 20m 30m

PRELIMINARY

Dimensions shown hereon are preliminary and subject to change as Design is completed.

REV.	DATE	DESCRIPTION	BY	APP.	CHKD
	1/26/09	POD SUBMITTAL	CS	MB	EF

PROJECT: Maverick Solar

BLM PLAN OF DEVELOPMENT

SITE DETAIL

12/22/2015

DATE: SHEET:

EDF renewable energy
15445 Innovation Drive
San Diego, CA 92128
1-(888)-463-6926

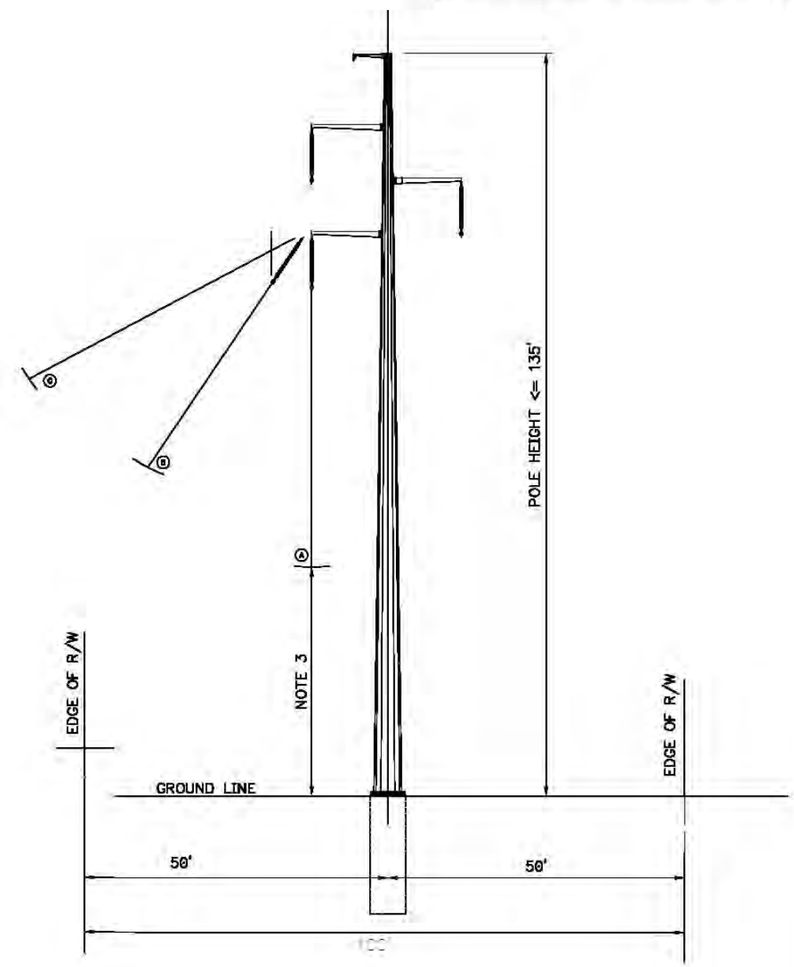
DRAWING NO. CIV-110

NOTES:
1. DIMENSIONS SHOWN FOR TYPICAL 230kV CIRCUITS
2. CONDUCTOR MOVEMENT AS SHOWN FOR REPRESENTATION ONLY. ACTUAL MOVEMENT ENVELOPE BASED UPON FINAL DESIGN
3. DESIGN GROUND CLEARANCE – 35 FT
4. FUTURE MAINTENANCE MAY REQUIRE TEMPORARY LANE CLOSURES AT EACH STRUCTURE LOCATION
5. CLOSEST APPROACH AT TOWER LOCATIONS, FOR LOAD CASE Ⓑ

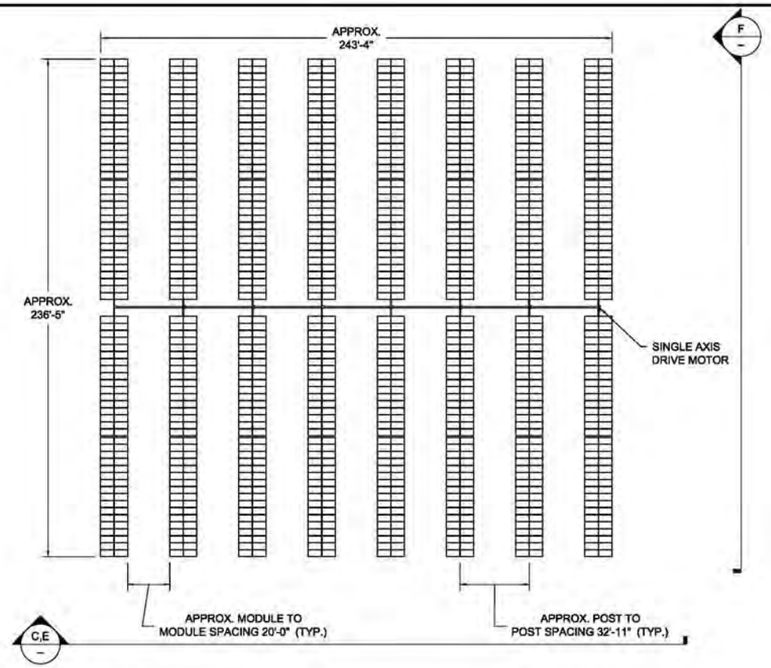
Ⓐ MAX SAG @ 212° F FINAL SAG
Ⓑ NESC BLOWOUT, 6psf WIND, 60°F
Ⓒ EXT WIND BLOWOUT, 85mph

SHOWN FOR:
LINE RATING: 150 MW
CONDUCTOR: 795 AAC 'ARBUTUS'
MAX SPAN: 1100 FT

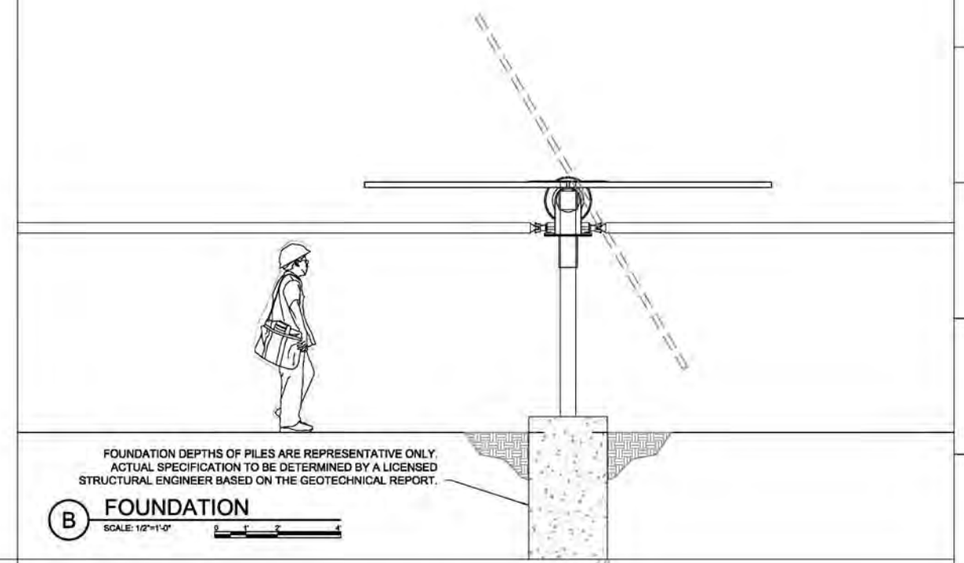
PRELIMINARY
NOT APPROVED FOR BIDDING OR FOR CONSTRUCTION



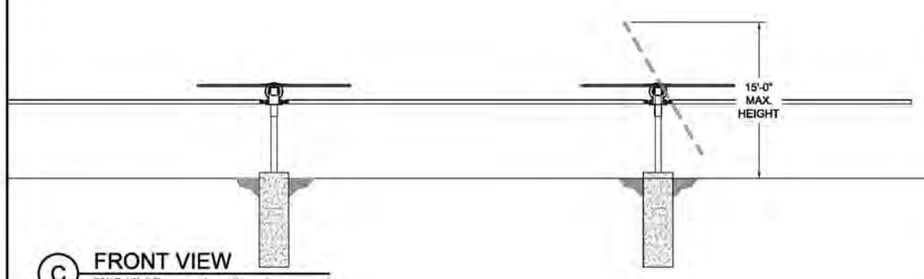
Preliminary **Maverick Solar Project** **December 22, 2016**	230–kV GENERATION TIE–LINE PRELIMINARY CONCEPT	EDF renewable energy



A ARRAY LAYOUT
SCALE: 1" = 30'

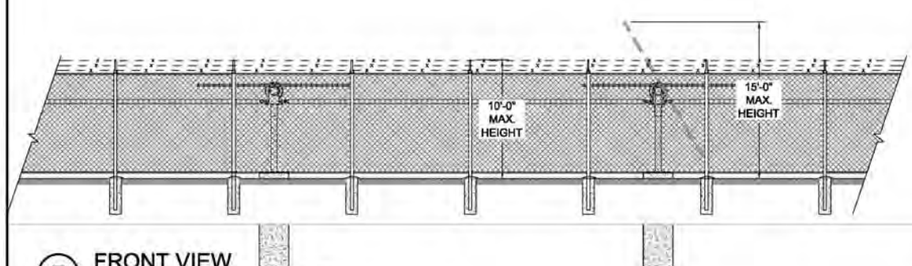


B FOUNDATION
SCALE: 1/2"=1'-0"

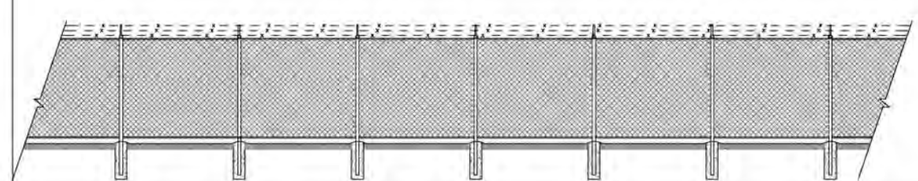


C FRONT VIEW
SCALE: 1/2"=1'-0"

D ISOMETRIC
SCALE: NTS



E FRONT VIEW
SCALE: 1/2"=1'-0"



F SIDE VIEW
SCALE: 1/2"=1'-0"

edf renewable energy

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San Diego, CA 92128
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PROJECT OWNER:

ELECTRICAL ENGINEERING:

Job Name	Maverick Solar
Date	12/22/2015
Designed By	
Drawn By	
Checked By	

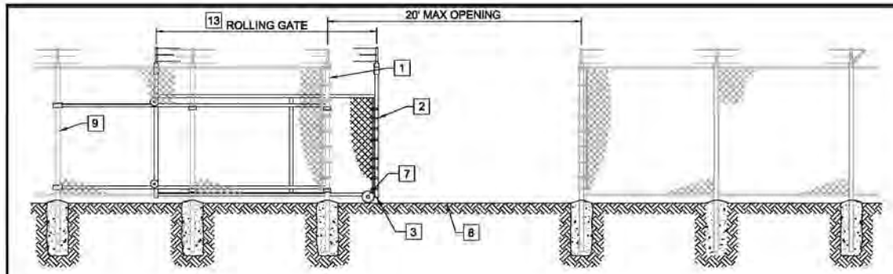
REVISION BLOCK

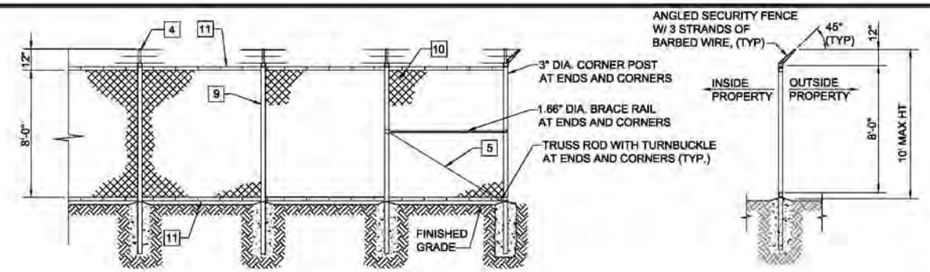
Symbol	Date	By	Revisions
-	-	---	---

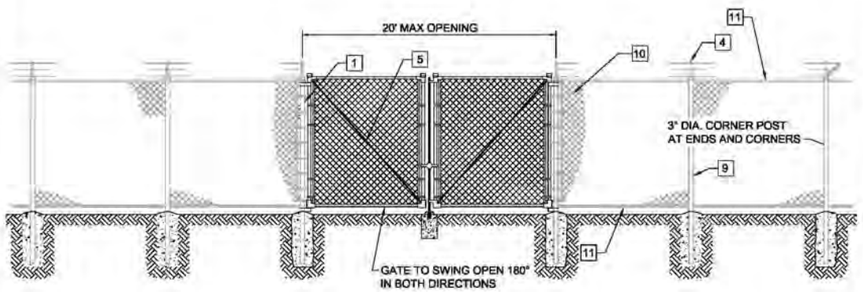
PROJECT NAME

TITLE SHEET: 15'ARRAY PLAN AT FENCE

SHEET NO. E-402







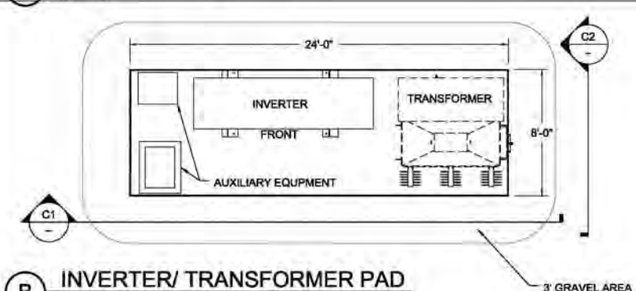
NOTES:

1. TERMINAL POST 3" DIA. X 0.110" THICK MIN. X 10'-0" O.C. MAX. (TYP).
2. STANDARD ROLLING GATE HARDWARE, SIZE FOR 20'-0" MAX. CLEAR ACCESS WHEN OPEN, ONE SIDE.
3. 2" CLEAR SPACING ALLOWED AT BOTTOM FOR EASE OF ROLLING GATE OPEN.
4. GATE HEIGHT IS 8' HIGH WITH 12" FENCE TOP ANGLED AT 45° TO THE OUTSIDE OF THE ENCLOSED ARRAY FIELD. ANGLED FENCE TOP TO BE INSTALLED SUCH AS TO ALLOW GATE TO ROLL OPEN WITHOUT CONFLICT FROM STATIONARY FENCE.
5. STEEL TENSION WIRE.
6. NOT USED.
7. NOT USED.
8. SOIL SHALL BE COMPACTED TO ALLOW GATE WHEELS TO ROLL FREELY THE ENTIRE SPAN AND EASILY OPEN THE GATE.
9. TYPICAL INTERIOR POST.
10. WIRE FABRIC 9 GAGE, 2" MESH KNUCKLED TOP AND BOTTOM SELVAGES.
11. 1.66" DIAMETER TOP AND BOTTOM RAIL. RAIL SHALL BE INSTALLED 2" FROM FINISHED SURFACE.
12. NOT USED

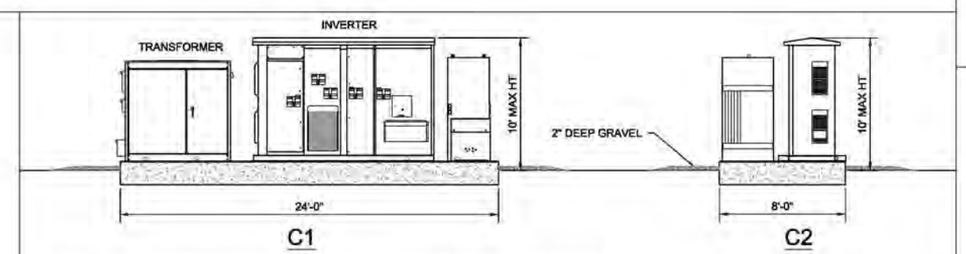
FENCE NOTES:

1. ALL VERTICAL POSTS TO BE COATED WITH TYPE A ZINC COATING @ 2.0 OZ/SQ.FT.
2. ALL INTERIOR VERTICAL POSTS SHALL BE 2 1/2" DIA. X 0.110" THICK MIN. X 10'-0" O.C. MAX. (TYP).
3. ALL FENCE FABRIC TO BE 2 IN. 9 GAGE MESH STEEL WIRE FABRIC COATED WITH ASTM A 491 TYPE I 0.40 OZ/SQ. FT.
4. PERMANENT FENCING SHALL BE A FENCE WITH 8-FEET-0-INCHES OF CHAIN LINK FABRIC AND TOP AND BOTTOM RAILS. THE BOTTOM RAIL SHALL BE WITHIN TWO INCHES ABOVE THE FINISH GRADE. PLACE THREE STRANDS OF BARBED WIRE ON EXTENSION ARMS FOR A TOTAL MAX. FENCE HEIGHT OF 10-FEET-0-INCHES ABOVE GRADE.
5. TWO ACCESS GATES SHALL BE INCLUDED;
   1) A 20 FOOT MAX ROLLING GATE SHALL BE INSTALLED AT THE MAIN ENTRANCE.
   2) A 20 FOOT MANUAL SWING GATE SHALL BE INSTALLED AT THE SECONDARY ENTRANCE.

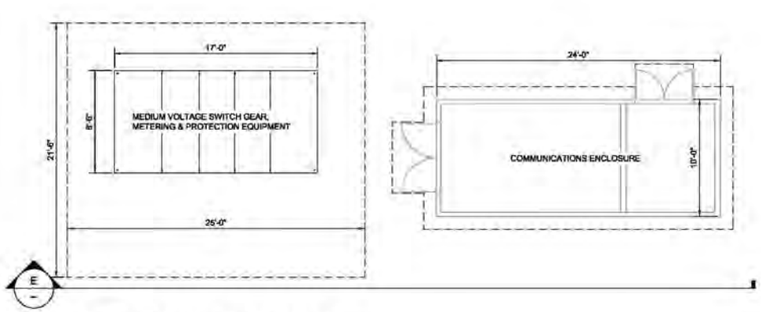
A FENCE DETAILS
SCALE: NTS



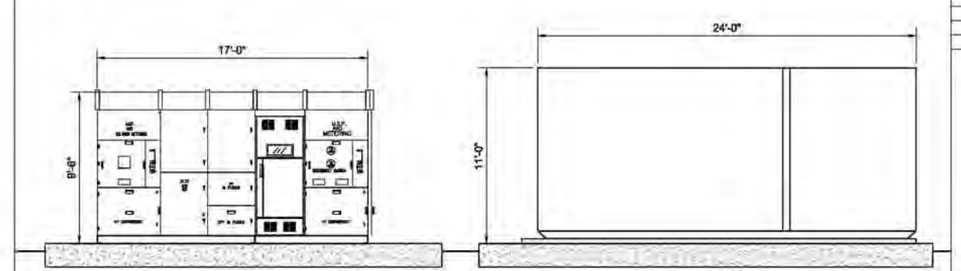
B INVERTER/ TRANSFORMER PAD
SCALE: 1/4"=1'-0"



C INVERTER/ TRANSFORMER PAD ELEVATIONS
SCALE: 1/4"=1'-0"



D SWITCHGEAR CONCRETE PAD
SCALE: 1/4"=1'-0"



E SWITCHGEAR ELEVATIONS
SCALE: 1/4"=1'-0"

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San Diego, CA 92128
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PROJECT OWNER:

ELECTRICAL ENGINEERING:

Job Name	Maverick Solar
Date	12/22/2015
Designed By	
Drawn By	
Checked By	

REVISION BLOCK

Symbol	Date	By	Revisions
-	-	---	---

PROJECT NAME

TITLE SHEET **FENCE AND EQUIPMENT ELEVATIONS**

SHEET NO. **E-403**

Appendix C

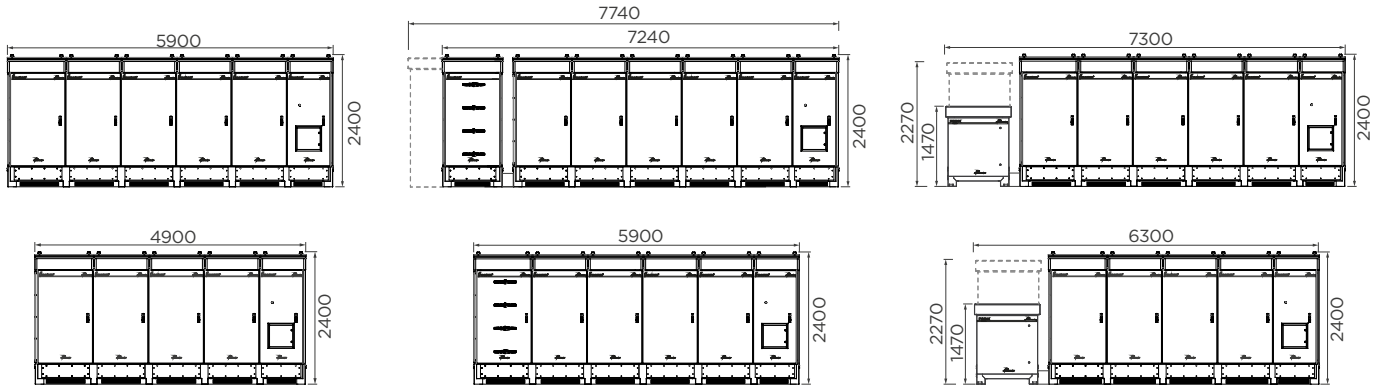
Example Equipment Specifications

HEC

TECHNICAL CHARACTERISTICS

1500VDC

	565VAC	600VAC			645VAC		690VAC	
	FR4	FR2	FR3	FR4	FR3	FR4	FR3	FR4
NUMBER OF MODULES	8	5	8	10	7	10	7	10
REFERENCE	FS1880CH**15**	FS1000CH**15**	FS1600CH**15**	FS2000CH**15**	FS1500CH**15**	FS2150CH**15**	FS1600CH**15**	FS2300CH**15**
AC Output Power(kW) @50°C; PF=0.9	1880	1000	1600	2000	1500	2150	1600	2300
AC Output Power(kVA/kW) @50°C; PF=1	2090	1110	1780	2220	1670	2380	1790	2550
AC Output Power(kVA/kW) @25°C; PF=1	2510	1330	2130	2260	2000	2860	2140	3060
Max. AC Output Current (A) @25°C	2560	1280	2050	2560	1820	2560	1820	2560
Operating Grid Voltage(VAC) (±10%)	565Vac	600Vac			645Vac		690Vac	
Operating Range, Grid Frequency	50Hz / 60Hz							
Current Harmonic Distortion (THDi)	< 3% at any load condition							
Power Factor (cosine phi) [1]	0.00 leading ... 0.00 lagging adjustable/ Reactive Power injection at night							
Power Curtailment (kVA)	0...100% / 0.1% Steps							
Minimum MPPt voltage	800V	849V			913V		976V	
MPPt @full power 50°C (VDC) [1]	821V–1250V	872V - 1250V			935V - 1250V		1001V - 1250V	
Maximum DC and Starting voltage	1500V							
Max. DC Current (A) @50°C	2600	1300	2080	2600	1820	2600	1820	2600
Max. DC shortcircuit current (A)	3380	1690	2704	3380	2366	3380	2366	3380
Efficiency (η)	98.4% (Maximum) / 98.1% (Euroeta) / 98.2% (CEC)							
Max. Standby Consumption (Pnight)	< approx. 40W/per module							
Control Power Supply	1kVA Standard – Optional 5kVA							
UPS backup system	Optional 400V- 700VAh Internal UPS-(LVRT compatible units are equipped as standard)							
Degree of protection	IP54, NEMA 3R							
Permissible Ambient Temperature[2]	-30°C to +50°C, >50°C Active Power derating							
Relative Humidity	4% to 100% Condensing							
Max. Altitude (above sea level)	1000m; >1000m power derating 1% Sn (kVA) per 100m							
Noise level[3]	< 70 dBA							
Interface	Alphanumeric Display / Optional Freesun App display or Web display							
Communication	RS232 / RS485 / USB / Ethernet, (Modbus RTU Protocol, Modbus TCP/IP)							
Analogue Inputs	1 programmable and differential inputs; (0-20mA or ± 10mV to ± 10V) and PT100							
String Supervisor Communication	RS485 / Modbus RTU							
Plant Controller Communication	Ethernet / Modbus TCP/IP							
Digital Outputs	1 electrically-isolated programmable switched relays (250VAC, 8A or 30VDC, 8A)							
Ground Fault Protection	Floating PV array: Isolation Monitoring per MPP Grounded PV array (Positive pole or negative pole): GFDI protection							
Humidity control	Active Heating							
ON / OFF Selector	Standard / Optional ON/OFF pushbutton							
General AC Protection & Disconn.	Circuit Breaker / Optional AC switch and fuses							
General DC Protection & Disconn.	Optional External Disconnecting Unit Cabinet (DC fuse protection and on-load disconnector with external operating handle)							
Overvoltage Protection	AC, DC Inverter and auxiliary supply type 2 - Internal Standard							
DC Lightning Protection	Optional (Integrated in the inverter)							



NOTES

[1] Consult P-Q charts available: Q(kVAr)=√(S(kVA)²-P(kW)²), V_{DC} restrictions
[2] <-20°C Optional drying kit available.
[3] Sound pressure level at a distance of 1m from the rear part.

