

COUNTY OF RIVERSIDE AIRPORT LAND USE COMMISSION

STAFF REPORT

AGENDA ITEM: 3.1

HEARING DATE: February 11, 2021

CASE NUMBER: ZAP1092PS20 – AM Wind Repower, LLC (Representative: Brookfield Renewable Partners)

APPROVING JURISDICTION: County of Riverside

JURISDICTION CASE NO.: WCS00071R10 (WECS Permit), VAR200001 (Variance) [BLM Case No. CACA55718 Amendment to Existing Right-of-Way Grants]

MAJOR ISSUES: None

RECOMMENDATION: Staff recommends that the proposed WECS Permit and Variance, and Amendment to Existing Right-of-Way Grants be found CONSISTENT with the 2004 Riverside County Airport Land Use Compatibility Plan.

PROJECT DESCRIPTION: The applicant proposes a project within the jurisdiction of the County of Riverside, Alta Mesa Wind Project, to decommission and remove 159 existing commercial wind turbines (wind energy conversion systems, abbreviated as “WECS”) and install 7 new wind turbines with a maximum height of 499 feet above ground level on 548 acres (25 acres net development footprint) located northerly of Interstate 10, and westerly of State Route 62, and install one new 263 foot tall meteorological tower, as well as including associated equipment such as existing on-site substation, temporary construction yard, access roads, and existing 220kV transmission line. The applicant also proposes a variance to eliminate building setbacks along the western and norther property lines.

The applicant also proposes another project within the jurisdiction of the Bureau of Land Management, Mesa Wind Project, to decommission and remove 460 existing commercial wind turbines and install 8 new wind turbines with a maximum height of 499 feet above ground level on 1,285 acres (30 acres net development footprint), located northerly of Interstate 10, and westerly of State Route 62, and install one new 263 foot tall meteorological tower. The Mesa Wind Project is directly north and west of the proposed Alta Mesa Wind Project. The Bureau of Land Management has already approved this project under Case No. CACA55718 (Amendment to Existing Right-of-Way Grants).

Wind turbine heights are measured at top of blade in the “twelve o’clock position”.

PROJECT LOCATION: The project is located northerly of Interstate 10, and westerly of State Route 62. The project site is not located within an existing Airport Influence Area, as it lies approximately 10 miles northwesterly of the northwesterly terminus of the primary runway (Runway 13R-31L) at Palm Springs International Airport and 9 miles easterly of the easterly terminus of the

runway at Banning Municipal Airport, but the project comes before the Airport Land Use Commission because of its inclusion of structures exceeding 200 feet in height.

BACKGROUND: As stated in Section 1.5.3.c of the Countywide Policies of the Riverside County Airport Land Use Compatibility Plan, “any proposal for construction or alteration of a structure (including antennas) taller than 200 feet above ground level at the site” requires referral to the Airport Land Use Commission for a determination of consistency with the Commission’s Plan prior to approval by the local jurisdiction. Such facilities also require notification to the FAA pursuant to Code of Federal Regulations Title 14, Chapter 1, Part 77, Paragraph 77.9.

The Riverside County Airport Land Use Compatibility Plan (RCALUCP) Policy Document, adopted on October 14, 2004, does not articulate specific procedures or criteria to guide the Airport Land Use Commission in evaluating such facilities. As such, the determination by the FAA OES (through the Form 7460-1 process) is pivotal in providing a basis for the ALUC’s decision regarding such facilities.

On November 24, 2020, the FAA OES issued Determinations of No Hazard to Air Navigation letters for Aeronautical Study Nos. 2020-WTW-8064-OE and 2020-WTW-8065-OE, and 2020-WTW-8067-OE thru 2020-WTW-8071-OE, for the proposed 7 wind turbines for the Alta Mesa Wind Project (County Jurisdiction). The studies revealed that the proposed turbine structures does not exceed obstruction standards and would not be a hazard to air navigation provided that obstruction marking and lighting with paint and red lights is required in accordance with FAA Advisory Circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights – Chapters 4, 13 (Turbines) and 15. The FAA OES also issued a Determination of No Hazard to Air Navigation letter for Aeronautical Study Number 2020-WTW-8072-OE for the meteorological tower at the Alta Mesa Wind Project, and the study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided that obstruction marking and lighting with paint and red lights is required in accordance with FAA Advisory Circular 70/7460-1 M, Obstruction Marking and Lighting, paint/red lights – Chapters 3 (Marked), 4, 5 (Red), & 15.

Also, on November 24, 2020, the FAA OES issued Determinations of No Hazard to Air Navigation letters for Aeronautical Study Nos. 2020-WTW-8054-OE thru 2020-WTW-8061-OE, for the proposed 8 wind turbines for the Mesa Wind Project (Bureau Land Management jurisdiction). The studies revealed that the proposed turbine structures does not exceed obstruction standards and would not be a hazard to air navigation provided that obstruction marking and lighting with paint and red lights is required in accordance with FAA Advisory Circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights – Chapters 4, 13 (Turbines) and 15. The FAA OES also issued a Determination of No Hazard to Air Navigation letter for Aeronautical Study Number 2020-WTW-8063-OE for the meteorological tower at the Mesa Wind Project, and the study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided that obstruction marking and lighting with paint and red lights is required in accordance with FAA Advisory Circular 70/7460-1 M, Obstruction Marking and Lighting, paint/ red lights – Chapters 3 (Marked), 4, 5 (Red), & 15.

Variance: The applicant proposes to eliminate the setbacks along the western and northern lot lines as required by Zoning Ordinance Section 348.4931. The proposed variance will not have any impact to the Compatibility Plan criteria.