*Depth of all units is 1020mm. Please consult hardware and installation manual for additional information on dimensions and weights.

*Preliminary values. Revision 25/03/2015

CanadianSolar

DOUBLE-GLASS MODULE

DIAMOND CS6X-310/315/320P-FG

Canadian Solar's Diamond CS6X-P-FG module is a 72 cell double-glass module. By replacing the traditional polymer backsheet with heat-strengthened glass, the Diamond module has a lower annual power degradation than a traditional module and better protection against the elements, making it more reliable and durable during its lifetime.

KEY FEATURES

Anti-PID module
- Anti-PID cell technology
- Anti-PID encapsulation technology

Lower annual power degradation & more system power yield over lifetime
- First year annual degradation 2.5%, each subsequent year 0.5%
- 85.5% power output at year 25
- 83% power output at year 30

Better fire protecting performance
- Fire class A certified according to fire test IEC 61730-2 / MST 23
- Certified for fire type 3 according to UL 1703

Designed for high voltage systems of up to 1500 V_{DC}, saving BoS costs

Sea/waterside PV system installation
- Glass backside blocks moisture permeability
- No module-level corrosion

5400 Pa snow load, 2400 Pa wind load

MANAGEMENT SYSTEM CERTIFICATES*

ISO 9001:2008 / Quality management system
ISO/TS 16949:2009 / The automotive industry quality management system
ISO 14001:2004 / Standards for environmental management system
OHSAS 18001:2007 / International standards for occupational health & safety

PRODUCT CERTIFICATES*

IEC 61215 / IEC 61730: VDE / CE
UL 1703: CSA / PV CYCLE (EU)

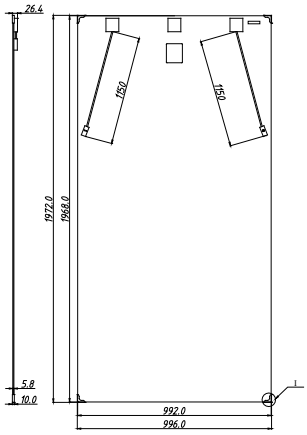
* As there are different certification requirements in different markets, please contact your local Canadian Solar sales representative for the specific certificates applicable to the products in the region in which the products are to be used.

CANADIAN SOLAR INC. is committed to providing high quality solar products, solar system solutions and services to customers around the world. As a leading manufacturer of solar modules and PV project developer with about 10 GW of premium quality modules deployed around the world since 2001, Canadian Solar Inc. (NASDAQ: CSIQ) is one of the most bankable solar companies worldwide.

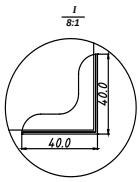
CANADIAN SOLAR INC.
545 Speedvale Avenue West, Guelph, Ontario N1K 1E6, Canada, www.canadiansolar.com, support@canadiansolar.com

MODULE / ENGINEERING DRAWING (mm)

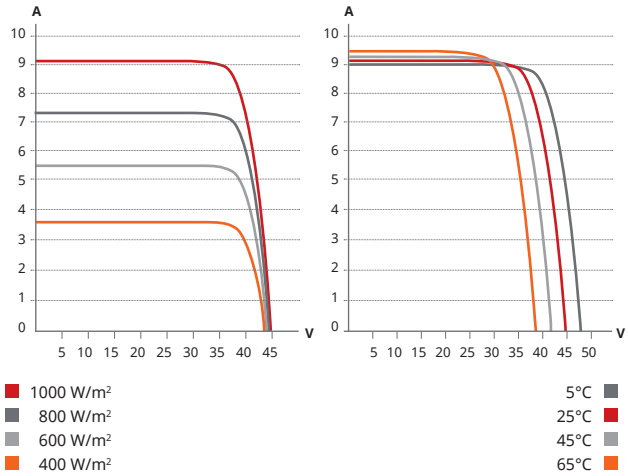
Rear View



Corner Protector Detail



CS6X-310P-FG / I-V CURVES



ELECTRICAL DATA / STC*

Electrical Data CS6X	310P-FG	315P-FG	320P-FG
Nominal Max. Power (Pmax)	310 W	315 W	320 W
Opt. Operating Voltage (Vmp)	36.4 V	36.6 V	36.8 V
Opt. Operating Current (Imp)	8.52 A	8.61 A	8.69 A
Open Circuit Voltage (Voc)	44.9 V	45.1 V	45.3 V
Short Circuit Current (Isc)	9.08 A	9.18 A	9.26 A
Module Efficiency	15.88%	16.14%	16.39%
Operating Temperature	-40°C ~ +85°C		
Max. System Voltage	1500 (IEC) or 1000 V (UL)		
Module Fire Performance	Type 3 (UL 1703) or CLASS A (IEC 61730)		
Max. Series Fuse Rating	15 A		
Application Classification	Class A		
Power Tolerance	0 ~ + 5 W		

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

ELECTRICAL DATA / NOCT*

Electrical Data CS6X	310P-FG	315P-FG	320P-FG
Nominal Max. Power (Pmax)	225 W	228 W	232 W
Opt. Operating Voltage (Vmp)	33.2 V	33.4 V	33.6 V
Opt. Operating Current (Imp)	6.77 A	6.84 A	6.91 A
Open Circuit Voltage (Voc)	41.3 V	41.5 V	41.6 V
Short Circuit Current (Isc)	7.36 A	7.44 A	7.50 A

* Under Nominal Operating Cell Temperature (NOCT), irradiance of 800 W/m², spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

PERFORMANCE AT LOW IRRADIANCE

Industry leading performance at low irradiation, average 96.0% relative efficiency from an irradiance of 1000 W/m² to 200 W/m² (AM 1.5, 25°C).

MODULE / MECHANICAL DATA

Specification	Data
Cell Type	Poly-crystalline, 6 inch
Cell Arrangement	72 (6×12)
Dimensions	1968×992×5.8mm (77.5×39.1×0.23 in) without J-Box and corner protector
(Incl. corner protector)	1972×996×10 mm (77.6×39.2×0.39 in) without J-Box
Weight	27.5 kg (60.6 lbs)
Front Cover	2.5 mm heat strengthened glass
Back Glass	2.5 mm heat strengthened glass
Frame	Frameless
J-Box	Split J-Box, IP67, 3 diodes
Cable	4 mm² (IEC) or 4 mm² &12 AWG 1000 V (UL)
Cable Length	1150 mm (45.3 in), 500 mm (19.7 in) (+) and 350 mm (13.8 in) (-) is optional for portrait installation*
Connectors	Amphenol H4 UTX (IEC), Renhe 05-6 (UL)
Standard Packaging	30 pieces
Module Pieces per Container	660 pieces (40' HQ)

* The application of this short length cable can only be used in portrait installation (clamping mounting method) systems in which the distance between modules should be less than or equal to 50 mm. In the event the distance between the PV modules to be installed is more than 50 mm, please make sure to consult our technical team for evaluation and advice.

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.41% / °C
Temperature Coefficient (Voc)	-0.31% / °C
Temperature Coefficient (Isc)	0.053% / °C
Nominal Operating Cell Temperature	45±2°C

PARTNER SECTION

The specification and key features described in this datasheet may deviate slightly and are not guaranteed. Due to on-going innovation, research and product enhancement, Canadian Solar Inc. reserves the right to make any adjustment to the information described herein at any time without notice. Please always obtain the most recent version of the datasheet which shall be duly incorporated into the binding contract made by the parties governing all transactions related to the purchase and sale of the products described herein.

Caution: For professional use only. The installation and handling of PV modules requires professional skills and should only be performed by qualified professionals. Please read the safety and installation instructions before using the modules.

CANADIAN SOLAR INC. August 2015. All rights reserved, PV Module Product Datasheet V5.3_EN

INTRODUCING A WHOLE NEW WAY TO TRACK THE SUN

The NEXTracker™ Self-Powered Tracker (SPT) brings self-contained motor power to each row, saving time and money. No more external power wiring. No more UPS backup systems. Safer and more reliable with higher performance.

INDEPENDENT, MECHANICALLY-BALANCED ROWS

The NEXTrackerSPT leverages NEXTracker's mechanically balanced row design, which aligns the PV panels with the tracker's axis of rotation. This alignment greatly reduces torsional load, requiring less energy from the motor to track throughout the day, and freeing each row to track independently.

PLUG AND PLAY WITH NO POWER WIRING

NEXTrackerSPT's independent rows eliminate external AC power source systems, wiring, and associated trenching. Self-contained units on each row include a dedicated 30 W PV panel to provide power to the Self-Powered Controller (SPC), which drives the motor and hosts intelligent control electronics to position each tracker. NEXTrackerSPT's wireless power and communication from the SPC enable each row to be truly plug and play.

HIGHER PERFORMANCE & SAFETY

Independently powered rows eliminate parasitic utility draw for a higher net energy yield. Intelligent, autonomous rows optimize operation, cleaning and maintenance activities. The tracking system rapidly moves into safe stow positions — an entire array can be stowed in under two minutes, versus up to 45 minutes for other horizontal trackers. That same quick positioning makes our tracker five times faster to clean.

MORE SITE FLEXIBILITY, LESS SITE PREPARATION

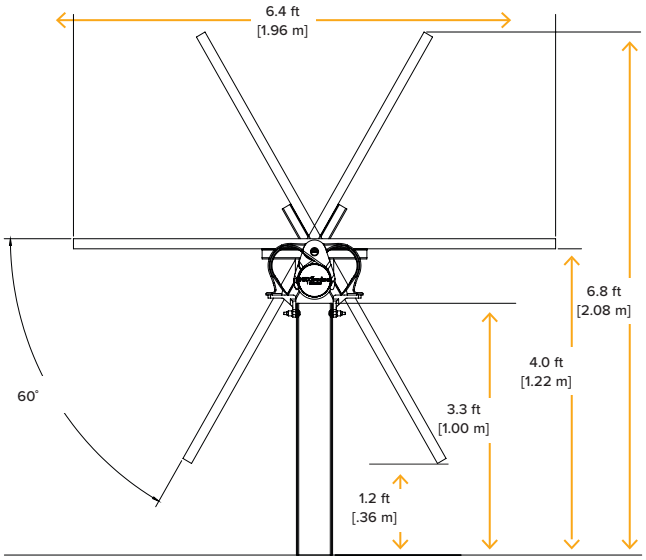
The NEXTrackerSPT's autonomous rows enable maximum flexibility in system design, overcoming constraints presented by irregular site boundaries or obstructions. No east/west grading, fewer access roads, and better utilization of corner areas increase power capacity 10-20% per site while reducing construction time. The self-powered rows enable the system to be commissioned without grid power.

Quicker to track, quicker to commission, quicker to profits.

NEXTrackerSPT Specifications

Tracking Technology	Horizontal single-axis balanced-mass tracker with independently-driven rows
Tracking Range	Up to 120° (± 60°)
Control System	1 Self-Powered Controller (SPC) per tracker; 1 Network Control Unit (NCU) per 100 SPCs
Communications	Wireless ZigBee® mesh network/SCADA; no communication wiring required
Drive System	One slew gear, 24 VDC motor and self-powered controller w/dedicated solar panel per row
DC Capacity	23-35kWp per tracker row, depending on panel type
System Voltage	Flexible, based on system design
Power Consumption	No grid power required
Ground Coverage Ratio	Fully configurable by customer; typical range 33%-50%
Installation Method	Rapid field assembly, no welding required
Foundation Types	Compatible with all major foundation types (driven pier, concrete foundation, ground screw)
Standard Wind Design	100 mph/161 kph, 3 second gust per ASCE7-10; configurable for higher wind speeds
Safety Stowing	Automated wind and snow stowing with self-contained backup power; no external power required
Torsional Limiter	Included at each foundation/bearing for additional wind and snow load protection
Principal Materials	Galvanized and stainless steel
Grounding Method	Self-grounding structure; separate materials and labor not required
Compliance	Grounding/bonding: UL2703; structural design: ASCE7-10
Other Available Options	Snow and flood sensors
Warranty	10 years on structural components; 5 years on drive and control systems
Typical Dimensions	Height 2.1 m/6.8 ft (@ 60°), Width 2.0 m/6.4 ft, Length 85 m/283 ft

Typical 72-cell c-Si configuration: 85 m row with 80 panels mounted in portrait:



6200 Paseo Padre Parkway
Fremont, CA 94555 USA
+1 510 270 2500
nextracker.com

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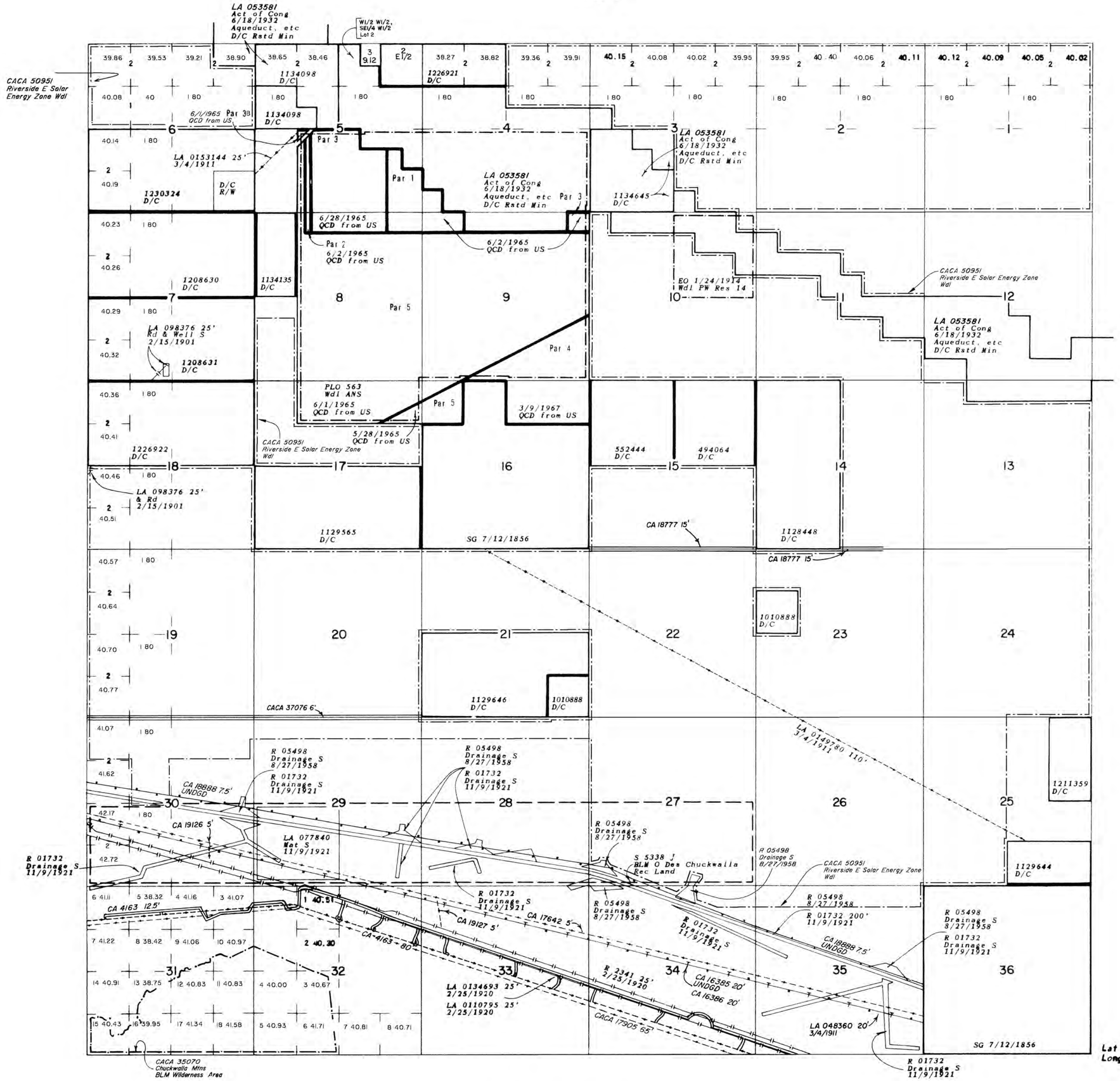
Appendix D

Master Title Plats / Historical Indexes

TOWNSHIP 5 SOUTH, RANGE 16 EAST, OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

PALM SPRINGS-SOUTH COAST FIELD OFFICE
RIVERSIDE COUNTY
SEC 15



STATUS OF PUBLIC DOMAIN LAND AND MINERAL TITLES

MT PLAT

INDEX TO SEGREGATED TRACTS				
RESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISION

All Tp included in R 258 BLM O CI Non-suitable for Agri

Act of Cong 6/18/1932 Aqueduct conflicts with patents

All Tp within designated California Desert Conserv Area Act of Cong 10/21/1976

CACA 49980 FERC O 4/28/2008 Wdl Pwr Proj 13123 NOS Trans Line,
Sec 8, 17, 21, 22, 23, 25; Subdiv Und

CACA 49980 License issued
FERC O 6/12/2014 Wdl Pwr Proj 13123 NOS, NOM Trans Line,
Sec 8, 17

R/W locations are approx in congested areas

FOR ORDERS EFFECTING OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERAL, WATER AND/OR OTHER PUBLIC PURPOSES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS.

SBM

CURRENT TO	
11-13-2013	JG

T5S
R16E

USE PLATS

Lat 33°41.1'N
Long 115°15.4'W

WARNING STATEMENT

This plat is the Bureau's Record of Title, and should be used only as a graphic display of the township survey data. Records hereon do not reflect title changes which may have been effected by lateral movements of rivers or other bodies of water. Refer to the cadastral surveys for official survey information.

TOWNSHIP 5 SOUTH RANGE 16 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY -OR- PURPOSE OF ORDER	SERIAL FILE -OR- ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE ¼				NW ¼				SW ¼				SE ¼											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
16																		All						
36																		All						Title to State to vest on approval of Survey, Subj to prior rights; Partially Acq;
																				SG	Act of Cong	3/3/1853		See Deeds from US 5/28/1965, 6/1/1965, 3/9/1967
14	X	X	X	X									X	X	X	X			320.00	DLE	LA 038322	1/4/1910		Canc 8/16/1949
15									X	X	X	X	X	X	X	X			320.00	DLE	LA 038323	1/4/1910		Canc 8/16/1949
9									X	X	X	X	X	X	X	X			320.00	DLE	LA 038324	1/4/1910		Canc 1/31/1949
9	X	X	X	X	X	X	X	X											320.00	DLE	LA 038326	1/10/1910		Rel 8/17/1949
10									X	X	X	X	X	X	X	X			320.00	DLE	LA 038327	1/17/1910		Canc 8/16/1949
11					X	X	X	X											160.00	DLE	LA 054942	1/17/1910		Canc 10/24/1949
10	X	X	X	X	X	X	X	X											320.00	DLE	LA 038336	1/24/1910		Canc 8/16/1949
11									X	X	X	X	X	X	X	X			320.00	DLE	LA 07713	2/1/1910		Rel 1/3/1911
4													X	X	X	X			160.00	DLE	LA 038339	2/1/1910		Canc 2/18/1948
4									X	X	X	X							160.00	DLE	LA 038340	2/1/1910		Rel 10/21/1943
5													X	X	X	X			160.00	DLE	LA 038341	2/1/1910		Rel 10/6/1943
3													X	X	X	X			320.00	DLE	LA 038343	2/4/1910		Canc 10/24/1949
7	X	X	X	X									X	X	X	X			320.00	DLE	LA 038344	2/4/1910		Canc 1/25/1950
8	X	X	X	X	X	X	X	X											320.00	DLE	LA 038345	2/4/1910		Partially Asgn LA 039151 12/30/1912; Canc 2/18/1948
8									X	X	X	X	X	X	X	X			320.00	DLE	LA 07760	2/7/1910		Rel 5/2/1910
17	X	X	X	X	X	X	X	X											320.00	DLE	LA 07775	2/7/1910		Partially Rel; Rel 2/6/1911
3						X	X												80.00	DLE	LA 038346	2/7/1910		Partially Asgn LA 039070 2/7/1910; Canc 2/18/1948
3					X			X											80.00	DLE	LA 039070	2/7/1910		Asgn out of LA 038346 dated 2/7/1910; Canc 11/9/1950
3	X	X	X	X															159.97	DLE	LA 07792	2/11/1910		Rel 12/18/1913
22					X	X	X	X											160.00	DLE	LA 038351	2/14/1910		Canc 2/18/1948
24									X	X	X	X	X	X	X	X			320.00	DLE	LA 03852	2/14/1910		Canc 12/6/1949
5									X	X	X	X							160.00	DLE	LA 07770	2/16/1910		Canc 6/2/1916
23	X	X	X	X	X	X	X	X											320.00	DLE	LA 038353	2/18/1910		Partially Rel; Canc 12/6/1948
22													X	X	X	X			160.00	DLE	LA 038354	2/21/1910		Canc 12/6/1948
21	X	X	X	X															160.00	DLE	LA 038355	2/21/1910		Canc 12/6/1949
22	X	X	X	X															160.00	DLE	LA 038356	2/21/1910		Canc 11/2/1950
21					X	X	X	X											160.00	DLE	LA 038357	2/21/1910		Canc 12/6/1949
12									X	X	X	X												
13					X	X	X	X											320.00	DLE	LA 038360	3/1/1910		Canc 2/18/1948
4					X	X	X	X																
5	X	X	X	X															313.46	DLE	LA 038361	3/1/1910		Canc 12/6/1949
4	X	X	X	X															159.27	DLE	LA 038362	3/1/1910		Canc 2/18/1948
26	X	X	X	X									X	X	X	X			320.00	DLE	LA 08508	3/7/1910		Rel 3/10/1913
23													X	X	X	X			160.00	DLE	LA 038363	3/7/1910		Canc 12/6/1949
23										X									40.00	DLE	LA 038569	4/21/1910		Canc 12/6/1949
24	X	X	X	X	X	X	X	X											320.00	DLE	LA 038578	4/22/1910		Canc 10/24/1949
13									X	X	X	X	X	X	X	X			320.00	DLE	LA 038579	4/22/1910		Canc 7/22/1949
7					X	X	X	X	X	X	X	X							321.10	DLE	LA 038597	4/29/1910		Canc 10/24/1949
6	X	X	X	X									X	X	X	X			318.11	DLE	LA 038598	4/29/1910		Canc 10/24/1949
15	X	X	X	X	X	X	X	X											320.00	DLE	LA 010422	5/2/1910		Rel 2/2/1914
8									X	X	X	X	X	X	X	X			320.00	DLE	LA 038607	5/2/1910		Partially Rel; Canc 7/26/1950
6					X	X	X	X	X	X	X	X							319.80	DLE	LA 038618	5/4/1910		Canc 7/20/1950
25	X	X	X	X									X	X					240.00	DLE	LA 038687	6/1/1910		Rel 8/6/1947
25					X	X	X	X	X	X	X	X							320.00	DLE	LA 038707	6/20/1910		Canc 3/8/1950

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TOWNSHIP 5 SOUTH RANGE 16 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE ¼				NW ¼				SW ¼				SE ¼											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
23									X		X	X							120.00	DLE	LA 038693	6/21/1910		Canc 2/18/1948
18	X	X	X	X	X	X	X	X											320.77	DLE	LA 038717	7/7/1910		Canc 3/8/1950
19	X	X	X	X															160.00	HE	LA 011652	10/28/1910		Rel 9/11/1911
17	X	X	X	X															160.00	DLE	LA 038804	2/6/1911		Rel 3/13/1929
17					X	X	X	X											160.00	DLE	LA 038805	2/6/1911		Canc 3/10/1949
18									X	X	X	X	X	X	X	X			320.97	DLE	LA 038856	3/17/1911		Canc 7/20/1950
20	X	X	X	X	X	X	X	X											320.00	DLE	LA 038892	4/8/1911		Canc 7/20/1950
20									X	X	X	X	X	X	X	X			320.00	DLE	LA 038893	4/8/1911		Canc 7/20/1950
21														X					40.00	DLE	LA 038894	4/8/1911		Rel 3/11/1912
19					X	X	X	X	X	X	X	X							322.68	DLE	LA 038901	4/12/1911		Canc 7/20/1950
2	X	X	X	X									X	X	X	X			320.17	DLE	LA 038913	4/18/1911		Canc 7/20/1950
1									X	X	X	X												
12					X	X	X	X											320.00	DLE	LA 038914	4/18/1911		Canc 7/20/1950
26									X	X	X	X							160.00	DLE	LA 038916	4/19/1911		Canc 7/20/1950
12	X	X	X	X									X	X	X	X			320.00	DLE	LA 038924	4/24/1911		Canc 7/20/1950
1	X	X	X	X									X	X	X	X			320.07	DLE	LA 038925	4/24/1911		Canc 7/20/1950
11									X	X	X	X	X	X	X	X			320.00	DLE	LA 039444	4/24/1911		Partially Rel; Canc 3/27/1951
1					X	X	X	X											160.21	DLE	LA 038967	6/12/1911		Canc 7/20/1950
19													X	X	X	X			160.00	DLE	LA 038999	7/10/1911		Canc 7/20/1950
22									X	X	X	X												
27					X	X	X	X											320.00	DLE	LA 039000	7/10/1911		Canc 7/20/1950
19	X	X	X	X															160.00	DLE	LA 039015	9/11/1911		Canc 7/20/1950
8					X			X											80.00	DLE	LA 039151	2/28/1913		Asgn out of LA 038345 dated 2/4/1910; Canc 3/4/1952
10	X	X	X	X														3S 3E		EO Wdl PW Res 14		1/24/1914		
15	X	X	X	X															160.00	CE Pat	494064	10/16/1915		LA 021689
5									X	X	X	X							160.00	HE	EC 02678	7/19/1916		Rel 1/17/1917
15					X	X	X	X											160.00	HE Pat	552444	10/31/1916		LA 021688
30																	N½ 1, 2 of NW¼		81.07	HE	LA 042174	6/8/1926		Canc 10/6/1931
16																		All						
36																		All		SG	Act of Cong	1/25/1927		Extends Act 3/3/1853 to Min lands, Subj to prior rights
18																								
19																								
20																								
21																								
22																								
25																								
26																								
27																								
28																								
29																								
34																								
35																		See Rmks		EO Wdl Municipal Water Supply		5/17/1927		All land lying within 50' of conduit LA 043640; Rev EO 8/22/1932
21																	X							
23							X												80.00	DLE Pat	1010888	1/20/1928		LA 043945
29																								
30																								
32																				Continued on page 3				

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TOWNSHIP 5 SOUTH RANGE 16 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION NE ¼				NW ¼				SW ¼				SE ¼				LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
33																				Continued from page 2				combined & interfiled; See Consolidated CA 16385, CA 16386 9/21/1984
34																								
35																		Subdiv Und; 5S 15E		R/W Tel & Teleg Line	LA 048360	6/8/1931		Act of Cong 3/4/1911; Proof of Construction 3/1/1933; Term 6/7/1981; Renewed, case file
18																								
19																								
20																								
21																								
22																								
25																								
26																								
27																								
28																								
29																								
34																								
35																		See Rmks		EO Rev Municipal Water Supply				
																				EO 5/17/1927		8/22/1932		All land lying within 50' center line; Other Tp 3S 23E
5/6																		Subdiv Und; 5S 15E						Grant under Act of Cong 6/18/1932; Map filed 2/14/1933; Rel 1/29/1945; Amdt 2/16/1945
7																				R/W Rd	LA 051073	9/18/1933		to come under provisions of Sec 2477 RS
27/28																								
29/30																								
31																								
33																								
34																								
35																		Subdiv Und; 5S 15E		R/W Hwy & Drainage S	R 01732	10/18/1933		Act of Cong 11/9/1921
3																								
4																								
5																								
6																								
9																								
10																								
11																								
12																								
13																		Subdiv Und; 4S 15E		Act of Cong 6/18/1932 Aqueduct,				
																				etc - (Wasteway Area)	LA 053581	5/28/1940		Map filed 5/15/1939; Limited fee title
5									X			X												
17	X	X																		PLO Wdl War Dept	74	1/1/1943		Rev PLO 563 2/18/1949
5											X													
6																		SE¼SE¼SE¼						
8							X													R/W Access Rd & Tel Line US				
																				War Dept	R 01762	11/29/1944		44 LD 513; Canc 9/10/1965
5																								
6																								
7																		Subdiv Und; 4S 15E		R/W Tel & Teleg Line	LA 055615	4/5/1945		Act of Cong 3/4/1911; Rel 3/14/1956

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TOWNSHIP 5 SOUTH RANGE 16 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY -OR- PURPOSE OF ORDER	SERIAL FILE -OR- ORDER NUMBER	DATE OF ACTION	DATE POSTED	-REMARKS- E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE 1/4				NW 1/4				SW 1/4				SE 1/4											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
5									X			X												
17	X	X																		PLO Rev War Dept PLO 74 1/1/1943	563	2/18/1949		
4									X	X	X	X	X	X	X	X								
5									X			X	X	X	X	X								
8	X	X	X	X	X			X	X			X	X	X	X	X								
9																		All						
17	X	X							X											PLO Wdl ANS 251	563	2/18/1949		
29									X	X	X	X								R/W Mat S	LA 077840	11/29/1949		Act of Cong 11/9/1921
29																								
30																								
32																								
33																								
34																								
35																		Subdiv Und; 3S 2W		R/W Pipe Line	LA 072548	2/28/1950		Act of Cong 2/25/1920; Canc 4/15/1954
14					X	X	X	X	X	X	X	X							320.00	DLE Pat	1128448	3/8/1950		LA 038325
17									X	X	X	X	X	X	X	X			320.00	DLE Pat	1129565	7/31/1950		LA 038348
25															X	X			80.00	DLE Pat	1129644	8/9/1950		LA 038687
21									X	X	X	X	X	X	X				280.00	DLE Pat	1129646	8/9/1950		LA 038894
5																	1, 2 of NW¼		157.11	DLE Pat	1134098	2/27/1952		LA 038692
8						X	X												80.00	DLE Pat	1134135	3/4/1952		LA 039151
3									X	X	X	X							160.00	DLE Pat	1134645	4/24/1952		LA 039825
7																								
18																		Subdiv Und; 5S 15E						Act of Cong 2/15/1901; Proof of Construction 5/14/1953; Amdt 8/1/1968; Partially Rel
																				R/W Pipe Line & Rd, Well S	LA 098376	11/21/1952		10/10/1969; Proof of Construction 1/6/1970
29																								
30																								
32																								
33																								
34																								
35																		Subdiv Und; 3S 2W		R/W Pipe Line	LA 0110795	4/7/1954		Act of Cong 2/25/1920; Proof of Construction 7/15/1954
2	X	X	X	X	X	X	X	X											320.00	DLE	LA 096187	1/17/1955		Canc 6/13/1962
2									X	X	X	X	X	X	X	X			320.00	DLE	LA 096188	1/17/1955		Canc 6/13/1962
10													X	X	X	X			160.00	DLE	LA 096532	1/17/1955		Canc 10/2/1961
14	X	X	X	X									X	X	X	X			320.00	DLE	LA 0101295	1/17/1955		Canc 6/8/1956
1					X	X	X	X	X	X	X	X							320.21	DLE	LA 0101302	1/17/1955		Canc 10/14/1957
17			X	X				X											120.00	DLE	LA 0101448	1/17/1955		Canc 8/29/1961
23	X	X	X	X	X	X		X											280.00	DLE	LA 0102289	1/17/1955		Canc 7/16/1962
1	X	X	X	X									X	X	X	X			320.00	DLE	LA 0102402	1/17/1955		Canc 7/24/1959
5										X	X								80.00	DLE	LA 096371	2/16/1955		Canc 3/19/1963
8										X	X													
17						X	X												160.00	DLE	LA 096398	2/16/1955		Canc 8/29/1961
18									X	X	X	X	X	X	X	X			320.00	DLE	LA 0100493	2/16/1955		Canc 8/24/1956
24									X	X	X	X	X	X	X	X			320.00	DLE	LA 0101715	2/16/1955		Canc 11/6/1957
23									X				X	X	X	X			200.00	DLE	LA 0101878	2/16/1955		Canc 5/11/1960
25		X	X																80.00	DLE	LA 0101932	2/16/1955		Canc 7/24/1959
24	X	X	X	X	X	X	X	X											320.00	DLE	LA 0102098	2/16/1955		Canc 10/2/1961
29																								
30																				Continued on page 5				

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TOWNSHIP 5 SOUTH RANGE 16 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE ¼				NW ¼				SW ¼				SE ¼											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
32																				Continued from page 4				
33																								
34																								
35																		Subdiv Und; 6S 11E		R/W Pipe Line	LA 0134693	8/23/1955		Act of Cong 2/25/1920
3													X	X		X	1, 2 of NE¼		279.95	DLE	LA 096423	4/23/1956		Canc 6/21/1961
21																								
22																								
23																								
25																								
26																		Subdiv Und; 4S 15E		R/W Trans Line	LA 0149780	5/3/1957		Act of Cong 3/4/1911; Proof of Construction 4/25/1962
					ENTIRE TOWNSHIP													27S 39E MD Mer		BLM O Cl Non-suitable for Agri	R 258	9/20/1959		Supplemented by FR 35-3532 effective 5/21/1960
7	X	X	X	X													1, 2 of NW¼		320.49	DLE Pat	1208630	5/17/1960		LA 096420
7													X	X	X	X	1, 2 of SW¼		320.61	DLE Pat	1208631	5/17/1960		LA 096434
25	X			X														5S 17E	80.00	DLE Pat	1211359	8/10/1960		LA 0101874
18																		NW¼NW¼SW¼; 5S 15E		R/W Trans Line	LA 0168898	3/7/1961		Rel 6/15/1965
4																	2 of NW¼							
5																	E½ 2 of NE¼		115.18	DLE Pat	1226921	5/17/1962		LA 096421
18	X	X	X	X													1, 2 of NW¼		320.77	DLE Pat	1226922	5/17/1962		LA 096422
6													X	X	X	X	1, 2 of SW¼		320.33	DLE Pat	1230324	1/9/1963		LA 096354
5																		Subdiv Und; 4S 15E		R/W Trans Line	LA 0153144	3/18/1963		Act of Cong 3/4/1911; Proof of Construction 4/6/1966
26																								
27																								
34																								
35																		Subdiv Und		R/W Mat S	R 03755	10/25/1963		Partially Rel; Rel 7/14/1969
27																								
28																								
29																								
30																								
33																								
34																								
35																		Subdiv Und; 5S 15E		R/W Hwy	R 05498	12/8/1964		Act of Cong 8/27/1958; Amdt 8/22/1967; Proof of Construction 8/29/1967, 9/8/1969
16																								
17																		M&B	42.00	QCD from US		5/28/1965		GSA W Calif 790, Par 5
5																								
8																								
9																								
16																								
17																		M&B	1019.00	QCD from US		6/1/1965		GSA W Calif 790 Par 5
5																		M&B	3.00	QCD from US		6/1/1965		GSA W Calif 790, Par 3 B
4																								
5																								
8																								
9																		M&B	110.10	QCD from US		6/2/1965		GSA W Calif 790, Pars 1, 2
5																								
8																		M&B	179.00	QCD from US		6/28/1965		GSA W Calif 790, Par 3
9																								
16																		M&B	168.00	QCD from US		3/9/1967		GSA W Calif 790, Par 4

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TOWNSHIP 5 SOUTH RANGE 16 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE ¼				NW ¼				SW ¼				SE ¼											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS						
					ENTIRE TOWNSHIP													See Rmks						All unappropriated public land, Chuckwalla Planning Unit; Segr from appropriation
																								only under Agri Land Laws & from sales under RS 2455; Other Tp 5S 12E; Cl BLM O
																				BLM O Prop Cl Mult Use	R 702	9/28/1967		12/13/1967; Term in its entirety 9/13/1990
29											X	X												
30															X	X	1, 2 of SW¼							
32	X	X				X											1							
33			X	X		X	X	X					X	X										
34									X	X				X	X	X								
35											X	X						6S 10E		R/W Pipe Line	R 2341	2/4/1970		Act of Cong 2/25/1920; Proof of Construction 3/29/1976
27									X	X	X	X	X	X	X	X								
28									X	X	X	X	X	X	X	X								
29									X	X	X	X	X	X	X	X								
30									X	X	X	X	X	X	X	X		6S 16E		BLM O Des Chuckwalla Rec Land	S 5338 J	8/21/1972		
					ENTIRE TOWNSHIP													3S 35E MD Mer		Act of Cong Des California				
																				Desert Conserv Area		10/21/1976		
31																								
32																								
33																								
34																		Subdiv Und; 3S 5E		R/W Trans Line & Access Rd	CA 4163	4/23/1980		Act of Cong 10/21/1976; Grant term 50 Yrs
15																		S½S½S½S½						
22																		N½N½N½N½		R/W Access Rd	CA 6805	8/27/1981		Act of Cong 10/21/1976; Grant term 30 Yrs; Term & case closed 5/28/1987
1			X	X			X	X	X	X	X	X	X	X	X	X	1 thru 4							
2			X	X			X	X	X	X	X	X	X	X	X	X	1 thru 4							
3			X	X			X	X					X	X	X	X	1 thru 4							
4			X	X			X	X									1, 2							
5			X	X						X	X						2							
6			X	X				X									1 thru 5							
8										X	X													
10																		All						
11																		All						
12																		All						
13																		All						
14	X	X	X	X									X	X	X	X								
15									X	X	X	X	X	X	X	X								
17			X	X		X	X	X																
18									X			X	X	X	X	X	3, 4							
19	X	X	X	X	X			X	X			X	X	X	X	X	1 thru 4							
20																		All						
21	X	X	X	X	X	X	X	X																
22																		All						
23	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X								
24																		All	9031.62	OG Lse	CA 8901	3/1/1982		Rel 1/17/1986
25		X	X		X	X	X	X	X	X	X	X	X	X										
26																		All						
27																		All						
28																		All						
29																		All						
30	X	X	X	X									X	X	X	X	1,2NW¼, 1, 2SW¼							
31																	3 thru 18							
32	X	X	X	X		X		X					X	X			1 thru 8							

GPO 843-003

TOWNSHIP 5 SOUTH RANGE 16 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION NE ¼				NW ¼				SW ¼				SE ¼				LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS						
33																		All						
34																		All						
35																		All; 6S 16E	8182.07	OG Lse	CA 10389	6/1/1982		Term 6/1/1983
18																		Within N½S½; 5S 15E		R/W Rd	CA 12467	4/19/1984		Act of Cong 10/21/1976; Grant term 30 Yrs; Canc 8/5/1992; Case closed 9/14/1992
29																		Within SW¼SW¼						
30																	See Rmks	Within SE¼						Within Lots 1, 2 SW¼
32																		Within N½NE¼						
33																		Within N½						
34																		Within S½N½, N½S½						
35																		Within S½, 3S 3E		R/W UNDGD Tel & Teleg	CA 16385	9/21/1984		Act of Cong 10/21/1976; Grant term perpetuity; See Amdt Loc 10/29/1985
29																		Within SW¼SW¼						
30																	See Rmks	Within SE¼						Within Lots 1, 2, SW¼
32																		Within N½NE¼						
33																		Within N½						
34																		Within S½N½, N½S½						
35																		Within S½; 3S 3E		R/W Aerial Tel & Teleg	CA 16386	9/21/1984		Act of Cong 10/21/1976; Grant term perpetuity; See Amdt Loc 10/29/1985
28																		Within S½						
30																		Within S½						
32																		Within NE¼NE¼						
33																		Within N½						
34																		Within S½N½, N½S½						
35																		See Rmks		R/W Trans Line	CA 17642	10/10/1985		Within S½; Other Tp: 5S 15E; Act of Cong 10/21/1976; See Amdt Loc 1/13/1986
29																		Within S½SW¼, SW¼SE¼		R/W Amdt Loc UNDGD Tel & Teleg	CA 16385	10/29/1985		
29																		Within S½SW¼, SW¼SE¼		R/W Amdt Loc Aerial Tel & Teleg	CA 16386	10/29/1985		
29																		Within S½S½						
30																		Within S½						
32																		Within NE¼NE¼						
33																		Within N½						
34																		Within S½N½, N½S½						
35																		See Rmks		R/W Amdt Loc Trans Line	CA 17642	1/13/1986		Within S½; Other Tp: 5S 15E; Act of Cong 10/21/1976
13																		Within S½S½						
14																		Within S½S½SE¼						
15																		Within S½S½						
24																		Within N½		R/W Equipment Drop Zone, Buffer				
																				Zone & Access Rd USAF	CA 18777	4/17/1986		Act of Cong 10/21/1976; Grant term 2 Yrs
27											X	X						Within						
28									X	X	X	X	X	X	X	X		Within						
29									X	X	X	X	X	X	X	X		Within						
30	X	X	X	X	X	X	X	X					X	X	X	X		Within						
34	X	X			X	X												Within						
35	X	X	X	X	X	X	X	X					X					Within; 5S 8E		R/W UNDGD Telecomm Line and				
																				Ancillary Fac	CACA 18888	8/1/1986		Act of Cong 10/21/1976; Grant term 50 Yrs; Also granted in various other states
30															X	X		Within		R/W Pole Line	CA 19126	11/12/1986		Act of Cong 10/21/1976; Grant term 25 Yrs
33						X	X											Within		R/W Pole Line	CA 19127	11/12/1986		Act of Cong 10/21/1976; Grant term 25 Yrs

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TOWNSHIP 5 SOUTH RANGE 16 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE ¼				NW ¼				SW ¼				SE ¼											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
22																		Within N½N½N½		Continued from Page 7				
23																		Within N½N½NW¼, E½						
24																		Within		R/W Amdt Loc Equipment Drop				
																				Zone, Buffer Zone & Access Rd				
																				USFS	CA 18777	12/16/1986		Grant Exp 5/1/1988; Grant Term 2/14/1994
31	X	X			X	X												Within						
32	X	X			X	X												Within						
33									X	X	X	X	X	X	X	X		Within						
34											X	X			X	X		Within						
35											X							Within; 3S 5E		R/W Power Trans Line	CACA 17905	8/11/1989		Act of Cong 10/21/1976; Grant term 20 Yrs
19																		S½S½S½S½						
20																		S½S½S½S½						
28																		N½N½N½NW¼NE¼, N½N½N½NW¼						
29																		N½N½N½N½						
30																		N½N½N½N½; 5S 15E	6.18	R/W Rd	CACA 37076	2/11/1997		Act of Cong 10/21/1976; Grant Expires 12/31/2026
8																				Prop Wdl Solar Energy Study Areas	CACA 50951	6/30/2009		
17																								
21																								
22																								
23																								
25																		Subdiv Und; 4S 14E		FERC O Wdl Pwr Proj 13123 Trans				
																				line	CACA 49980	4/28/2008		All land lying within Proj Bdy
					ENTIRE	TOWNSHIP												8N 4E		Prop Wdl Solar Energy Study Areas	CACA 50951	6/30/2009		Segr Term 2 Yrs; See Admt 4/21/2011
1,2																		All						
3																	See Rmks	SE1/4 Excl non-public lands						Lots 1, 2 of NE1/4; Lot 1 of NW1/4 Excl non-public lands; Lot 2 of NW1/4
4																	See Rmks							N1/2 lot 1 of NE1/4, lot 2 NE1/4
6																	See Rmks							Lot 1 of S1/2NE1/4, S1/2 lot 2 of NE1/4NE1/4, lot 2 of NW1/4NE1/4, lot 2 of NW1/4
8											X							S1/2NW1/4SW1/4						
10									X	X	X	X	X	X	X	X		N1/2 Excl non-public lands						
11	X	X		X	X				X	X	X	X			X	X		See Rmks						N1/2SW1/4NE1/4, SE1/4SW1/4NE1/4, N1/2NW1/4NW1/4, SE1/4NW1/4NW1/4, S1/2SW1/4NW1/4,
																								SW1/4SE1/4NW1/4, S1/2NW1/4SE1/4
12	X	X	X	X	X	X	X	X					X					See Rmks						S1/2SW1/4SW1/4, E1/2NW1/4SE1/4, NW1/4NW1/4SE1/4, NW1/4SE1/4SE1/4, NE1/4SW1/4SE1/4
13			X	X		X	X	X	X	X	X	X	X	X	X	X		See Rmks						S1/2N1/2NE1/4, S1/2NE1/4NW1/4
14	X	X	X	X									X	X	X	X								
15									X	X	X	X	X	X	X	X								
17			X	X		X	X	X																
18													X	X	X	X	Lot 1, 2 of SW1/4							
19,20																		All						
21	X	X	X	X	X	X	X	X																
22																		All						
23	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X								
24																		All						
25					X	X	X	X	X	X	X	X												
26																		All						
27																		Por N of ROW CAR 05498						
28																		N1/2N1/2N1/2						
																				Continued on page 9				

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TOWNSHIP 5 SOUTH RANGE 16 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE 1/4				NW 1/4				SW 1/4				SE 1/4											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS						
																				Continued from page 8				
29																		N/12NI/2NI/2						
30																	See Rmks	NI/2NI/2NEI/4						NI/2NI/2 lot 1 of NWI/4, NI/2 lot 2 of NWI/4
34																		See Rmks						NI/2NI/2NI/2 Por N of ROW CAR 05498
35																		NI/2NI/2NI/2; 8N 4E		Admt Prop Wdl Solar Energy Zones	CACA 50951	4/21/2011		Admt 12/17/2012 Segr Term 6/29/2011; Notice of Segr 6/30/2011, Segr Term 6/29/2013; See
1, 2																		All						
3																	See Rmks	SEI/4 Excl CALA 053581						lots 1,2 NEI/4, lots 1,2 NWI/4
4																	1,2 NEI/4	NEI/4 Excl CALA 053581						
6																	See Rmks							lots 1,2 NEI/4, lots 1,2 NWI/4, Excl CALA 53581
8											X							SI/2NWI/4SWI/4						
10, 11																		Excl CALA 053581						
13																		Excl CALA 053581						
14	X	X	X	X									X	X	X	X								
15									X	X	X	X	X	X	X	X								
17			X	X		X	X	X																
18													X	X	X	X	1,2 SWI/4							
19, 20																		All						
21	X	X	X	X	X	X	X	X																
22																		All						
23	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X								
24																		All						
25					X	X	X	X	X	X	X	X												
26																		All						
27																		N of N Bdy CARI 05498						
28																		NI/2NI/2NI/2						
29																		NI/2NI/2NI/2						
30	X	X															See Rmks							lot 1 NWI/4, NI/2 lot 2 NWI/4
34																		See Rmks						NI/2NI/2NEI/4, NEI/4NEI/4NWI/4, N of N Bdy CARI 05498
35																		NI/2NI/2NI/2; 4S 15E		Admt Prop Wdl Solar Energy Zones	CACA 50951	12/17/2012		Segr Term 6/30/2013; Wdn PLO 7818 6/27/2013
1, 2																		All						
3																	See Rmks	SEI/4 Excl CALA 053581						lots 1, 2 NEI/4, lots 1,2 NWI/4
4																	See Rmks							lots 1,2 NEI/4, Excl CALA 053581
6																	See Rmks							lots 1,2 NEI/4, lots 1,2 NWI/4, Excl CALA 053581
8											X							SI/2NWI/4SWI/4						
10, 11																		Excl CALA 053581						
13																		Excl CALA 053581						
14	X	X	X	X									X	X	X	X								
15									X	X	X	X	X	X	X	X								
17			X	X		X	X	X																
18													X	X	X	X	1,2 SWI/4							
19, 20																		All						
21	X	X	X	X	X	X	X	X																
22																		All						
23	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X								
24																		All						
25					X	X	X	X	X	X	X	X												
																				Continued on page 10				

TOWNSHIP 5 SOUTH RANGE 16 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE 1/4				NW 1/4				SW 1/4				SE 1/4											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
																				Continued from page 9				
26																		All						
27																		See Rmks						N of N Bdy CARI 05498
28																		N1/2N1/2N1/2						
29																		N1/2N1/2N1/2						
30	X	X															See Rmks							lot 1 NW1/4, N1/2 lot 2 NW1/4
34																		See Rmks						N1/2N1/2NE1/4, NE1/4NE1/4NW1/4, N of N Bdy CARI 05498
35																		N1/2N1/2N1/2						Wdn from Loc & entry under the United States mining laws, open to Min & Geo
																		4S 15E		PLO Wdl Riverside & Imperial E Solar Energy Zones	7818	6/27/2013		leasing & Min material sales; Segr Term 6/26/2033
8																		within						
17																		within		Lic issued FERC O Wdl Pwr Proj 13123	CACA 49980	6/12/2014		NOS, NOM

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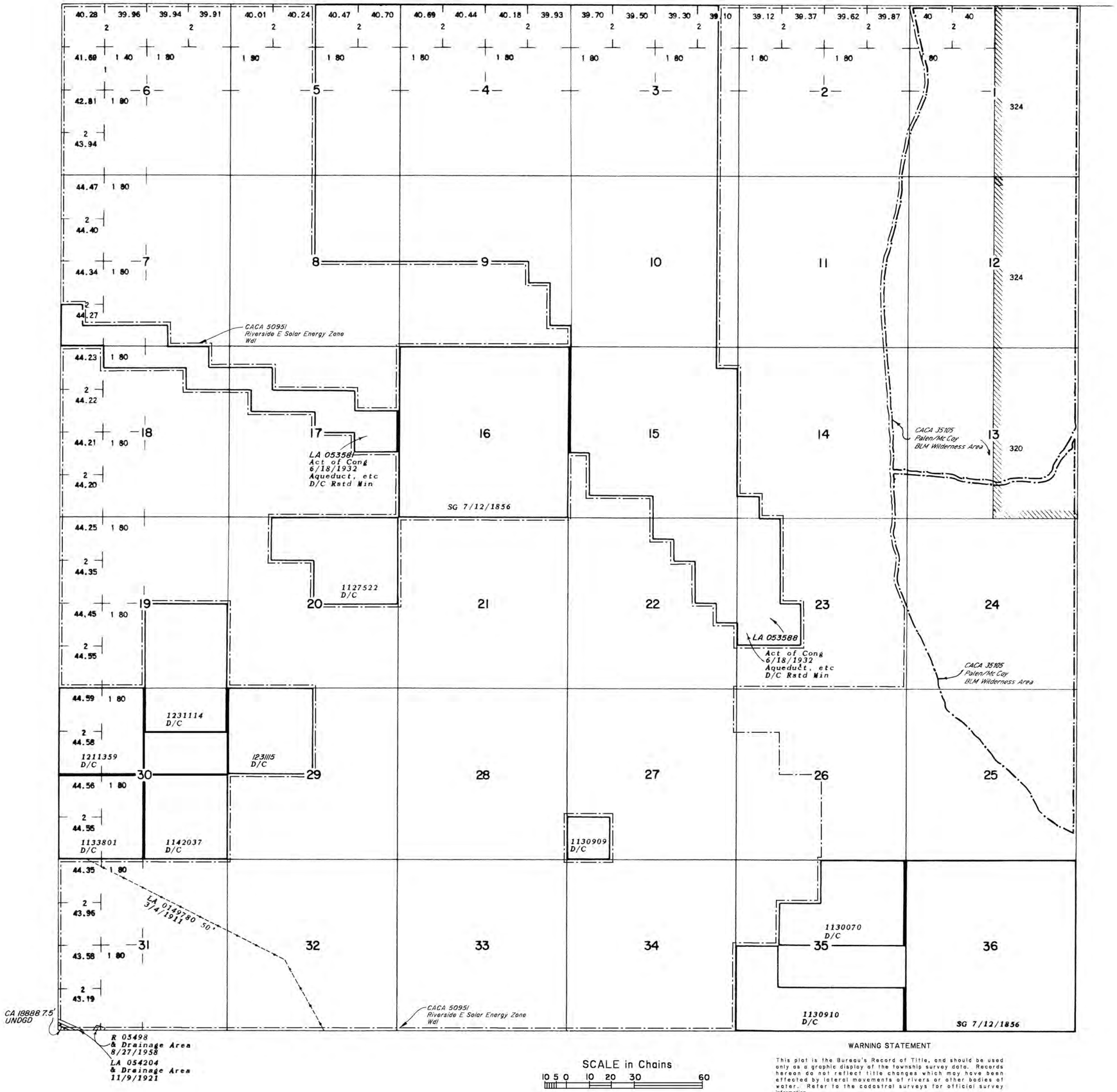
PARTIALLY SURVEYED TOWNSHIP 5 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

Protraction Diagram No 2 Officially Filed 8/16/1971

PALM SPRINGS-SOUTH COAST FIELD OFFICE
RIVERSIDE COUNTY
SEC 15

STATUS OF PUBLIC DOMAIN LAND AND MINERAL TITLES

MT PLAT



SCALE in Chains
10 5 0 10 20 30 60

WARNING STATEMENT

This plat is the Bureau's Record of Title, and should be used only as a graphic display of the township survey data. Records hereon do not reflect title changes which may have been effected by lateral movements of rivers or other bodies of water. Refer to the cadastral surveys for official survey information.

INDEX TO SEGREGATED TRACTS				
RESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISION

All Tp included in R 258 BLM O Cl Non-suitable for Agri

All Tp within designated California Desert Conserv Area Act of Cong 10/21/1976

FOR ORDERS EFFECTING OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERAL, WATER AND/OR OTHER PUBLIC PURPOSES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS.

CURRENT TO	CURRENT TO
9-8-2015	VH

USE PLATS

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PARTIALLY SURVEYED TOWNSHIP 5 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE ¼				NW ¼				SW ¼				SE ¼											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
16																		All						
36																		All		SG	Act of Cong	3/3/1853		Title to State to vest on approval of Survey, Subj to prior rights
33	X	X	X	X	X	X	X	X											320.00	DLE	LA 09844	3/26/1910		Rel 4/12/1912
33									X	X	X	X	X	X	X	X			320.00	DLE	LA 038419	3/26/1910		Partially Rel; Canc 2/18/1948
32									X	X	X	X	X	X	X	X			320.00	DLE	LA 038418	3/31/1910		Canc 2/18/1948
28									X	X	X	X	X	X	X	X			320.00	DLE	LA 010060	4/7/1910		Rel 4/4/1912
19					X	X	X	X	X	X	X	X							320.00	DLE	LA 038492	4/7/1910		Partially Rel; Canc 12/6/1949
20									X	X	X	X	X	X	X	X			320.00	DLE	LA 038499	4/8/1910		Partially Asgn LA 039100 9/20/1912; Canc 8/10/1949
32	X	X	X	X	X	X	X	X											320.00	DLE	LA 038518	4/11/1910		Canc 8/17/1949
29									X	X	X	X	X	X	X	X			320.00	DLE	LA 038519	4/11/1910		Canc 12/6/1949
27									X	X		X	X	X	X	X			320.00	DLE	LA 038529	4/12/1910		Rel 1/31/1913
34									X	X	X	X	X	X	X	X			320.00	DLE	LA 038530	4/12/1910		Canc 7/22/1949
34	X	X	X	X	X	X	X	X											320.00	DLE	LA 038531	4/12/1910		Canc 8/17/1949
29	X	X	X	X	X	X	X	X											320.00	DLE	LA 038564	4/18/1910		Canc 10/24/1949
31	X	X	X	X									X	X	X	X			320.00	DLE	LA 010324	4/21/1910		Canc 4/18/1912
30	X	X	X	X	X	X	X	X											329.17	DLE	LA 038501	4/21/1910		Canc 8/16/1949
35					X	X	X												120.00	DLE	LA 038571	4/21/1910		Rel 2/14/1950
21									X	X	X	X	X	X	X	X			320.00	DLE	LA 038572	4/21/1910		Canc 12/6/1949
28	X	X	X	X															160.00	DLE	LA 038573	4/21/1910		Canc 8/17/1949
31					X	X	X	X	X	X	X	X							335.00	DLE	LA 038574	4/21/1910		Canc 7/22/1949
35									X				X	X					120.00	DLE	LA 038575	4/21/1910		Rel 4/16/1947
28					X	X	X	X											160.00	DLE	LA 038576	4/21/1910		Canc 10/24/1949
20						X	X	X											120.00	DLE	LA 038581	4/25/1910		Rel 4/7/1947
18	X	X	X	X									X	X	X	X			320.00	DLE	LA 055256	5/20/1910		Partially Rel; Canc 11/6/1950
19						X	X	X	X	X	X	X							297.60	DLE	LA 038879	4/1/1911		Canc 5/2/1950
8									X	X	X	X	X	X	X	X			320.00	DLE	LA 038936	5/2/1911		Canc 7/20/1950
7					X	X	X	X	X	X	X	X							337.48	DLE	LA 038937	5/3/1911		Canc 12/17/1912
17					X	X	X	X	X	X	X	X							320.00	DLE	LA 038943	5/4/1911		Canc 7/20/1950
6									X	X	X	X	X	X	X	X			331.75	DLE	LA 013116	5/15/1911		Canc 4/15/1913
6	X	X	X	X	X	X	X	X											321.78	DLE	LA 038947	5/15/1911		Canc 7/20/1950
7	X	X	X	X									X	X	X	X			320.00	DLE	LA 013009	5/29/1911		Canc 2/17/1914
5	X	X	X	X	X	X	X	X											321.42	DLE	LA 038982	6/21/1911		Canc 7/20/1950
5													X	X	X	X			160.00	DLE	LA 038983	6/26/1911		Canc 11/9/1950
21					X	X	X	X											160.00	DLE	LA 013468	6/29/1911		Rel 6/18/1912
17	X	X	X	X									X	X	X	X			320.00	DLE	LA 038987	6/29/1911		Canc 11/9/1950
5									X	X	X	X							160.00	DLE	LA 038989	6/30/1911		Canc 7/20/1950
22									X	X	X	X	X	X	X	X			320.00	DLE	LA 038998	7/10/1911		Canc 11/9/1950
4					X	X	X	X	X	X	X	X							320.00	DLE	LA 038984	8/12/1911		Canc 7/20/1950
33									X	X	X	X						6S 17E	160.00	DLE	LA 039012	9/5/1911		Canc 11/9/1950
26					X	X	X	X	X	X	X	X							320.00	DLE	LA 039054	12/14/1911		Canc 11/9/1950
26	X	X	X	X									X	X	X	X			320.00	DLE	LA 039055	12/14/1911		Canc 7/20/1950
27	X	X	X	X	X	X	X	X											320.00	DLE	LA 039056	2/23/1912		Canc 11/6/1950
33	X	X	X	X	X	X	X	X											320.00	DLE	LA 039094	4/12/1912		Canc 11/9/1950
21					X	X													80.00	DLE	LA 039110	6/18/1912		Canc 11/13/1950
21							X	X											80.00	DLE	LA 039111	7/17/1912		Canc 7/20/1950
20									X	X	X	X							160.00	DLE	LA 039100	9/20/1912		Asgn out of LA 038499 dated 4/8/1910; Canc 7/20/1950
16																		All						
36																		All		SG	Act of Cong	1/25/1927		Extends Act 3/3/1853 to Min lands, Subj to prior rights

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PARTIALLY SURVEYED TOWNSHIP 5 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE ¼				NW ¼				SW ¼				SE ¼											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS						
31																		See Rmks						All land lying within 50' of conduit LA 043640; Other Tp 3S 23E; Rev EO 5908
																				EO Wdl Municipal Water Supply		5/17/1927		8/22/1932
21	X	X	X	X															160.00	HE	LA 046306	10/30/1928		Rel 12/5/1933
31																		See Rmks		EO Rev Municipal Water Supply EO				
																				5/17/1927	5908	8/22/1932		All land lying within 50' center line of conduit; Other Tp 3S 23E
3									X	X	X	X		X	X		See Rmks	W½E½SE¼						Lots 1, 2 of NW¼, W½ & W½E½ Lot 1 & 2 of NE¼
4																		All						
5													X	X	X	X	1, 2 of NE¼							
8	X	X	X	X																				
9	X	X	X	X	X	X	X	X									See Rmks							N½NE¼SE¼, SE¼NE¼SE¼, NE¼SE¼SE¼
10		X	X		X	X	X	X	X	X	X	X		X	X			W½E½E½						
14																		SW¼SW¼SW¼						
15		X	X	X	X	X	X	X	X				X	X	X	X		See Rmks						NW¼NE¼NE¼, S½NE¼NE¼, NW¼NW¼SW¼, E½NW¼SW¼, N½SE¼SW¼, NE¼SW¼SW¼
22	X			X														See Rmks						NW¼NW¼NE¼, E½NW¼NE¼, NE¼NE¼SE¼
23						X	X			X								W½NE¼SW¼; 3S 16E		Act of Cong 6/18/1932 Aqueduct,				
																				etc,	LA 053588	5/23/1940		Map filed 6/6/1940; Limited fee title
7																								
17																								
18																		Subdiv Und; 4S 15E		Act of Cong 6/18/1932 Aqueduct,				
																				etc,(Wasteway Area)	LA 053581	5/28/1940		Maps filed 5/15/1939; Limited fee title
31											X	X						Subdiv Und; 6S 12E		R/W Hwy & Drainage Area	LA 054204	8/14/1941		Act of Cong 11/9/1921
20	X	X	X	X	X														200.00	DLE Pat	1127522	10/24/1949		LA 038581
35	X	X	X	X				X											200.00	DLE Pat	1130070	9/26/1950		LA 038571
27											X								40.00	DLE Pat	1130909	1/16/1951		LA 038529
35										X	X	X			X	X			200.00	DLE Pat	1130910	1/16/1951		LA 038575
30																	1, 2 of SW¼		169.11	DLE Pat	1133801	1/31/1952		LA 048677
30													X	X	X	X			160.00	DLE Pat	1142037	12/17/1953		LA 038500
30			X	X															80.00	DLE	LA 0101821	2/15/1955		Canc 6/4/1959
28	X	X	X	X	X	X	X	X											320.00	DLE	LA 0102456	2/15/1955		Canc 7/26/1959
21									X	X	X	X							160.00	DLE	LA 0102692	2/15/1955		Canc 7/24/1959
29	X	X	X	X									X	X	X	X			320.00	DLE	LA 0102693	2/15/1955		Canc 10/2/1961
33					X	X	X	X	X	X	X	X							320.00	DLE	LA 0102694	2/15/1955		Canc 10/2/1961
34					X	X	X	X	X	X	X	X							320.00	DLE	LA 0102702	2/15/1955		Canc 7/24/1959
34	X	X	X	X									X	X	X	X			320.00	DLE	LA 0102971	2/15/1955		Canc 7/23/1959
33	X	X	X	X															160.00	DLE	LA 0112537	2/15/1955		Canc 10/21/1959
20													X	X	X	X			160.00	DLE	LA 0102700	2/16/1955		Canc 7/23/1959
20						X	X	X	X	X	X	X							280.00	DLE	LA 0103863	2/16/1955		Canc 10/28/1957
32	X	X	X	X															160.00	DLE	LA 0102419	2/17/1955		Canc 10/21/1959
29									X	X									80.00	DLE	LA 0102288	3/3/1955		Canc 7/24/1959
27						X	X		X	X		X							200.00	DLE	LA 0102972	3/3/1955		Canc 4/21/1959
7	X	X	X	X													1, 2 of NW¼		328.87	DLE	LA 0104028	3/3/1955		Canc 6/8/1956
19					X	X	X	X											160.00	DLE	LA 0102418	4/22/1955		Canc 10/8/1959
31																								
32																		Subdiv Und; 4S 15E		R/W Trans Line	LA 0149780	5/3/1957		Act of Cong 3/4/1911; Proof of Construction 4/25/1962
32					X	X	X	X											160.00	OG Lse	LA 0151201	6/1/1958		Term 5/31/1962; Sim list 6/1962
					ENTIRE TOWNSHIP													27S 39E MD Mer		BLM O Cl Non-suitable for Agri	R 258	9/28/1959		Supplemented by FR 35-3532; Effective 3/21/1960
30																	1, 2 of NW¼	5S 16E	169.17	DLE Pat	1211359	8/10/1960		LA 0101874

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PARTIALLY SURVEYED TOWNSHIP 5 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION NE ¼				NW ¼				SW ¼				SE ¼				LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS						
19													X	X	X	X								
30	X	X																	240.00	DLE Pat	1231114	3/5/1963		LA 0101875
29					X	X	X	X											160.00	DLE Pat	1231115	3/5/1963		LA 0112534;
31																		Subdiv Und; 5S 15E		R/W Hwy & Drainage Area	R 05498	12/8/1964		Act of Cong 8/27/1958; Proof of Construction 8/29/1967
					ENTIRE TOWNSHIP													See Rmks						All unappropriated public land, Chuckwalla Planning Unit; Segr from appropriation
																								only under Agri Land Laws & from sales under RS 2455; Other Tp 5S 12E; Cl BLM O
																				BLM O Prop Cl Mult Use	R 702	9/28/1967		12/13/1967; Term in its entirety 9/13/1990
					ENTIRE TOWNSHIP													3S 35E MD Mer		Act of Cong Des California				
																				Desert Conserv Area		10/21/1976		
25																		All; 5S 18E	640.00	OG Lse	CA 10390	6/1/1982		Term 6/1/1983
20						X	X	X	X	X	X	X	X	X	X	X								
21																		All						
22																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist of Southern Calif
23																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist of Southern Calif
27	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X								
28																		All						
29	X	X	X	X					X	X	X	X	X	X	X	X								
30			X	X																				
31																		All						
32																		All						
33																		All						
34																		All						
35					X	X	X						X	X					6675.08	OG Lse	CA 8885	5/1/1982		Term 5/1/1985
2																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
3																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
4																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
5																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
7																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
8																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
9																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
10																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
11																		All						
14																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
15																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
17																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
18																		See Rmks						All, Excluding lands granted to Metropolitan Water Dist
19	X	X	X	X													See Rmks		6055.01	OG Lse	CA 8886	5/1/1982		Lots 1, 2 NW¼, 1, 2 SW¼; Term 5/1/1985
31																	See Rmks	6S 17E		R/W Access Rd	CA 14383	2/28/1985		5/14/1990 Within SW portion 2; Act of Cong 10/21/1976; Grant term 20 Yrs; Canc, case closed
31																		Within SE¼SE¼						
32-33																		Within S½						
34																		Within S½; 6S 17E		R/W Access Rd	CA 13971	7/3/1985		Act of Cong 10/21/1976; Grant term 25 Yrs; Rel & Case closed 1/4/1993
31																		Within SW¼SW¼; 5S 8E		R/W UNDGD Telecomm Line &				
																				Ancillary Fac	CA 18888	8/1/1986		Act of Cong 10/21/1976; Grant term 50 Yrs; Also granted in various other states
31																		All; 1S 32E MD Mer		BLM Prop PX	CACA 37101-FD	7/30/1996		Segr Exp 7/29/2001

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PARTIALLY SURVEYED TOWNSHIP 5 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE 1/4				NW 1/4				SW 1/4				SE 1/4											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS						
31																								
32																		Subdiv Und: 4S 14E		FERC O Wdl Pwr Proj 13123 Trans				
																				line	CACA 49980	4/28/2008		All land lying within Proj Bdy
					ENTIRE		TOWNSHIP											8N 4E		Prop Wdl Solar Energy Study Areas	CACA 50951	6/30/2009		Segr Term 2 Yrs; See Admt 4/21/2011
30			X	X															80.00	NORA PS Cnvy Res Min Int	CACA 50670	5/21/2010		Act of Cong 10/21/1976; Segr Term 5/21/2012
1,2																		Excl Palen-McCoy Wdns						
3																		E1/2E1/2E1/2						
5									X	X	X	X					Lots 1,2 of NW1/4							
6																		All						
7																		Excl non-public lands						
8					X	X	X	X	X	X	X	X	X	X	X	X								
9									X	X	X	X		X	X			See Rmks						SW1/4NE1/4SE1/4, W1/2SE1/4SE1/4, SE1/4SE1/4SE1/4
10																		E1/2E1/2E1/2						
11,14																		See Rmks						Excl Palen-McCoy and non-public lands
15																		See Rmks						NE1/4NE1/4NE1/4, SW1/4NW1/4SW1/4, W1/2SW1/4SW1/4, SE1/4SW1/4SW1/4, S1/2SE1/4SW1/4
17,18																		Excl non-public lands						
19	X	X	X	X													See Rmks							Lots 1, 2 of NW1/4; Lots 1, 2 of SW1/4
20						X	X	X	X	X	X	X	X	X	X	X								
21																		All						
22			X		X	X	X	X	X	X	X	X		X	X	X		See Rmks						SW1/4NW1/4NE1/4, NW1/4NE1/4SE1/4, S1/2NE1/4SE1/4
23					X			X			X	X	X	X	X	X		See Rmks						NE1/4 Excl Palen-McCoy Wdns; E1/2NE1/4SW1/4
26							X		X	X	X	X												
27	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X								
28																		All						
29	X	X	X	X					X	X	X	X	X	X	X	X								
31-34																		All						
35																		See Rmks; 8N 4E		Admt Prop Wdl Solar Energy Zones	CACA 50951	4/21/2011		Term 6/29/2013; See Admt 12/17/2012 NW1/4 Excl non-public lands; Segr Term 6/29/2011; Notice of Segr 6/30/2011, Segr
1, 2																		Excl Palen-McCoy Wdns						
3																		Excl CALA 053588						
5									X	X	X	X					1, 2 NW1/4							
6																		All						
7																		Excl CALA 053581						
8					X	X	X	X	X	X	X	X	X	X	X	X								
9									X	X	X	X		X	X			See Rmks						SW1/4NE1/4SE1/4, W1/2SE1/4SE1/4, SE1/4SE1/4SE1/4
10																		See Rmks						E1/2E1/2E1/2, Excl CALA 053581
11																		Excl Palen-McCoy Wdns						
14																		See Rmks						Excl Palen-McCoy Wdns, CALA 053588
15																		See Rmks						S1/2SE1/4SW1/4 Excl CALA 053588 NE1/4NE1/4NE1/4, SW1/4NW1/4SW1/4, W1/2SW1/4SW1/4, SE1/4SW1/4SW1/4,
17, 18																		Excl CALA 053581						
19	X	X	X	X													See Rmks							1, 2 NW1/4, 1, 2 SW1/4
20						X	X	X	X	X	X	X	X	X	X	X								
21																		All						
22																		Excl CALA 053588						
23																		See Rmks						Excl Palen-McCoy Wdns, CALA 053588

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PARTIALLY SURVEYED TOWNSHIP 5 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE 1/4				NW 1/4				SW 1/4				SE 1/4											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
																				Continued from page 4				
26							X		X	X	X	X												
27	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X								
28																		All						
29	X	X	X	X					X	X	X	X	X	X	X	X								
31-34																		All						
35					X	X	X											4S 15E		Admt Prop Wdl Solar Energy Zones	CACA 50951	4/12/2012		Segr Term 6/29/2013; Wdn PLO 7818 6/27/2013
1, 2																		See Rmks						Excl Palen-McCoy Wdns
3																		Excl CALA 053588						
5									X	X	X	X					1, 2 NW1/4							
6																		All						
7																		Excl CALA 053581						
8					X	X	X	X	X	X	X	X	X	X	X	X								
9									X	X	X	X		X	X									SW1/4NE1/4SE1/4, W1/2SE1/4SE1/4, SE1/4SE1/4SE1/4
10																		See Rmks						E1/2E1/2E1/2, EXCL CALA 053581
11																		Excl Palen-McCoy Wdns						
14																		See Rmks						Excl Palen-McCoy Wdns, CALA 053588
15																		See Rmks						S1/2SE1/4SW1/4, Excl CALA 053588 NE1/4NE1/4NE1/4, SW1/4NW1/4SW1/4, W1/2SW1/4SW1/4, SE1/4SW1/4SW1/4,
17, 18																		Excl CALA 053581						
19	X	X	X	X													See Rmks							lots 1,2 NW1/4, lots 1, 2 SW1/4
20						X	X	X	X	X	X	X	X	X	X	X								
21																		All						
22																		Excl CALA 053588						
23																		See Rmks						Excl Palen-McCoy Wdns, CALA 053588
26							X		X	X	X	X												
27	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X								
28																		All						
29	X	X	X	X					X	X	X	X	X	X	X	X								
31-34																		All						
35					X	X	X											4S 15E		PLO Wdl Riverside & Imperial E Solar Energy Zones	7818	6/27/2013		Wdn from Loc & entry under the United States mining laws, open to Min & Geo leasing & Min material sales; Segr Term 6/26/2033

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TOWNSHIP 6 SOUTH, RANGE 17 EAST, OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

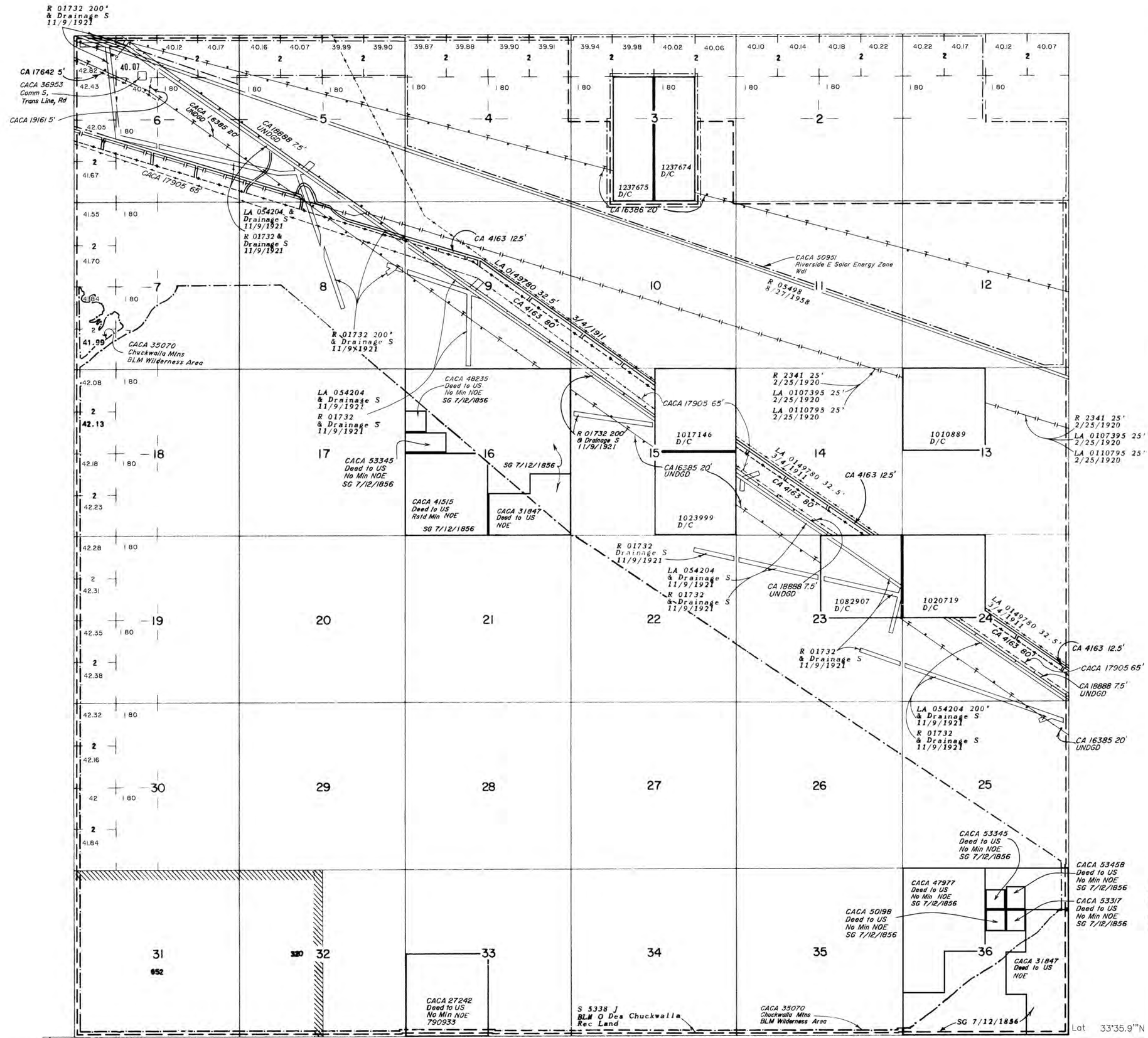
Protraction Diagram No 6 Officially Filed 3/13/1967

PALM SPRINGS-SOUTH COAST FIELD OFFICE
RIVERSIDE COUNTY
SEC 15

STATUS OF PUBLIC DOMAIN LAND AND MINERAL TITLES

MT PLAT

INDEX TO SEGREGATED TRACTS				
RESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISION



All Tp included in R 258 BLM O CI Non-suitable for Agri

All Tp within designated California Desert Conserv Area Act of Cong 10/21/1976

CACA 49980 FERC O 4/28/2008 Wdl Pwr Proj 13123 Trans line
Secs 4, 5, 8, 9, 10, 13, 14, 15, 23, 24: Subdiv Und

Tp within limits of RR Grant. Re: Transp Act 1940, SO 4/14/1953, SO 10/1/1953

FOR ORDERS EFFECTING OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERAL, WATER AND/OR OTHER PUBLIC PURPOSES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS.

SBM

CURRENT TO		
04-18-2013	JG	T6S R17E

USE PLATS

SCALE
10 5 0 10 20 30 60
30 chains to the inch

WARNING STATEMENT

This plat is the Bureau's Record of Title, and should be used only as a graphic display of the township survey data. Records hereon do not reflect title changes which may have been effected by lateral movements of rivers or other bodies of water. Refer to the cadastral surveys for official survey information.

PARTIALLY SURVEYED TOWNSHIP 6 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE ¼				NW ¼				SW ¼				SE ¼											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
16																		All						12/20/1993
36																		All		SG	Act of Cong	3/3/1853		Title to State to vest on approval of Survey, Subj to prior rights; Recon CACA 31847
9					X	X	X	X	X	X	X	X							320.00	DLE	LA 038410	3/25/1910		Canc 2/18/1948
4									X	X	X	X	X	X	X	X			320.00	DLE	LA 038411	3/25/1910		Partially Asgn LA 038721 3/15/1911; Canc 2/18/1948
9	X	X	X	X									X	X	X	X			320.00	DLE	LA 038413	3/25/1910		Canc 12/6/1949
5	X	X	X	X	X	X	X	X											320.12	DLE	LA 09847	3/26/1910		Rel 3/23/1912
4	X	X	X	X	X	X	X	X											319.56	DLE	LA 038420	3/26/1910		Partially Rel; Canc 2/18/1948
5									X	X	X	X	X	X	X	X			320.00	DLE	LA 038421	3/26/1910		Canc 2/18/1948
25	X	X	X	X									X	X	X	X			320.00	DLE	LA 038431	3/31/1910		Canc 2/18/1948
24					X	X	X	X	X	X	X	X							320.00	DLE	LA 09917	4/1/1910		Rel 4/12/1911
23	X	X	X	X									X	X	X	X			320.00	DLE	LA 09918	4/1/1910		Rel 4/26/1911
23					X	X	X	X	X	X	X	X							320.00	DLE	LA 09919	4/1/1910		Rel 4/12/1911
14					X	X	X	X	X	X	X	X							320.00	DLE	EC 0414	4/2/1910		Canc 11/26/1921
13					X	X	X	X	X	X	X	X							320.00	DLE	LA 09947	4/2/1910		Canc 1/28/1913
15	X	X	X	X									X	X	X	X			320.00	DLE	LA 09952	4/2/1910		Rel 4/10/1911
11					X	X	X	X	X	X	X	X							320.00	DLE	LA 038438	4/2/1910		Canc 12/6/1949
3	X	X	X	X									X	X	X	X			320.00	DLE	LA 038442	4/2/1910		Canc 2/18/1948
10					X	X	X	X	X	X	X	X							320.00	DLE	LA 038443	4/2/1910		Canc 2/18/1948
13	X	X	X	X									X	X	X	X			320.00	DLE	LA 038444	4/2/1910		Canc 12/6/1949
2					X	X	X	X	X	X	X	X							320.24	DLE	LA 038445	4/2/1910		Partially Asgn LA 039067 2/6/1913; Canc 12/22/1949
14	X	X	X	X									X	X	X	X			320.00	DLE	LA 038447	4/2/1910		Canc 2/18/1948
15					X	X	X	X	X	X	X	X							320.00	DLE	LA 09985	4/4/1910		Rel 4/10/1911
11													X	X	X	X			160.00	DLE	LA 038454	4/4/1910		Canc 12/6/1949
10	X	X	X	X									X	X	X	X			320.00	DLE	LA 038455	4/4/1910		Canc 2/18/1948
11	X	X	X	X															160.00	DLE	LA 038461	4/4/1910		Canc 2/8/1950
12									X	X	X	X	X	X	X	X			320.00	DLE	LA 038463	4/4/1910		Canc 12/14/1949
18	X	X	X	X									X	X	X	X			320.00	DLE	LA 038464	4/4/1910		Canc 7/15/1911
35					X	X	X	X	X	X	X	X							320.00	DLE	LA 038477	4/5/1910		Canc 8/16/1949
26					X	X	X	X	X	X	X	X							320.00	DLE	LA 038478	4/5/1910		Canc 8/9/1949
24	X	X	X	X									X	X	X	X			320.00	DLE	LA 038480	4/5/1910		Partially Asgn LA 038664 3/13/1911; Canc 12/6/1949
3					X	X	X	X	X	X	X	X							319.92	DLE	LA 038449	4/7/1910		Canc 12/8/1949
22	X	X	X	X	X	X	X	X											320.00	DLE	LA 010087	4/8/1910		Rel 7/1/1911
6					X	X	X	X	X	X	X	X							329.04	DLE	LA 010093	4/8/1910		Rel 5/13/1911
21									X	X	X	X	X	X	X	X			320.00	DLE	LA 010095	4/8/1910		Rel 4/20/1911
8	X	X	X	X									X	X	X	X			320.00	DLE	LA 010097	4/8/1910		Rel 3/26/1912
27	X	X	X	X	X	X	X	X											320.00	DLE	LA 038506	4/8/1910		Partially Asgn LA 038722 3/15/1911; Canc 12/6/1949
28	X	X	X	X	X	X	X	X											320.00	DLE	LA 038507	4/8/1910		Canc 12/6/1949
22									X	X	X	X	X	X	X	X			320.00	DLE	LA 038508	4/8/1910		Canc 12/6/1949
28									X	X	X	X	X	X	X	X			320.00	DLE	LA 038509	4/8/1910		Canc 12/6/1949
6	X	X	X	X									X	X	X	X			320.29	DLE	LA 038510	4/8/1910		Canc 6/13/1952
21	X	X	X	X	X	X	X	X											320.00	DLE	LA 038511	4/8/1910		Canc 12/6/1949
27									X	X	X	X	X	X	X	X			320.00	DLE	LA 038512	4/8/1910		Canc 8/16/1949
25					X	X	X	X	X	X	X	X							320.00	DLE	LA 038429	4/9/1910		Canc 1/25/1950
35	X	X	X	X									X	X	X	X			320.00	DLE	LA 038486	4/9/1910		Partially Asgn LA 038651 5/16/1912; Canc 12/6/1949
1									X	X	X	X	X	X	X	X			320.00	DLE	LA 038520	4/11/1910		Canc 12/6/1949
1	X	X	X	X	X	X	X	X											320.58	DLE	LA 038521	4/11/1910		Canc 8/16/1949
2	X	X	X	X									X	X	X	X			320.40	DLE	LA 038522	4/11/1910		Partially Asgn LA 039241 1/29/1914; Canc 8/16/1949

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PARTIALLY SURVEYED TOWNSHIP 6 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE ¼				NW ¼				SW ¼				SE ¼											
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
17	X	X	X	X	X	X	X	X											320.00	DLE	LA 010154	4/12/1910		Rel 4/8/1911
17									X	X	X	X	X	X	X	X			320.00					Partially Asgn LA 010489, LA 010490 5/9/1910, LA 010791 5/26/1910, LA 011045 7/9/1910,
																				DLE	LA 010155	4/12/1910		LA 011307 8/20/1910; Rel 4/8/1911
20	X	X	X	X									X	X	X	X			320.00	DLE	LA 010160	4/12/1910		Rel 5/23/1911
7									X	X	X	X	X	X	X	X			323.83	DLE	LA 010261	4/16/1910		Rel 10/13/1914
7	X	X	X	X	X	X	X	X											323.25	DLE	LA 038543	4/16/1910		Canc 12/6/1949
8					X	X	X	X	X	X	X	X							320.00	DLE	LA 038544	4/16/1910		Canc 8/3/1949
12	X	X	X	X	X	X	X	X											320.00	DLE	LA 09988	4/21/1910		Rel 10/27/1913
5					X	X	X												120.23	DLE	LA 038577	4/21/1910		Canc 7/22/1949
17											X								40.00	DLE	LA 010489	5/9/1910		Asgn out of LA 010155 dated 4/12/1910; Rel 4/10/1911
17										X									40.00	DLE	LA 010490	5/9/1910		Asgn out of LA 010155 dated 4/12/1910; Rel 4/10/1911
26	X	X	X	X									X	X	X	X			320.00	DLE	LA 038485	5/16/1910		Canc 8/9/1949
17									X			X							80.00	DLE	LA 010791	5/26/1910		Asgn out of LA 010155 dated 4/12/1910; Rel 4/10/1911
17																X			40.00	DLE	LA 011045	7/9/1910		Asgn out of LA 010155 dated 4/12/1910; Rel 4/6/1911
17															X				40.00	DLE	LA 011307	8/20/1910		Asgn out of LA 010155 dated 4/12/1910; Rel 6/27/1912
24	X	X	X	X															160.00	DLE	LA 038664	3/13/1911		Asgn out of LA 038480 dated 4/5/1910; Canc 2/8/1950
4									X	X	X	X							160.00	DLE	LA 038721	3/15/1911		Asgn out of LA 038411 dated 3/25/1910; Canc 2/18/1948
27			X	X															80.00	DLE	LA 038722	3/15/1911		Asgn out of LA 038506 dated 4/8/1910; Canc 2/18/1948
4					X	X	X	X											159.75	DLE	LA 039012	9/5/1911		Canc 11/9/1950
35			X																40.00	DLE	LA 038651	5/16/1912		Asgn out of LA 038486 dated 4/9/1910; Canc 2/8/1950
2					X	X	X	X											160.24	DLE	LA 039067	2/6/1913		Asgn out of LA 038445 dated 4/2/1910; Canc 7/20/1950
2													X	X	X	X			160.00	DLE	LA 039241	1/29/1914		Asgn out of LA 038522 dated 4/11/1910; Canc 11/9/1950
33									X	X	X	X						1N 5E	160.00	RRG Pat	790933	1/20/1921		Partially Recon CACA 27242 6/19/1990
16																		All						
36																		All		SG	Act of Cong	1/25/1927		Extends Act 3/3/1853 to Min lands, Subj to prior rights
5																								
6																								
7																								
8																								
9																								
15																								
17																								
21																								
22																								
23																								
26																								
27																								
35																		See Rmks		EO Wdl Municipal Water Supply		5/17/1927		All land lying within 50' of conduit LA 043640; Other Tp 3S 23E; Rev EO 8/22/1932
13					X	X	X	X											160.00	TC Pat	1010889	1/20/1928		LA 043946
15	X	X	X	X															160.00	CE Pat	1017146	6/22/1928		LA 044071
24					X	X	X	X											160.00	CE Pat	1020719	11/8/1928		LA 043949
15													X	X	X	X			160.00	CE Pat	1023999	2/20/1929		LA 044093
14									X	X	X	X							160.00	HE	LA 047711	11/1/1929		Canc 10/31/1935
24									X	X	X	X							160.00	HE	LA 049113	3/7/1931		Canc 1/8/1937
3																								
4																								
5																				Continued on page 3				

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PARTIALLY SURVEYED TOWNSHIP 6 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION NE ¼				NW ¼				SW ¼				SE ¼				LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
6																				Continued from page 2				
10																								
11																								
12																		Subdiv Und; 5S 15E						Act of Cong 3/4/1911; Proof of Construction 3/1/1933; Partially Rel & Amdt 7/19/1968;
																				R/W Tel & Teleg Line	LA 048360	6/8/1931		filed; See Consolidated CA 16385, CA 16386 9/21/1984 Proof of Construction 7/19/1968; Term 6/7/1981; Renewed, case file combined & inter-
23					X	X	X	X											160.00	HE	LA 049650	7/27/1931		Canc 11/12/1937
15					X	X	X	X											160.00	HE	LA 049874	10/22/1931		Canc 1/4/1938
15									X	X	X	X							160.00	HE	LA 049886	10/27/1931		Canc 12/30/1937
5																								
6																								
7																								
8																								
9																								
15																								
17																								
21																								
22																								
23																								
26																								
27																								
35																		See Rmks		EO Rev Municipal Water Supply				
																				EO 5/17/1927	5908	8/22/1932		All land lying within 50' center line of conduit; Other Tp 3S 23E
5																								
6																								
8																								
9																								
10																								
14																								
15																								
22																								
23																								
24																								
25																		Subdiv Und; 5S 15E		R/W Hwy & Drainage Area	R 01732	10/18/1933		Act of Cong 11/9/1921
23	X	X	X	X															160.00	HE Pat	1082907	5/4/1936		LA 049531
5							X		X	X	X	X			X									
6		X	X	X									X	X		X								
8					X			X																
9						X	X	X	X	X		X	X	X	X	X								
10											X													
14									X	X	X	X			X									
23					X	X		X																
24									X	X	X	X		X	X	X								
25	X	X																6S 12E		R/W Hwy & Drainage Area	LA 054204	8/14/1941		Act of Cong 11/9/1921
5																								
6																								
8																								
9																								
10																				Continued on page 4				

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PARTIALLY SURVEYED TOWNSHIP 6 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION NE ¼				NW ¼				SW ¼				SE ¼				LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS						
11																				Continued from page 3				
13																								
14																		Subdiv Und; 3S 2W		R/W Pipe Line	LA 072548	2/28/1950		Act of Cong 2/25/1920; Canc 4/15/1954
5																								consolidated, See CA 16385 9/21/1984
6																								
8																								
9																								
14																								
15																								
23																								
24																								
25																		Subdiv Und; 3S 3E		R/W Tel & Teleg Line	LA 070612	8/7/1950		Act of Cong 3/4/1911; Proof of Construction 12/21/1950; Case file combined, interfiled,
5																								
6																								
8																								
9																								
10																								
11																								
13																								
14																		Subdiv Und; 3S 2W		R/W Pipe Line	LA 0110795	4/7/1954		Act of Cong 2/25/1920; Proof of Construction 7/15/1954
5																								
6																								
8																								
9																								
10																								
11																								
13																								
14																		Subdiv Und; 3S 4E		R/W Pipe Line	LA 0107395	6/22/1954		Act of Cong 2/25/1920; Proof of Construction 9/16/1954
22																		All						
26																		All	1280.00	OG Lse	LA 0112219	12/1/1954		Term 11/30/1959
15					X	X	X	X	X	X	X	X							320.00	OG Lse	LA 0112550	12/1/1954		Canc 12/1/1958
13	X	X	X	X									X	X	X	X			320.00	DLE	LA 0101897	4/22/1955		Canc 2/1/1960
10	X	X	X	X									X	X	X	X			320.00	DLE	LA 0101901	4/22/1955		Canc 11/6/1957
11					X	X	X	X	X	X	X	X							320.00	DLE	LA 0101902	4/22/1955		Canc 11/6/1957
12	X	X	X	X									X	X	X	X			320.00	DLE	LA 0101903	4/22/1955		Canc 9/23/1957
11	X	X	X	X									X	X	X	X			320.00	DLE	LA 0102308	4/22/1955		Canc 6/3/1959
4					X	X	X	X											160.00	DLE	LA 0102742	4/22/1955		Canc 10/28/1957
2									X	X	X	X							160.00	DLE	LA 0102743	4/22/1955		Canc 6/13/1959
12					X	X	X	X	X	X	X	X							320.00	DLE	LA 0103712	4/22/1955		Canc 10/8/1959
2													X			X			80.00	DLE	LA 0105378	4/22/1955		Canc 9/1/1959
2																	1, 2 of NW¼		160.24	DLE	LA 0105532	4/22/1955		Canc 7/31/1959
1										X	X								80.00	DLE	LA 0105663	4/22/1955		Canc 2/11/1958
1													X	X	X	X			160.00	DLE	LA 0105739	4/22/1955		Canc 9/14/1960
4													X	X	X	X			160.00	DLE	LA 0112536	4/22/1955		Canc 10/8/1959
4																								
5																								
9																				Continued on page 5				

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PARTIALLY SURVEYED TOWNSHIP 6 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION NE ¼				NW ¼				SW ¼				SE ¼				LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS						
10																				Continued from page 4				
14																								
15																								
24																		Subdiv Und; 4S 15E		R/W Trans Line	LA 0149780	5/3/1957		Act of Cong 3/4/1911; Proof of Construction 4/25/1962
					ENTIRE TOWNSHIP													27S 39E MD Mer		BLM O Cl Non-suitable for Agri	R 258	9/28/1959		Supplemented by FR 35-3532 Effective 3/21/1960
3																								
4																								
5																								
6																								
9																								
10																								
11																								
12																								
13																		Subdiv Und; 5S 15E		R/W Hwy	R 05498	12/18/1964		Act of Cong 8/27/1958; Proof of Construction 8/29/1967
3														X	X		W½ 1 of NE¼		120.00	DLE Pat	1237674	12/28/1964		LA 0102690
3									X			X					E½ 1 of NW¼		120.00	DLE Pat	1237675	12/28/1964		LA 0102691
					ENTIRE TOWNSHIP													See Rmks						All unappropriated public land, Chuckwalla Planning Unit; Segr from appropriation
																								only under Agri Land Laws & from sales under RS 2455; Other Tp 5S 12E; Cl BLM O
																				BLM O Prop Cl Mult Use	R 702	9/28/1967		12/13/1967; Term in its entirety 9/13/1990
5											X	X			X									
6									X	X				X	X	X								
8	X	X																						
9			X	X	X	X		X																
10							X	X	X				X	X										
11										X	X	X			X	X								
13	X	X		X																				
14	X																	6S 10E		R/W Pipe Line	R 2341	2/4/1970		Act of Cong 2/25/1920; Proof of Construction 3/29/1976
3										X	X		X			X								
4																		All						
5																		All						
6																		All						
7																		All						
8																		All						
9																		All						
10																		All						
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12																		All						
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19																		All						
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21																		All						
22																		All		Continued on page 6				

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PARTIALLY SURVEYED TOWNSHIP 6 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

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23																		All		Continued from page 5				
24																		All						
25																		All						
26																		All						
27																		All						
28																		All						
29																		All						
30																		All						
31																		All						
32																		All						
33																		All						
34																		All						
35																		All						
36																		All; 6S 16E		BLM O Des Chuckwalla Rec Land	S 5338 J	8/21/1972		
					ENTIRE TOWNSHIP													3S 35E MD Mer		Act of Cong Des California				
																				Desert Conserv Area		10/21/1976		
5																								
6																								
8																								
9																								
10																								
14																								
15																								
24																		Subdiv Und; 3S 5E		R/W Trans Line & Access Rd	CA 4163	4/23/1980		Act of Cong 10/21/1976; Grant term 50 Yrs
19																		All						
20																		All						
21																		All						
22																		All						
23					X	X	X	X	X	X	X	X	X	X	X	X								
24	X	X	X	X					X	X	X	X	X	X	X	X								
25																		All						
26																		All						
27																		All						
28																		All						
29																		All						
30																		All						
31																		All						
32																		All						
33	X	X	X	X	X	X	X	X					X	X	X	X								
34																		All						
35	X	X	X	X	X	X	X	X											10109.64	OG Lse	CA 8897	1/1/1982		Partially Rel 12/17/1984; Partially Sim list 6/1985; Term 1/1/1986
18																		All	648.62	OG Lse	CA 9074	1/1/1982		Term 1/1/1986
1																		All						
2																		All						
3										X	X		X			X		See Rmks						E½ Lot 1 NE¼, Lot 2 NE¼, W½ Lot 1 NW¼, Lot 2 NW¼
4																		All						
5																		All						
6																		All						
7																		All						
8																		All		Continued on page 7				

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PARTIALLY SURVEYED TOWNSHIP 6 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

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9																		All		Continued from page 6				
10																		All						
11																		All						
12																		All						
13	X	X	X	X					X	X	X	X	X	X	X	X								
14																		All						
15					X	X	X	X	X	X	X	X												
17																		All	9537.31	OG Lse	CA 8898	4/1/1982		Term 4/1/1985
35									X	X	X	X	X	X	X	X			320.00	OG Lse	CA 11492	6/1/1982		Term 6/1/1983
5																		Within SW¼						
6																	See Rmks	Within N½SE¼						Lot 1 NE¼, Lot 1, 2 NW¼
8																		Within NE¼, NE¼NW¼						
9																		Within SW¼NW¼, S½						
14																		Within SW¼SW¼						
15																		Within NW¼						
23																		Within NE¼NW¼						
24																		Within SW¼, SW¼SE¼						
25																		Within N½NE¼; 3S 3E		R/W UNDGD Tel & Teleg	CA 16385	9/21/1984		Act of Cong 10/21/1976; Grant term perpetuity; See Amdt Loc 10/29/1985
3																		Within W½SW¼, SE¼SE¼						
4																	Within 1 NW¼	Within S½						
5																	See Rmks							Within Lot 1 NE¼, 1, 2 NW¼
6																	See Rmks							Within Lot 2 NE¼, 2 NW¼
10																		Within NE¼NE¼						
11																		Within N½NW¼						
12																		See Rmks		R/W Aerial Tel & Teleg	CA 16386			Within N½NE¼SE¼; 3S 3E; Act of Cong 10/21/1976; Grant term perpetuity
6																	See Rmks	5S 17E		R/W Access Rd	CA 14383	2/28/1985		5/14/1990 Within NW portion 2; Act of Cong 10/21/1976; Grant term 20 Yrs ; Canc, case closed
5	X																	Within NE¼NE¼		R/W Access Rd	CA 13971	7/3/1985		Act of Cong 10/21/1976; Grant term 25 Yrs ; Rel & Case closed 1/4/1993
6																		Within NW¼, 5S 15E		R/W Trans Line	CA 17642	10/10/1985		Act of Cong 10/21/1976
14																		Within S½SW¼		R/W Amdt Loc UNDGD Tel & Teleg	CA 16385	10/29/1985		
21	X	X	X	X	X								X						155.97	OG Lse	CA 17544	1/1/1986		Excluding Chuckwalla Mountains WSA (No. 348); Term 1/1/1987
5																		Within S½						
6																		Within N½, NE¼NE¼SE¼						
8																		Within NE¼NE¼						
9																		Within NW¼, S½						
14																		Within S½						
15																		Within NW¼						
24																		Within S½; 5S 8E		R/W UNDGD Telecomm Line &				
																				Ancillary Fac	CA 18888	8/1/1986		Act of Cong 10/21/1976; Grant term 50 Yrs; Also granted in various other states
6																		Within SE¼NW¼		R/W Trans Line	CA 19161	1/16/1987		Act of Cong 10/21/1976; Grant term perpetual
6											X	X			X	X		Within						
7																		Within NE¼NE¼NE¼						
8	X	X			X	X												Within						
9							X	X					X	X	X	X		Within						
10											X							Within						
14									X	X	X	X						Within						
15					X													Within						
24													X	X	X	X		Within; 3S 5E		R/W Power Trans Line	CACA 17905	8/11/1989		Act of Cong 10/21/1976; Grant term 20 Yrs
16															X	X		S½NE¼SE¼						
33									X	X	X	X						6S 16E	160.00	Deed to US	CACA 27242	6/19/1990		Title accepted 6/22/1990
36				X									X			X			330.00	Deed to US	CACA 31847	12/20/1993		Title accepted 4/16/1994

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PARTIALLY SURVEYED TOWNSHIP 6 SOUTH RANGE 17 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SECTION	SUBDIVISION																LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
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	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
5																		All						
6																		All; 1S 32E WD Ker		BLM Prop PX	CACA 37101-FD	7/30/1996		Segr Exp 7/29/2001
6					X	X	X	X												R/W Comm S, Trans Line, Rd	CACA 36953	11/15/1997		Act of Cong 10/21/1976; Grant Term 30 Yrs
16																			160.00	Deed to US	CACA 41515	4/3/2000		Title accepted 2/9/2001
16																		NWI/4SWI/4NWI/4	10.00	Donation Deed to US	CACA 48235	11/20/2006		Title accepted 2/8/2007
36					X	X	X	X		X									200.00	Deed to US	CACA 47977	3/7/2007		Title accepted 4/6/2007
4																								
5																								
8																								
9																								
10																								
13																								
14																								
15																								
23																								
24																		Subdiv Und; 4S 14E		FERC O Wdl Pwr Proj 13123 Trans				
																				line	CACA 49980	4/28/2008		All land lying within Proj Bdy
					ENTIRE	TOWNSHIP												8N 4E		Prop Wdl Solar Energy Study Areas	CACA 50951	6/30/2009		Segr Term 2 Yrs; See Admt 4/21/2011
36																		NWI/4SWI/4NEI/4	10.00	Donation Deed to US	CACA 50198	6/15/2009		Title accepted 8/27/2009
1									X	X	X	X	X	X	X	X	Lots 1, 2 of NWI/4							
2																		All						
3																		Excl non-public lands						
4																		Por N of CAR 05498						
10-12																		See Rmks;						Por N of CAR 05498
																		8N 4E		Admt Prop Wdl Solar Energy Zones	CACA 50951	4/21/2011		Admt 12/17/2012 Segr Term 6/29/2011; Notice of Segr 6/30/2011, Segr Term 6/29/2013; See
36																		SEI/4NWI/4NEI/4	10.00	Deed to US	CACA 53458	11/6/2012		Title accepted 12/21/2012
36																		NEI/4SWI/4NEI/4	10.00	Deed to US	CACA 53317	12/4/2012		Title accepted 2/4/2013
16																		See Rmks	20.00					SW¼SW¼NW¼, SE¼SW¼NW¼;
36																		SW¼NW¼NE¼	10.00	Deed to US	CACA 53345	11/12/2012		Title accepted 1/8/2013
1									X	X	X	X	X	X	X	X	See Rmks							lots 1,2 NEI/4, lots 1,2 NWI/4
2																		All						
3										X	X		X			X	See Rmks							EI/2 lot 1 NEI/4, lot 2 NEI/4, lot 1, 2 NWI/4
4																		N of N Bdy CARI 05498						
5																	2 NEI/4, 2 NWI/4							
6																		N of N Bdy CARI 05498						
9-12																		N of N Bdy CARI 05498		Admt Prop Wdl Solar Energy Zones	CACA 50951	12/17/2012		Segr Term 6/29/2013; Wdn PLO 7818 6/27/2013
1									X	X	X	X	X	X	X	X	1,2 NWI/4							
2																		All						
3										X	X		X			X	See Rmks							E 1/2 lot 1 NEI/4, lot 2 NEI/4, WI/2 lot 1 NWI/4, lot 2 NWI/4
4																		N of N Bdy CARI 05498						
5																	See Rmks							lot 2 NEI/4, lot 2 NWI/4
6																		N of N Bdy CARI 05498						
9-12																		N of N Bdy CARI 05498						Wdn from Loc & entry under the United States mining laws, open to Min & Geo
																		4S 15E		PLO Wdl Riverside & Imperial E Solar Energy Zones	7818	6/27/2013		leasing & Min material sales; Segr Term 6/26/2033

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Appendix E

PSEGS FSA Solar PV Alternative Discussion

Reconfigured Alternative #2 or #3 could generate nighttime light pollution from its operational lighting, and this impact would be **similar to PSEGS**. As with the proposed modified project, the effective implementation of Condition of Certification **VIS-4** (VIS-3 from the 2010 Commission Decision on the PSPP) would reduce this alternative's off-site, operation-related lighting impacts to less than significant.

Reconfigured Alternative #2 or #3 would not have solar towers that would require Federal Aviation Authority (FAA) safety lighting, and **no impact** would occur.

Waste Management

The Commission Decision for the original PSPP evaluated effects of the approved Reconfigured Alternatives #2 and #3 on waste management. Based on current estimates provided by the project owner, disposal of non-hazardous and hazardous waste generated by the proposed PSEGS would be approximately the same as the originally licensed project (i.e., the No-Project Alternative) and would not adversely impact either Class III or Class I landfill capacity. This impact would be **similar to PSEGS**. The original PSPP would require the use of HTF, which must be disposed of as a hazardous waste. The potential for discharge of HTF could result in significant environmental impacts. Because SPT technology does not use any similar HTF, this impact would be **much greater than PSEGS**.

Potential impacts relating to soil and water contamination and the potential presence of unexploded ordnance (UXO) at the site would be **similar to PSEGS**. A UXO Identification, Training, and Reporting Plan would still be required, which would include site worker training and procedures for UXO investigation, removal, and disposal.

SOLAR PHOTOVOLTAIC (PV) ALTERNATIVE WITH SINGLE-AXIS TRACKING TECHNOLOGY

Overview

Solar PV technology involves the direct conversion of photons (i.e., sunlight) into electricity. PV modules (also called solar panels) absorb solar radiation and convert it into direct current electricity. This direct current power is then converted into alternating current electricity for delivery to the electrical grid system. This conversion occurs when direct current (DC) flows through a device called an *inverter*, which converts the electrical characteristics to alternating current (AC) that can be tied to the power distribution system for power delivery. The electrical current produced is directly dependent on how much light strikes the module. Multiple PV panels are wired together to form an array, an arrangement that increases the total system output. PV technology does not involve thermal energy or the production of steam to power turbines. PV systems are relatively simple to operate and maintain and require little water for project operations compared to solar thermal energy systems.

The Solar PV Alternative would involve constructing and operating a utility-scale, single-axis tracking PV project at the proposed PSEGS site. PV trackers using single-axis (east-west) tracking maximize the panels' absorption of sunlight during the day and throughout the year. Tracking PV modules produce more electricity annually compared to fixed-tilt modules.

The April 2012 Desert Renewable Energy Conservation Plan Stakeholder Committee Meeting included a review of an update to the renewable energy calculator that was developed by Energy Commission staff to use as a tool for framing an understanding of renewable energy supply and demand for the 2040 planning horizon. Partly in response to comments on an earlier version of the 2040 planning scenario, the acreage requirement for all central station solar projects, including solar thermal and PV project types, was reduced from 9.1 acres per MW to 7 acres per MW. Although it was acknowledged at the meeting that scenarios will vary depending partly on the portfolio[5], the modified efficiency ratio is considered to be plausible and reasonable. Adjustments to the portfolio will be made every 5 years during the planning horizon.

Alternatives Table 3 lists five utility-scale, single-axis tracking PV projects that are approved and at different stages of development in California. Based on the generating capacities and acreage requirements for these sample projects, staff assumes that a single-axis tracking solar PV project with an electrical capacity similar to the proposed PSEGS could be constructed at the project site with no change to the site boundary. Operational water use for the PV projects listed in the table ranges from approximately 12.4 afy for the California Valley Solar Ranch Project to approximately 15–22 afy for the McCoy Solar Energy Project. The proposed modified project would require 201 afy for project operations.

The Solar PV Alternative would not require a natural gas supply; therefore, this alternative would not require a new extension of the existing Southern California Gas distribution system to the project site boundary.

The previous alternatives analysis for the licensed PSPP eliminated a utility-scale PV alternative from detailed consideration, stating that it would require more extensive site grading and a stormwater management system that would be greater than the PSPP (Energy Commission 2010b). Based on staff's current review of several utility-scale PV projects in the state, developers are installing systems that minimize site grading and removal of on-site vegetation. Site restoration and revegetation is typically required to repair and restore areas that were disturbed during construction. Similar to the supporting piers for the heliostats, PV module supports are installed to allow stormwater flows to cross the site. In addition to the projects shown in **Alternatives Table 3**, PV projects are being installed in the state to minimize site disturbance and avoid or minimize cut and fill grading, including the Desert Sunlight Solar Farm Project in the Chuckwalla Valley and the Topaz Solar Farm Project on the Carrizo Plain. Therefore, the analysis of the Solar PV Alternative in this staff assessment has conclusions that

[5] The portfolio includes central station solar thermal, central station PV, wind, biomass/fuels, geothermal, utility-side distributed generation, and small rooftop solar.

are different based on currently available information on potential environmental impacts from PV systems. Further details are provided following **Alternatives Table 3** on two of the PV projects reviewed by staff.

Alternatives Table 3
Summary Descriptions of Five Approved Single-Axis Tracking Photovoltaic Projects in California

Project Name and Location	PV Technology	Energy Capacity and Acres		Schedule
California Valley Solar Ranch Project, northeastern edge of the Carrizo Plain in southeastern San Luis Obispo County	Crystalline silicon PV panels attached to SunPower T0 Tracker® system (1,032 tracker units in ten arrays); single-axis tracking; about 757,320 solar panels	250 MWs; 1,500 acres		Project approved April 2011 and will be fully operational in 2013
Unit 1 of the McCoy Solar Energy Project, Riverside County approximately 13 miles northwest of Blythe	PV panels using single-axis trackers.	250 MWs; 2,186 acres		Record of Decision issued March 2013 on the whole 750-MW project; construction completion end of 2016
Quinto Solar PV Project, Merced County approximately 11 miles north of San Luis Reservoir	SunPower 425-watt monocrystalline solar panels attached to SunPower T0 Tracker® system; about 306,720 solar panels mounted on approximately 2,900 single-axis trackers	110 MWs; permanent structures (solar arrays, operation and maintenance structures, inverters, etc.) will cover approximately 528 acres of the 1,012-acre project site		Project approved 2012 and will be fully operational late 2014
Antelope Valley Solar Project I, Kern and Los Angeles counties in the Tehachapi area	SunPower 425-watt monocrystalline solar panels attached to SunPower T0 Tracker® system; about 1.875 million solar panels	325 MWs	Modified project site will cover approximately 4,642 acres; permanent structures will cover approximately 2,152 acres of the total site	Construction began in 2013 and power generation will begin in 2015
Antelope Valley Solar Project II, Kern and Los Angeles counties in the Tehachapi area		276 MWs		
Sources: Ekstrom, pers. comm., 2012; Randolph, pers. comm., 2012; San Luis Obispo County Planning and Building Department 2011; DOE 2011; BLM 2012; Kern County Planning and Community Development Department 2012; Merced County Planning and Community Development Department 2012.				

California Valley Solar Ranch Project

The SunPower T0 Tracker® technology is described in the final environmental assessment (EA) for the California Valley Solar Ranch (CVSR) Project and provides an example of the type of technology that could potentially be installed at the PSEGS site. At the CVSR Project site on the Carizzo Plain, the T0 Tracker technology allows more efficient use of the site due to its tolerance for slope variations (DOE 2011). This tracker technology has a low profile, typically 5 to 6 feet above the ground when oriented in the horizontal position (or slightly higher in limited areas at the site with steeper slopes). No permanently shaded areas are created by the panels. The trackers use low-impact penetrating foundations that are driven directly into the ground without the need for concrete foundations. Each foundation has a footprint of approximately 4½ inches. The tracker and low-impact penetrating foundation structures and mechanical assemblies are made of galvanized steel. **Alternatives Figure 3a** shows a photograph of a typical T0 Tracker.

For the CVSR Project, the array blocks (i.e., sets of PV panels) cover approximately 6 to 6½ acres. The inverters (described above) are centrally located in each array block. Many array blocks compose a single array. **Alternatives Figures 3a and 3b** provide photographs of some of the single-axis tracking PV arrays at the CVSR Project site.

As described in the final EA for the CVSR Project, power is transmitted from the inverters to the substation through medium-voltage AC collection lines running underground and overhead. The poles supporting the medium-voltage AC lines are typically about 50 feet tall. The final EA estimates that the electrical collection lines will require approximately 200 utility poles. The power is converted from 34.5 kV to 230 kV at the CVSR Project substation. A new, approximately 4-mile-long overhead 230-kV interconnection line is connecting the CVSR Project to the existing PG&E 230-kV Morro Bay-Midway transmission line at a new switching station. **Alternatives Figure 4** shows the solar arrays and major project features for the CVSR Project for illustrative purposes. As depicted in **Alternatives Figure 4**, PV arrays may be configured in noncontiguous areas of different sizes and shapes.

Most of the CVSR Project will be constructed on approximately 1,500 acres. As described in the final EA for the CVSR Project, site preparation for installation of trackers requires grading of about 315 acres, excluding grading for fire access roads around the arrays (DOE 2011). The project's interior road system requires construction of approximately 24 miles of roadway covering about 80 acres. Of the total 1,500 acres, approximately 90 acres are expected to be subject to permanent disturbance. This acreage does not include construction of the interconnection line, which is expected to permanently disturb approximately 16 acres.

Installation of the SunPower T0 Tracker® system generally does not require grubbing (removal of vegetation); vegetation is only removed in areas where grading occurs. As described by a representative of the project developer for the CVSR Project, strict procedures are followed for top soil retention in disturbed areas (Ekstrom, pers. comm., 2013). Following ground disturbance, the top soil and seed bank that was removed

during construction is returned and redistributed over the disturbed area to revegetate the site, in accordance with the agency-approved Habitat Restoration and Revegetation Plan. **Alternatives Figure 3a** includes a photograph showing grasses beneath the arrays.

McCoy Solar Energy Project

BLM recently issued the ROD approving construction and operation of the McCoy Solar Energy Project (MSEP), a 750-MW solar PV project in Riverside County near Blythe, California (BLM 2013b). The approved project will be constructed in two units with Unit 1 covering approximately 2,259 acres inside the project's fence line. Of that total, approximately 477 acres are under County jurisdiction and outside of BLM's right-of-way grant boundary; an EIR is being prepared by the County for the portion of the MSEP that will be constructed on private land. Unit 1 will have a generating capacity of up to 250 MW. The power generated by Unit 1 of the MSEP will be sold to Southern California Edison (SCE) under a PPA that was approved by CPUC in June 2012.

The project developer for the MSEP has not yet selected a solar panel supplier for Unit 1 (Neville, pers. comm., 2013). The panels will either be thin film (cadmium telluride [CdTe]) or polycrystalline silicon; either type of panel can be installed on a single-axis tracking system. The energy generation efficiency of the MSEP will vary depending on the type of panel that is selected and installed.

Because the MSEP site is nearly flat, minimal grading and earthwork will be used at the site (BLM 2013b). Stormwater drainage will be designed to maintain existing surface water hydrology and drainage wherever possible. PV tracking and framing structures will generally be installed to follow the existing land contours. Localized grading will be used only to compensate for major variations in topography while avoiding significant impacts on existing surface hydrology. Although not anticipated, if large areas require grading, a disc and roll technique would be used rather than conventional cut and fill grading (BLM 2012). Adopted mitigation measures include a measure (APM BIO-2p) to develop and implement a revegetation plan to restore temporarily disturbed areas (BLM 2013b). Even so, the biological resources analysis in the final EIS for the MSEP assumes that the entire MSEP site would be subject to permanent ground disturbance, including temporary laydown areas that would be converted to the solar field following construction (BLM 2012).

Potential to Attain Project Objectives

Ongoing approval and construction of utility-scale PV projects in California and Nevada indicate the suitability of using PV technology for development of a large, renewable energy power plant with a capacity of several hundred MWs. It is possible that the PSEGS 3,576-acre solar field area could be used for design and layout of a single-axis tracking PV project to achieve close to the 500-MW capacity of the proposed modified project. The site plan for the CVSR project shows noncontiguous polygons forming the array boundaries for that project (**Alternatives Figure 4**), which demonstrates that single-axis tracker systems do not necessarily require extensive, uninterrupted areas for the layout of solar array fields. Assuming that configuring a single-axis tracking PV

project has some inherent flexibility, this alternative could potentially satisfy the project objectives to comply with applicable LORS and avoid or minimize significant impacts to the greatest extent feasible. The environment of the PSEGS site is unlike the CVSR project site on the Carrizo Plain, and further study would be necessary to devise a site plan for the layout of single-axis PV trackers at the PSEGS site. This alternative would satisfy the project objective to develop a renewable energy facility in an area with high solar value and minimal slope.

This alternative would not satisfy the project owner's objective to develop a solar thermal power plant at a site where some authorizations for construction have been obtained. The Energy Commission's prior licensing of the PSEGS site for a solar thermal electric generation facility would not apply to the Solar PV Alternative (see the discussion below under "Potential Feasibility Issues"). BLM would be the primary permitting authority, and staff assumes that submittal of a revised POD to BLM would be required. Given the change of permitting authority, it is unknown whether this alternative could satisfy the project objectives to construct and operate a utility-scale solar energy project and assist SCE in satisfying its RPS program goals.

The Solar PV Alternative could potentially satisfy many of the project objectives, although it is uncertain whether the change of technology would allow development of this alternative in a timely manner. See the discussions below under, "Environmental Analysis," for general analyses of the potential environmental effects of this alternative compared to the proposed modified project.

Potential Feasibility Issues

The Petition to Amend for the proposed modified project states that each of the two 250-MW units has an approved PPA with SCE (Palen Solar Holdings 2012). It is unknown whether changing the technology of the PSEGS to single-axis PV trackers would require amending the PPAs. It is also unknown whether CPUC would approve amendments to the PPAs allowing the change, if such approvals would be necessary.

As stated above, Palen Solar Holdings has an LGIA with CAISO for 500 MWs of interconnection rights to deliver electricity from the PSEGS to SCE's Red Bluff Substation (Palen Solar Holdings 2012). A schedule delay could result in a project's failure to meet its milestones and a breach of the LGIA. Changing the project technology to solar PV could at least cause a project schedule delay, and it is not known at what point a project schedule delay would affect project viability.

The Warren-Alquist Act was amended in 2012 to allow certain solar thermal power plants that were certified by the Energy Commission to be converted, in whole or in part, to a solar PV technology and reviewed by the Energy Commission as an amendment to the originally licensed project. For a project located on BLM-managed land, issuance of an ROD by BLM would have been required before September 1, 2011 (Pub. Resources Code, § 25500.1[a]). Because the PSPP did not receive an ROD, the Energy Commission would not retain jurisdiction if a change to a solar PV technology was proposed at the site. In this instance, BLM would be the primary permitting authority,

and changing the project technology to solar PV at the PSEGS site would presumably require submittal of a revised POD to BLM, which would also delay the project.

Environmental Analysis

Alternatives Table 4 presents a summary comparison of impacts of the proposed PSEGS to the same or similar potential impacts of the Solar PV Alternative with Single-Axis Tracking Technology. Comparative discussions for each environmental topic area follow the table.

Alternatives Table 4
Summary Comparison of Impacts of the Proposed PSEGS to the Solar Photovoltaic Alternative with Single-Axis Tracking Technology

Environmental Effect	Proposed PSEGS	Solar PV Alternative
Air Quality		
Construction-related emissions	SM (locally)	Similar to PSEGS (SM)
Project operations emissions	SM (locally)	Less than PSEGS (SM)
Reduction in greenhouse gases	B (system wide)	Somewhat greater than PSEGS (B)
Biological Resources		
Impacts on special-status plant species	SM	Similar to PSEGS (SM)
Impacts on waters of the state	SM	Similar to PSEGS (SM)
Impacts on desert tortoise	SM	Similar to PSEGS (SM)
Impacts on special-status terrestrial wildlife species (kit fox, American badger)	SM	Similar to PSEGS (SM)
Potential impacts on avian species from collisions with project features	PSU	Similar to PSEGS (PSU)
Potential impacts on avian species from exposure to concentrated solar flux	PSU	—
Potential impacts on groundwater dependent ecosystems	SM	Somewhat less than PSEGS (SM)
Impacts on sand transport corridor	SM	Somewhat less than PSEGS (SM) *(see biological resources note)*
Impacts on sand dunes and Mojave fringe-toed lizard	SM	Somewhat less than PSEGS (SM) *(see biological resources note)*
Biological resources note: Comparative impacts for the Solar PV Alternative for indirect impacts on the sand transport corridor, sand dune habitat, and Mojave fringe-toed lizard cannot reasonably be characterized without further data and use of a sand transport model.		
Cultural Resources		
Potential to substantively degrade, directly or indirectly, prehistoric or historical archaeological resources *on* the facility site, resources recommended or assumed to be historically significant *(see cultural resources note)*	PSM	Similar to PSEGS (PSM)

Alternatives Table 4
Summary Comparison of Impacts of the Proposed PSEGS to the Solar Photovoltaic Alternative with Single-Axis Tracking Technology

Environmental Effect	Proposed PSEGS	Solar PV Alternative
Potential to substantively degrade, directly or indirectly, prehistoric or historical archaeological resources *beyond* the facility site, resources recommended or assumed to be historically significant	SU	Much less than PSEGS (SM)
Potential for cumulatively considerable degradation of prehistoric or historical archaeological resources *beyond* the facility site, resources recommended or assumed to be historically significant	SU	Much less than PSEGS (SM)
Potential impacts on significant built-environment cultural resources *on* the site	LS	Similar to PSEGS (LS)
Potential impacts on a significant built-environment cultural resource (Desert Center) *beyond* the site	SU	Much less than PSEGS (SM)
Potential to substantively degrade, directly or indirectly, ethnographic resources *on* the facility site, resources recommended or assumed to be historically significant	PSM	Similar to PSEGS (PSM)
Potential for cumulatively considerable degradation of ethnographic resources *on* the facility site, resources recommended or assumed to be historically significant	LS	Similar to PSEGS (LS)
Potential to substantively degrade, directly or indirectly, ethnographic resources *beyond* the facility site, resources recommended or assumed to be historically significant	SU	Much less than PSEGS (SM)
Potential for cumulatively considerable degradation of ethnographic resources *beyond* the facility site, resources recommended or assumed to be historically significant	SU	Much less than PSEGS (SM)
Cultural resources note: "Site" means the facility site proper and does not include linear or ancillary infrastructure away from the facility site.		
Fire Protection		
Construction-Related Impacts		
Impacts on the Riverside County Fire Department	SM	Much less than PSEGS (SM)
Project Operations Impacts		
Become familiar with and plan for emergency responses	SM	Much less than PSEGS (SM)
Conduct plan reviews, inspections, and permitting	SM	Much less than PSEGS (SM)
Fire response	SM	Much less than PSEGS (SM)
Hazardous materials spill response	SM	Much less than PSEGS (SM)
Rescue	SM	Somewhat less than PSEGS (SM)
Emergency medical services	SM	Much less than PSEGS (SM)
Geology and Paleontology		
Potential impacts from strong seismic shaking	SM	Much less than PSEGS (SM)
Potential impacts from soil failure caused by liquefaction, hydrocollapse, and/or dynamic compaction	SM	Much less than PSEGS (SM)

Alternatives Table 4
Summary Comparison of Impacts of the Proposed PSEGS to the Solar Photovoltaic Alternative with Single-Axis Tracking Technology

Environmental Effect	Proposed PSEGS	Solar PV Alternative
Potential impacts on paleontological resources	SM	Somewhat less than PSEGS (SM)
Potential impacts on geological or mineralogical resources	—	—
Hazardous Materials Management		
Construction-Related Impacts		
Potential for spills or other releases of hazardous materials to occur on-site	SM	Same as PSEGS (SM)
Potential for spills or other releases of hazardous materials to occur off-site	LS	Same as PSEGS (LS)
Project Operations Impacts		
Potential for spills or other releases of hazardous materials to occur on-site	SM	Much less than PSEGS (SM)
Potential for spills or other releases of hazardous materials to occur off-site	LS	Much less than PSEGS (LS)
Land Use		
Compatibility with land use plan, policy, or regulation	SM	Similar to PSEGS (SM)
Public Health		
Potential for project construction to cause air toxics-related or other impacts that could affect public health	LS	Similar to PSEGS (LS)
Potential for project operations to cause air toxics-related or other impacts that could affect public health	PSM	Less than PSEGS (LS)
Socioeconomics		
Environmental justice population within 6-mile buffer.	—	—
Induce substantial population growth in an area, either directly or indirectly.	LS	Similar to PSEGS (LS)
Displace substantial numbers of people and/or existing housing, necessitating the construction of replacement housing elsewhere.	LS	Similar to PSEGS (LS)
Adversely impact acceptable levels of service for police protection, schools, and parks and recreation.	LS	Similar to PSEGS (LS)
Increased property taxes, construction and operation employment income, and increased state and local taxes and fees.	B	Similar to PSEGS (B)
Soil and Water Resources		
Soil erosion by wind and water during project construction	SM	Somewhat less than PSEGS (SM)
Soil erosion by wind and water during project operations	PSM	Less than PSEGS (PSM)
Water quality impacts from contaminated storm water runoff	SM	Somewhat greater than PSEGS (SM)
Water quality impacts from storm damage	PSM	Somewhat greater than PSEGS (PSM)
Water quality impacts from power plant operations	SM	Much less than PSEGS (SM)
Water quality impacts from sanitary waste	SM	Similar to PSEGS (SM)
Potential impacts from on-site and off-site flooding	PSM	Similar to PSEGS (PSM)

Alternatives Table 4
Summary Comparison of Impacts of the Proposed PSEGS to the Solar Photovoltaic Alternative with Single-Axis Tracking Technology

Environmental Effect	Proposed PSEGS	Solar PV Alternative
Potential to impede or redirect 100-year flood flows, as shown on Federal Emergency Management Agency maps	—	—
Potential impacts on local wells	PSM	Somewhat less than PSEGS (PSM)
Potential impacts on groundwater basin balance	PSM	Somewhat less than PSEGS (PSM)
Traffic and Transportation		
Potential damage to roads	PSM	Less than PSEGS (PSM)
Level of service on roads and highways – construction	PSM	Less than PSEGS (PSM)
Level of service on roads and highways – operation/post-construction	LS	Similar to PSEGS (LS)
Solar collector glint and glare impacts on motorists and pilots	PSM	Much less than PSEGS (PSM)
Solar receiver glare impacts that could be hazardous to motorists and pilots	PSM	—
Visual Resources		
Construction-Related Impacts		
Potential for adverse impacts on scenic vistas	SM	Less than PSEGS (SM)
Potential to substantially damage scenic resources within a state scenic highway	LS	Similar to PSEGS (LS)
Potential to substantially degrade the existing visual character or quality of the site and its surroundings	SM	Similar to PSEGS (SM)
Potential to create a new source of substantial light or glare which would adversely affect day or nighttime views in the area	SM	Similar to PSEGS (SM)
Project Operations Impacts		
Potential for adverse impacts on scenic vistas	SU	Less than PSEGS (SU)
Potential to substantially damage scenic resources within a state scenic highway	LS	Similar to PSEGS (LS)
Potential to substantially degrade the existing visual character or quality of the site and its surroundings	SU	Less than PSEGS (SU)
Potential to create a new source of substantial light or glare which would adversely affect day or nighttime views in the area *(individual effects listed below)*		
Glint or glare effects from project structures other than the reflective surfaces of solar collectors (i.e., heliostats, parabolic troughs, PV panels)	SM	Much less than PSEGS (PSM)
Glint or glare effects from the solar collectors	SM	Much less than PSEGS (PSM)
Glint or glare effects from high-profile solar receiver steam generators	SU	—
Light or glare from nighttime lighting effects, including Federal Aviation Administration safety lighting	SM	Less than PSEGS (SM)
Waste Management		
Potential for unexploded ordnance to be present at the project site	PSM	Similar to PSEGS

Alternatives Table 4
Summary Comparison of Impacts of the Proposed PSEGS to the Solar Photovoltaic Alternative with Single-Axis Tracking Technology

Environmental Effect	Proposed PSEGS	Solar PV Alternative
		(PSM)
Potential for impacts on human health and the environment relating to past or present soil or water contamination	LS	Similar to PSEGS (LS)
Potential for impacts on human health and the environment relating to potential waste discharges	LS	Similar to PSEGS (LS)
Potential for disposal or diversion of project materials to cause impacts on existing waste disposal or diversion facilities	LS	Similar to PSEGS (LS)

Air Quality

The number of permitted fuel-consuming and air pollutant emitting sources would be significantly fewer under the Solar PV Alternative. Construction-related emissions and impacts would be **similar to PSEGS** for this alternative. Operational impacts relating to criteria pollutant emissions for a utility-scale PV project would include normal maintenance truck activity, possibly including periodic fire water pump engine testing, and use of water trucks coinciding with the infrequent work to wash the PV modules. Use of fossil fuel-fired supplemental boiler operation is not required under this alternative. Impacts on air quality from operation of the Solar PV Alternative would be **less than PSEGS**. The Solar PV Alternative would not require the auxiliary equipment (e.g., auxiliary boilers for freeze protection and fast startup) necessary to operate a solar thermal power plant; therefore, this alternative would generate GHG emissions that would be somewhat less than PSEGS. This alternative would cause an overall, system wide, cumulative reduction in GHG emissions from power plants that would be **somewhat greater than PSEGS**.

The Solar PV Alternative would not worsen current conditions or make a cumulatively considerable contribution to any significant cumulative impact associated with air quality.

Biological Resources

Solar PV technology would employ single-axis tracking PV technology at the proposed PSEGS site. It is assumed that the Solar PV Alternative would use a low-impact design that would minimize on-site grading and possibly entail management of native vegetation under the solar panels by mowing. It is possible that no grading would be necessary under most of the solar panels for the Solar PV Alternative, which is similar to the project owner's proposed vegetation management in the heliostat field for the PSEGS. Assuming the same project site boundary under this alternative, impacts on special-status plant species and waters of the state would be **similar to PSEGS**.

The PV Alternative would remove habitat occupied by desert tortoise and other special-status terrestrial wildlife species; this alternative would cause other direct and indirect impacts such as weed proliferation and increased dust. These impacts would be **similar to PSEGS**.

Impacts on avian species would occur through conversion of the project site from native habitat to a solar farm and potential collisions with project features such as PV panels and transmission lines. This technology does not require central collector towers (e.g., an SPT at the center of a heliostat array) or concentrate solar energy over a heliostat field; therefore, **no impacts** on avian species would occur from exposure to solar flux.

Little research-based data is available to determine the extent of collision impacts on avian species from either the PV or solar power tower technologies. Similar to concentrating solar power technology, the PV Alternative would have the potential to cause a *mirage* effect from the appearance of the sky reflected off the solar panels when viewed from a distance. Installation of heliostats could also cause an increase in polarized light pollution (PLP), which typically occurs from light reflecting off of dark colored anthropogenic structures, and has been demonstrated to be generated from even low-reflectance PV panels (Horváth et al. 2009). It is unknown to what extent this phenomenon is occurring or will occur from the surfaces of mirrored heliostats at newly developed SPT project sites (e.g., the ISEGS site). PLP caused by anthropogenic structures can alter the ability of wildlife to seek out suitable habitat and elude or detect the presence of predators (Horváth et al. 2010). It has also been documented that PLP can affect some organisms' ability to detect natural polarized light patterns in the sky, which can negatively affect navigation ability and ultimately affect dispersal and reproduction (Horváth et al. 2009). Polarizing surfaces are also known to disrupt insect behavior, causing some insects to react as though the surface is water, and depositing eggs on polarizing surfaces (Horváth et al. 2009). The extent to which heliostats could serve as an attractant to avian species is unknown.

Reports of collisions are becoming more common as large-scale PV and concentrating SPT facilities are developed in the desert. Solar PV panels absorb rather than reflect solar energy. The reflective characteristics of the smooth, dark surfaces of PV panels are much different compared to the mirrored surfaces of the SPT heliostats that reflect the sun's rays to the SRSGs. However, the glass surfaces of PV panels can and do reflect the sky. The reflective characteristics of PV panels likely vary depending on the position of the sun, viewing angle, tilt of the panels, and other variables (please see **Alternatives Figures 3a** and **Figure 3b** for representative photographs of PV arrays). PV solar arrays sometimes reflect the sky, including clouds, and can appear lighter in color. At other times and under different conditions, the PV arrays may appear dark like a still body of water. While it remains unclear how wildlife (primarily birds and bats, but also insects) perceive solar fields, and if the solar collectors are attractive under certain conditions, it is well documented that solar fields, including large PV array fields, can pose risks to birds or bats.

At the Desert Sunlight Solar Farm project site, a PV installation of a few thousand acres, birds have been documented to have collided with the panels or other project features (Pagel and Baird, pers. comms., 2013). The majority of the species impacted has been identified as migrant waterbirds that would not typically be found foraging in desert habitat, and whose presence would not have been expected to occur at the PV project site. A federally endangered species, the Yuma clapper rail (*Rallus longirostris yumanensis*), was among the recorded mortalities. Similarly, at the GSEP site, featuring

reflective parabolic trough technology, waterbirds rarely found in the desert have collided with the mirrored troughs, or been found on-site, unable to fly, with no obvious injury. Both the GSEP and Desert Sunlight Solar Farm are in construction in Riverside County, between the Colorado River to the east and the proposed PSEGS site to the west. All three of these projects may be expected to encounter the same general suites of resident and migrant avian species. Of the injuries and mortalities that have occurred, reported incidents include birds being found overheated and/or stressed with no clear indication of the causes. Of the reported injuries or mortalities, some have occurred in association with evaporation ponds and as a result of collisions with perimeter fencing and other project features.

The extent and severity of potential collision impacts on avian species under the Solar PV Alternative is unquantifiable; however, given that collisions have been noted for various solar thermal collectors (e.g., parabolic troughs and heliostats) as well as PV panels, staff considers the potential risks of collisions or inducement to land on project site structures is likely **similar to PSEGS**. Impacts on avian species stemming from habitat loss could be mitigated to below a level of significance. For the Solar PV Alternative, impacts relating to collisions and other sources of injury or mortality associated with the facility could be significant. Staff recommends implementation of mitigation measures described in the **BIOLOGICAL RESOURCES** section of this staff assessment; however, a level of uncertainty exists as to the severity of the impact and the possible affected species. Staff considers these impacts on avian species to be significant, particularly if state or federally listed threatened, endangered, or other special-status species were impacted. Impacts could remain cumulatively significant after implementation of all feasible mitigation measures.

PV solar power plants require less operational water use, and less groundwater pumping, compared to the proposed modified project. Therefore, potential impacts on groundwater dependent plants and wildlife species would be **somewhat less than PSEGS**.

The PV alternative would use numerous individual driven foundation elements to support the PV panels, similar to PSEGS, and would eliminate the deep or otherwise specialized foundations required for the SPTs of the proposed modified project; however, the power towers would be located in a portion of the solar field that is outside of the active sand transport corridor. Because no specific single-axis tracking PV system is identified for this alternative, the number and diameter of the supporting piers for the PV modules is unknown compared to those required for the proposed PSEGS. Unlike the PSEGS project, the PV alternative would require fewer and smaller structures overall (no power towers, turbines, and steam condenser) and foundations. Assuming the same project footprint, direct impacts on the sand transport corridor, sand dunes, and Mojave fringe-toed lizard would likely be **somewhat less than PSEGS**. Without having a specific PV tracker technology identified for the project site, and in the absence of the modeling effort that would be needed to draw impact conclusions, staff is unable to make a comparative determination of the indirect impacts on sand transport corridors or for impacts on sand dunes and Mojave fringe-toed lizard.

Cultural Resources

Construction and operation of the Solar PV Alternative would require roughly the same extent of ground disturbance as the proposed PSEGS. The extent of the visual intrusion on cultural resources *beyond* the site compared to the proposed modified project would be **much less than PSEGS**, while the extent of physical disturbance of resources *on* the facility site compared to the proposed modified project would be **similar to PSEGS**.

The overall scale of the Solar PV Alternative and its vertical profile would be substantially less than PSEGS, given this alternative's lack of extremely tall structures that would be analogous in any way to the proposed PSEGS solar power towers. Compared to the approximately 750-foot-tall power towers and 12-foot vertical profile of the heliostat arrays of the proposed modified project, the vertical profile of the PV module arrays could be approximately 8 feet tall at maximum tilt. The PV arrays would be substantially less visible from most portions of the broad, landscape-scale resources that are the primary subjects of staff's concern; and where the terrain would allow views of portions of the PV arrays, the level of the visual intrusion in the landscape would be **much less than PSEGS**. In addition to the dramatically reduced vertical scale of the Solar PV Alternative, the lower reflectivity of the glass surfaces of the PV panels would be less intrusive compared to the mirrored heliostats. The overall physical disturbance of the portions of the cultural resources on the facility site, although minor relative to the overall size of landscape-scale resources, would nonetheless be roughly comparable to the degree of resource disturbance that would occur from the proposed modified project. Staff characterizes the net effect of this alternative on historical resources, primarily due to its much reduced visual presence relative to the proposed modified project, as **much less than PSEGS**.

Fire Protection

Construction-Related Impacts

Compared to the proposed PSEGS, construction of the Solar PV Alternative would require approximately the same level of service from the RCFD, and impacts on the RCFD would be approximately the same as the proposed PSEGS. Of the six RCFD services listed above (see the subsection, "Fire Protection, for the No-Project Alternative), construction of the Solar PV Alternative would require a much lower level of effort to conduct plan reviews, inspections, and permitting.

As described above for the comparison of impacts on fire protection under the "No-Project Alternative," hazardous materials use during construction activities and the impact on the RCFD relating to hazmat spill response would remain about the same for all alternatives compared to the proposed modified project.

Because the Solar PV Alternative does not include construction of extremely tall structures analogous to the 750-foot-tall SPTs of the proposed PSEGS, construction of this alternative would not have the added construction safety concern and the potential need to conduct a high-angle technical rescue in the event of worker injury. Under the Solar PV Alternative, no work in a confined space would be required during construction

and little risk from fire would exist. Overall, construction-related direct and cumulative impacts on the RCFD under the Solar PV Alternative would be **much less than PSEGS**.

Project Operations Impacts

Solar PV technology, regardless of the type used, presents a far less need for the transportation, storage and use of hazardous materials than either solar parabolic trough or solar power tower technology and thus the need for hazardous materials spill response would be minimal. PV systems do not use steam generators because receiver units directly generate electricity and thus do not require the steam boilers, generators, steam condensers, and/or auxiliary heat rejection equipment associated with renewable solar thermal technologies. As a result, hazardous materials transportation, storage, and use would be minimal and workers exposure to spills would be **much less than PSEGS** for the Solar PV Alternative.

During operation of a PV facility, hazardous chemicals would be used and stored in relatively small amounts and represent limited risks of spills and need for response because of their small quantities, low volatility, and/or low toxicity. At the PSEGS site, several factors influence staff's conclusion that the risk of a release of hazardous materials would be extremely low:

1. Hazardous materials would very likely be delivered and stored in chemical "totes," which are designed to meet strict safety standards and thus have an excellent safety record of structural integrity and minimal spills.

2. Totes are self-contained units that do not involve the transfer of the hazardous material from a tanker truck to a large storage tank. They are delivered already containing the hazardous material.

3. The chance that more than one would fail at the same time is extremely remote.

4. The maximum volume of each tote is likely to be 400 gallons or less and each tote would be required to be placed within a secondary spill containment area to limit the spread of any spilled materials, thus limiting the size of the pool of material available for evaporation and dispersion.

5. Previous modeling at other power plants by staff of far greater amounts of various hazardous materials, including ammonia and sulfuric acid, spilling onto a road show very limited dispersion and the distance to a level of less than a significant airborne concentration is usually only a short distance. A spill into a containment area would have even a lesser dispersion distance.

However, solar PV panels present a unique safety hazard in that individual PV panels will continue to be energized and can generate electricity even when disconnected or covered unless the covering is composed of 100 percent light-blocking material. And, PV panels remain energized even when disconnected from the grid and during cloud cover. It is also estimated that at night, the light from facility light poles is powerful enough to re-energize a PV panel to a level that could present a shock hazard.

Therefore, even after disconnecting from the grid, PV panels are capable of discharging current to an object or a person. Standard regulations of the Occupational Safety and Health Administration requiring “Lockout/Tagout” of electrical systems are not sufficient to eliminate the threat posed by a PV panel or multiple panels to on-site workers, and consequently, impacts on rescue and EMS response. Emergency response personnel engaged in rescue or fire suppression are also at risk of coming into contact with electrified PV panels. This unique aspect of EMS and rescue response is not present with the other alternatives because once a circuit is cut (or locked-out) the current stops and workers are protected; this is the case for a project using parabolic trough technology or the SPT technology for the proposed PSEGS. For the Solar PV Alternative, the impact pertaining to the potential need for rescue services would be **somewhat less than PSEGS**.

Even with this added hazard to workers, staff concludes that the Solar PV Alternative would cause a lower impact on emergency services compared to the proposed PSEGS. Overall, impacts on emergency services during project operations for the Solar PV Alternative would be **much less than PSEGS**.

Geology and Paleontology

Primarily, the Solar PV Alternative would use numerous individual driven foundation elements to support the PV panels, similar to PSEGS, but would not require the deep or otherwise specialized foundations that would be required for the solar receiver towers of the proposed modified project. The elimination of deep foundations would decrease the potential for encountering fossil bearing strata; however, like the proposed modified project, impacts from the potential destruction of undiscovered paleontological resources would be a significant impact of this alternative.

Similar to the PSEGS project, solar PV panel foundation elements would be driven into the ground, potentially encountering and destroying buried fossils. Because no specific single-axis tracking PV system is identified for this alternative, the number and diameter of the supporting piers for the PV modules is unknown compared to those required for the proposed PSEGS.

Unlike the PSEGS project, the PV Alternative would require fewer and smaller structures (no towers, turbines, and steam condenser) and foundations required for support of these fewer and smaller structures would be similarly reduced. Therefore, construction of the Solar PV Alternative (driven panel post foundations coupled with decreased size and number of structure foundations) would cause impacts on paleontological resources that would be **somewhat less than PSEGS**.

The net effect to the Solar PV Alternative from geological hazards would be less than the PSEGS project. Due to elimination of tall tower structures, the project as a whole would have a decrease in seismic susceptibility. Potential impacts from strong seismic shaking would be **much less than PSEGS**. Potential impacts from soil failure mechanisms would also be **much less than PSEGS**.

Hazardous Materials Management

Construction-Related Impacts

As discussed above, the construction phases of any large-scale desert solar project would require the use of various hazardous materials posing similar on-site risks of spillage or other releases. For the Solar PV Alternative, construction-related hazardous materials impacts would be the **same as PSEGS**.

Project Operations Impacts

As discussed above under “Fire Protection,” solar PV technology presents a far less need for the transportation, storage, and use of hazardous materials than either solar parabolic trough or SPT technology. As a result, hazardous materials transportation, storage, and use would be **much less than PSEGS**.

During operation of a PV facility, hazardous chemicals such as cleaning agents, water treatment chemicals, welding gasses, oils, activated carbon, and other various chemicals would be used and stored in relatively small amounts and represent limited off-site hazards because of their small quantities, low volatility, and/or low toxicity. At the PSEGS site, several factors influence staff’s conclusion that the risk of off-site impacts from a release of hazardous materials would be extremely low:

1. Hazardous materials would very likely be delivered and stored in chemical “totes,” which are designed to meet strict safety standards and thus have an excellent safety record of structural integrity and minimal spills.

2. Totes are self-contained units that do not involve the transfer of the hazardous material from a tanker truck to a large storage tank. They are delivered already containing the hazardous material.

3. The chance that more than one would fail at the same time is extremely remote.

4. The maximum volume of each tote is likely to be 400 gallons or less, and each tote would be required to be placed within a secondary spill containment area to limit the spread of any spilled materials, thus limiting the size of the pool of material available for evaporation and dispersion.

5. Previous modeling at other power plants by staff of far greater amounts of various hazardous materials, including ammonia and sulfuric acid, spilling onto a road show very limited dispersion and the distance to a level of less than a significant airborne concentration is usually only a short distance. A spill into a containment area would have even a lesser dispersion distance.

6. The nearest off-site public receptors are 25 feet and 3,500 feet northwest of the PSEGS fence line and thus no matter where the small quantities of hazardous materials were placed on the site under this alternative, no off-site consequences would be expected if a spill was to occur.

Therefore, staff concludes that hazardous materials use for the Solar PV Alternative would pose a less than significant risk to the public and would be **much less than PSEGS**.

Land Use

The Solar PV Alternative would involve constructing and operating a utility-scale, single-axis tracking PV project at the proposed PSEGS site. The proposed PSEGS would be located entirely on public land administered by BLM and within the federal CDCA Plan area. The project area is in the "Multiple-Use Class M" land use category, which allows construction and operation of electrical generation plants. As discussed above, the PSEGS site is encompassed by BLM's Riverside East SEZ. These designations also apply to the Solar PV Alternative. Like the proposed modified project, this alternative includes no private land, and no part of the site would be subject to Riverside County's jurisdictional authority.

In February 2013, the project owner submitted a revised Plan of Development to BLM for the PSEGS. Should BLM approve issuance of a ROW grant for the PSEGS, two CDCA Plan amendments would be required—one would allow the solar generation facility and the other would allow the generation tie-line outside of the designated corridor (BLM 2013a). Staff recommends Condition of Certification **LAND-1** for the proposed PSEGS, which requires the project owner to provide documentation of the approved BLM ROW grant and a project-specific amendment to the CDCA Plan prior to the start of construction. **LAND-1** would also apply to the Solar PV Alternative. Like the proposed PSEGS, construction and operation of this alternative would require compliance with applicable federal land use LORS. Land use impacts of the Solar PV Alternative would be **similar to PSEGS**.

Public Health

Construction-Related Impacts

Construction-related combustion emissions and impacts would be similar to the proposed PSEGS for the Solar PV Alternative. Public health risks include diesel exhaust from diesel-fueled engines (such as trucks, graders, cranes, welding machines, electric generators, air compressors, and water pumps). According to staff's analysis in the **PUBLIC HEALTH** section of this staff assessment, the calculated cancer risk and non-cancer Hazard Index from diesel particulate matter (DPM) are below the significance levels. Potential risks to public health during earth-moving construction activities would also be associated with exposure to Valley Fever in contaminated soil and fugitive dust disturbed during site preparation. As for the concerns of Valley Fever affecting the general population, staff considers the mitigation measures recommended in the **AIR QUALITY** section of this staff assessment adequate for the purposes of preventing all fugitive dust plumes from leaving the project boundary. As long as the dust plumes are kept within the project boundary, no significant risk would remain for Valley Fever to adversely affect the general population and public health. Therefore, no significant construction-related impacts on public health would occur, and no mitigation measures would be required. Much like the extent of site disturbance required for installation of the

heliostats for the proposed PSEGS, construction of utility-scale single-axis tracking PV projects is being accomplished without extensive site grading. With the overall extent of site disturbance considered to be similar, public health impacts of the Solar PV Alternative would be **similar to PSEGS**.

Project Operations Impacts

The Solar PV Alternative would not cause minor combustion-related boiler emissions. Cooling towers and the equipment required for a traditional power plant would not be needed for the Solar PV Alternative. Infrequent washings of PV panels would be required. DPM emissions from the use of mobile sources (i.e., vehicle systems of mirror washing equipment and site support vehicles) for washing the PV panels would be less for the Solar PV Alternative compared to the proposed PSEGS. The heliostats that would be installed under the proposed modified project would require weekly washings with the potential for more frequent washings to be required. Based on staff's review of several sample utility-scale PV installations, washing of PV modules is required once or twice per year.

Some high-performance solar PV panel cells are known to contain small amounts of cadmium, selenium, and arsenic, and these substances could be emitted if any solar cells were broken during operation and maintenance activities. However, even with the possibility of PV panel cell breakage, staff does not consider any such emission hazards to be significant for public health and no mitigation measures would be required. Please refer to staff's "Waste Management" analysis (below) for more information on management and handling of PV panels. As described above, because this alternative would not cause emissions of toxic air contaminants from boiler combustion and cooling towers, staff considers the overall potential public health risks from the Solar PV Alternative to be **less than PSEGS**. The reduced frequency of washing the solar collectors (i.e., the PV panels compared to the heliostats of the proposed PSEGS) would reduce DPM emissions under this alternative.

Socioeconomics

For the Solar PV Alternative with Single-Axis Tracking Technology, the construction and operations workforce would likely be smaller and the phased construction schedule could be longer compared to the PSEGS. The construction schedule for a typical utility-scale PV project allows initial phases to be connected to the grid without the need for the entire project to be completed and operational. Also, the delivery of hundreds of thousands of PV panels for a utility-scale PV project could require multiple shipments of panels (Perez, pers. comm., 2013). Staff concludes in the **SOCIOECONOMICS** section of this staff assessment that construction and operation of the proposed PSEGS would not cause significant adverse direct or indirect socioeconomic impacts on public services. Even with the phased construction schedule that could increase the overall construction schedule by several months, the socioeconomic impacts of this alternative would be **similar to PSEGS**.

Construction and operation of this alternative would generate employment income and associated state and local sales taxes that would be similar to those for the proposed PSEGS. Like PSEGS, this alternative is on federal land; therefore, Section 17620 of the Education Code (school impact fees) would not apply and no property taxes would be paid. The economic benefits would **be similar to PSEGS**.

Soil and Water Resources

Solar PV systems do not use steam generators because receiver units (i.e., PV solar panels) directly generate electricity and thus do not require the steam boilers, generators, steam condensers, and/or auxiliary heat rejection equipment generally associated with a traditional power plant. As a result, characteristic impacts on water quality caused by the presence of power plant facilities would be **much less than PSEGS** for the Solar PV Alternative, namely the disposal of industrial wastewater and the risk of storm water exposure to industrial chemicals. Domestic sanitary waste would still need a septic system for proper disposal, and impacts relating to sanitary waste would be **similar to PSEGS**.

As discussed below under, “Waste Management,” depending on the type of PV module, use of PV panels could cause the release of hazardous CdTe waste if panels were damaged. The inadvertent discharge of hazardous waste during a large storm event would increase the potential for water quality impacts from storm damage to **somewhat greater than PSEGS**.

Much like the flow-through installation of heliostats, installation of the PV panels would not necessarily require significant site grading. Assuming that a single-axis tracking solar PV project with an electrical capacity similar to the proposed PSEGS could be constructed at the project site with no change to the site boundary, the potential for on-site/off-site flooding for the Solar PV Alternative would be **similar to PSEGS**. Impacts from 100-year flood flows (as shown on the FEMA maps) do not apply because the published maps show that the 100-year flood plain is not present at or near the proposed site.

Compared to the proposed PSEGS, the Solar PV Alternative would not require a temporary concrete batch plant for a solar tower or large foundations, or a temporary assembly building to construct heliostats. This alternative would not require the same level of construction activities needed to build traditional power plant facilities, which would result in less excavation, heavy equipment, personnel, and truck traffic compared to PSEGS. The Solar PV Alternative and the proposed PSEGS would need similar areas for construction laydown and temporary parking. Based on these factors, the impacts from the Solar PV Alternative relating to soil erosion during construction would be **somewhat less than PSEGS**.

Because of the decrease in frequency for washing of PV panels compared to what would be required to maintain the heliostats of PSEGS, this alternative would create less dust overall from washer vehicles driving on the dirt roads. Impacts relating to soil erosion during project operations would be **less than PSEGS**.

The Solar PV Alternative would require less water for project operations, given the less frequent washings required for PV solar panels. Operational water use is estimated to decrease by roughly 90 percent under the Solar PV Alternative (approximately 15 acre-feet per year [afy] compared to 201 afy). For purposes of impact analysis, it is assumed that any withdrawals exceeding the average natural recharge and exceeding a significant percentage of the total amount of groundwater in storage would cause a significant impact. Because the Chuckwalla Valley Groundwater Basin (CVGB) is estimated to have a positive groundwater balance by approximately 2,600 afy, neither PSEGS nor the Solar PV Alternative would result in basin overdraft. And although the difference in water use of the Solar PV Alternative over 30 years would be about 5,580 af less than PSEGS, total water use by the proposed PSEGS or this alternative would be very small compared to the CVGB's storage capacity of 15,000,000 af. Because the PSEGS or this alternative would reduce the amount of total stored groundwater by less than a tenth of 1 percent, potential impacts of the Solar PV Alternative on the CVGB and local well owners would be **somewhat less than PSEGS**.

Traffic and Transportation

Potential Damage to Roads

Staff reviewed four recently approved single-axis tracking solar photovoltaic facilities and found that construction of these projects required an average of 1.40 peak construction workers per MW of power generated, which is less than the 4.62 peak construction workers per MW required for the proposed PSEGS (BLM 2012, Kern County Planning and Community Development Department 2012, Merced County Planning and Community Development Department 2012, San Luis Obispo County Planning and Building Department 2011). The proposed PSEGS also would require 90 daily one-way truck trips during peak construction, which is considered by staff to be a fairly high number. Because the proposed PSEGS would involve more peak workers and truck trips, damage to roads near the project site would be **less than PSEGS** under the Solar PV Alternative with Single-Axis Tracking Technology. Mitigation measures similar to those recommended for the proposed modified project would reduce potential damage impacts on roadways to less than significant.

Level of Service on Roads and Highways – Construction

As discussed above, the Solar PV Alternative would likely generate less construction traffic than the proposed PSEGS; therefore, impacts on LOS would be **less than PSEGS**. Like the proposed modified project, implementation of appropriate mitigation measures (e.g., a traffic control plan) would reduce this impact to less than significant.

Level of Service on Roads and Highways – Operation/Post-Construction

The number of operations employees for the Solar PV Alternative with power output similar to the proposed PSEGS would likely be lower than the number of PSEGS operations employees. The solar PV projects reviewed by staff would require an average of 0.03 operations workers per MW generated, while the proposed PSEGS would have higher staffing levels at approximately 0.2 operations workers per MW generated. However, for all projects, the minimal number of trips generated by operations employees would have a negligible impact on traffic LOS. Therefore, impacts would be **similar to PSEGS**. No mitigation measures would be required.

Solar Collector Glint and Glare Impacts on Motorists and Pilots

In contrast to the PSEGS's heliostats (mirrors), solar PV panels absorb rather than reflect solar energy. Therefore, nuisance glint and glare impacts on motorists and pilots would be **much less than PSEGS**. Mitigation measures such as screening the site perimeter could be required to reduce any potential glint or glare impacts on motorists to less than significant. It is unlikely that any potential glint or glare from the solar panels would have any effect on pilots.

Solar Receiver Glare Impacts That Could be Hazardous to Motorists and Pilots

This alternative would not include glare-producing SRSGs and power towers, and as discussed earlier, PV panels absorb the vast majority of sunlight and do not have the same reflective characteristics as the mirrored heliostats. Also, the solar panels do not reflect any solar energy to heat a fluid circulating in a receiver. Therefore, the Solar PV Alternative would cause **no impact**.

Visual Resources

PV systems do not use steam generators because receiver units directly generate electricity and thus do not require the solar towers topped by solar receivers, steam boilers, generators, or steam condensers associated with the proposed PSEGS. This alternative would include solar arrays of PV modules (solar panels) at the PSEGS site with no change to the site boundary. The 230-kV transmission line from the project site to the Red Bluff Substation would use the same linear corridor as the proposed PSEGS.

Potential for Adverse Impacts on Scenic Vistas

Construction-Related Impacts: Construction of the PV Alternative would cause temporary visual impacts due to the presence of equipment, materials, and a workforce at the project site and along the transmission line route, an increase in visible traffic along I-10 and access roads, and large dust clouds generated by grading activities. The area of disturbance and construction period of this alternative would be generally similar to the proposed PSEGS project. As described above, the Solar PV Alternative would use numerous individual driven foundation elements to support the PV panels, similar to PSEGS, but would not require the deep or otherwise specialized foundations that would be required for the proposed modified project. Construction of power blocks and other large facilities under the proposed PSEGS would not be necessary under the PV

Alternative. The construction-related impacts of this alternative on scenic vistas would thus be **less than PSEGS**.

Project Operations Impacts: No designated scenic vistas were identified in the PSEGS study area, but panoramic and highly scenic vistas from the Palen McCoy Wilderness and Chuckwalla Mountains Wilderness would be affected by this alternative. The PV Alternative would not have two solar receivers with an extremely bright glare. Under this alternative, solar arrays of PV modules would be installed at the proposed PSEGS site that could appear similar to PSEGS in apparent extent and with similar industrial characteristics when viewed from the two Wilderness Areas. Blocks of single-axis PV tracker units have a lower vertical profile than solar-tower heliostats. For example, the SunPower T0 Tracker® units typically extend 5–6 feet above the ground and increase to approximately 8 feet at maximum tilt. The tops of the proposed PSEGS heliostat array fields would be approximately 12 feet tall. Although the overall site footprint would be comparable to the PSEGS, the vertical profile would be much lower and the intensity of the visual effect would likely be reduced compared to the proposed PSEGS. The potential for this alternative to substantially degrade the existing visual character or quality of the site and its surroundings would be **less than PSEGS**. However, like the proposed PSEGS, this impact would remain significant and unavoidable under the Solar PV Alternative.

The visual characteristics of the affected project area would differ compared to the proposed PSEGS. Under the proposed PSEGS, the mirror field would exhibit diffuse and direct reflections (*lake-surface* effects). The PV units would also exhibit sky reflection, but would be much less bright, presenting a darker-colored appearance much of the time. In addition, PV projects would not require large-scale power block facilities like those required for solar thermal technologies. Because of the overall lower height of the array fields, lower reflectivity of the solar collectors, and lack of power blocks, the Solar PV Alternative would be less visible from viewpoints at distances of at least a few miles compared to the previously approved PSPP. Finally, the PV Alternative would not include solar towers and SRSGs. Consequently, the impact on scenic vistas would be **much less than PSEGS**. This alternative would be visible from both Wilderness Areas and the introduction of an expansive area with industrial characteristics and strong color and texture contrast would likely result in substantial adverse effects on these elevated vistas. The impact on scenic vistas would remain significant and unavoidable.

Potential to Substantially Damage Scenic Resources within a State Scenic Highway

The PSEGS site is located adjacent to the north side of I-10, which is not listed as an eligible State Scenic Highway, and no notable scenic features or historic structures are located within the site. Therefore, construction of the PV Alternative would not substantially damage scenic resources within a state scenic highway. This impact would be **similar to PSEGS**. Project operations impacts of the PV Alternative on scenic resources within a state scenic highway would be **similar to PSEGS**.

Potential to Substantially Degrade the Existing Visual Character or Quality of the Site and its Surroundings

Construction-Related Impacts: As discussed above, the area of disturbance and construction period of the PV Alternative would generally be similar to the proposed PSEGS project. Both PV tracker arrays and solar tower heliostats would be installed using numerous individual driven foundations. Construction impacts of this alternative on visual quality would be **similar to PSEGS**.

Project Operations Impacts: The PV Alternative would involve installation of an expanse of structures with industrial characteristics into the views from I-10, Corn Springs Road, and nearby Wilderness Areas. However, because of this alternative's lower profile and lack of tall or highly-reflective features, the PV Alternative would have a less intense visual effect compared to the proposed PSEGS, and would have a much smaller overall area of visual effect. It is likely that visual effects on SR 177, Desert Center, and Joshua Tree National Park would be negligible due to distance (approximately 10 miles or more from the project site). The impact of the PV Alternative on visual quality would thus be **less than PSEGS**. However, this alternative would result in a substantial degradation of the existing visual character or quality of the site and its surroundings as viewed from elevated viewpoints within nearby Wilderness Areas.

Potential to Create a New Source of Substantial Light or Glare Which Would Adversely Affect Day or Nighttime Views in the Area

Construction-Related Impacts: Some construction activity could take place at night during construction of the Solar PV Alternative, with lighting impacts that would be **similar to PSEGS**.

Project Operations Impacts: Non-mirror surfaces of the solar modules of the PV Alternative have the potential to introduce reflected glare into the visual environment. However, the PV Alternative would not require power blocks and the large, prominent structures of traditional power plant facilities. This impact would thus be **much less than PSEGS**. Like the proposed modified project, with the effective implementation of Condition of Certification **VIS-1** from the PSPP 2010 Commission Decision, the PV Alternative would not cause excessive glare from surfaces of structures other than the PV modules (e.g., inverters in the array blocks, O&M facilities, perimeter fencing, etc.).

Glint effects, that is, inadvertent, very bright reflections of the sun's image off the solar panels under certain conditions, could present a disruptive visual distraction for motorists and other viewers under some circumstances. However, these reflections would be much less bright and intrusive than similar glint effects from mirrored surfaces of the PSEGS heliostats due to the much lower reflectivity of PV panel surfaces compared to mirrors. This glint impact would be **much less than PSEGS**.

Compared to the proposed PSEGS, the Solar PV Alternative would not include anything analogous to the solar towers with solar receivers, and would not generate strong SRSG glare that would be similar in any way to the proposed PSEGS. The impact of the PV Alternative relating to glare from solar receivers would not occur; therefore, **no impact** would occur compared to PSEGS.

The PV Alternative could generate nighttime light pollution from its operational lighting, although with far fewer large or high-profile power plant structures, this impact would likely be **less than PSEGS**. As with the proposed modified project, the effective implementation of Condition of Certification **VIS-4** (VIS-3 from the 2010 Commission Decision on the PSPP) would reduce the PV Alternative's off-site, project operations lighting impacts to less than significant.

The PV Alternative would not have solar towers that would require FAA safety lighting, and **no impact** would occur.

Waste Management

Construction and operation of the Solar PV Alternative at the PSEGS site could have impacts **similar to PSEGS**. PV modules can be made of silicon or CdTe. Broken or damaged silicon PV modules are not considered hazardous, and would be similar to the heliostat materials. Broken or damaged CdTe PV modules would likely be transported to the manufacturer for recycling as universal waste and not be considered hazardous waste requiring landfill disposal.

Potential impacts relating to soil and water contamination and the potential presence of UXO at the site would be **similar to PSEGS**. A UXO Identification, Training, and Reporting Plan would still be required, which would include site worker training and procedures for UXO investigation, removal, and disposal.

REDUCED ACREAGE ALTERNATIVE WITH SOLAR POWER TOWER TECHNOLOGY

Overview

The Reduced Acreage Alternative with SPT Technology would involve reducing the total project acreage of the proposed modified project and retaining the solar tower unit and heliostat array from PSEGS Unit 1 (the western solar field). **Alternatives Figures 5a** and **5b** show staff's concept for the Reduced Acreage Alternative. The technology for the Reduced Acreage Alternative would be the same as described for the proposed PSEGS. This alternative includes approximately 70 acres from PSEGS Unit 2 (the eastern solar field). The additional acreage would allow a small expansion of the Unit 1 solar field while avoiding an extensive area of desert dry wash woodland habitat in the PSEGS eastern solar field (**Alternatives Figure 5a**). This alternative would avoid a portion of the sand transport corridor that extends into the northeast portion of the proposed PSEGS solar fields (**Alternatives Figure 5b**).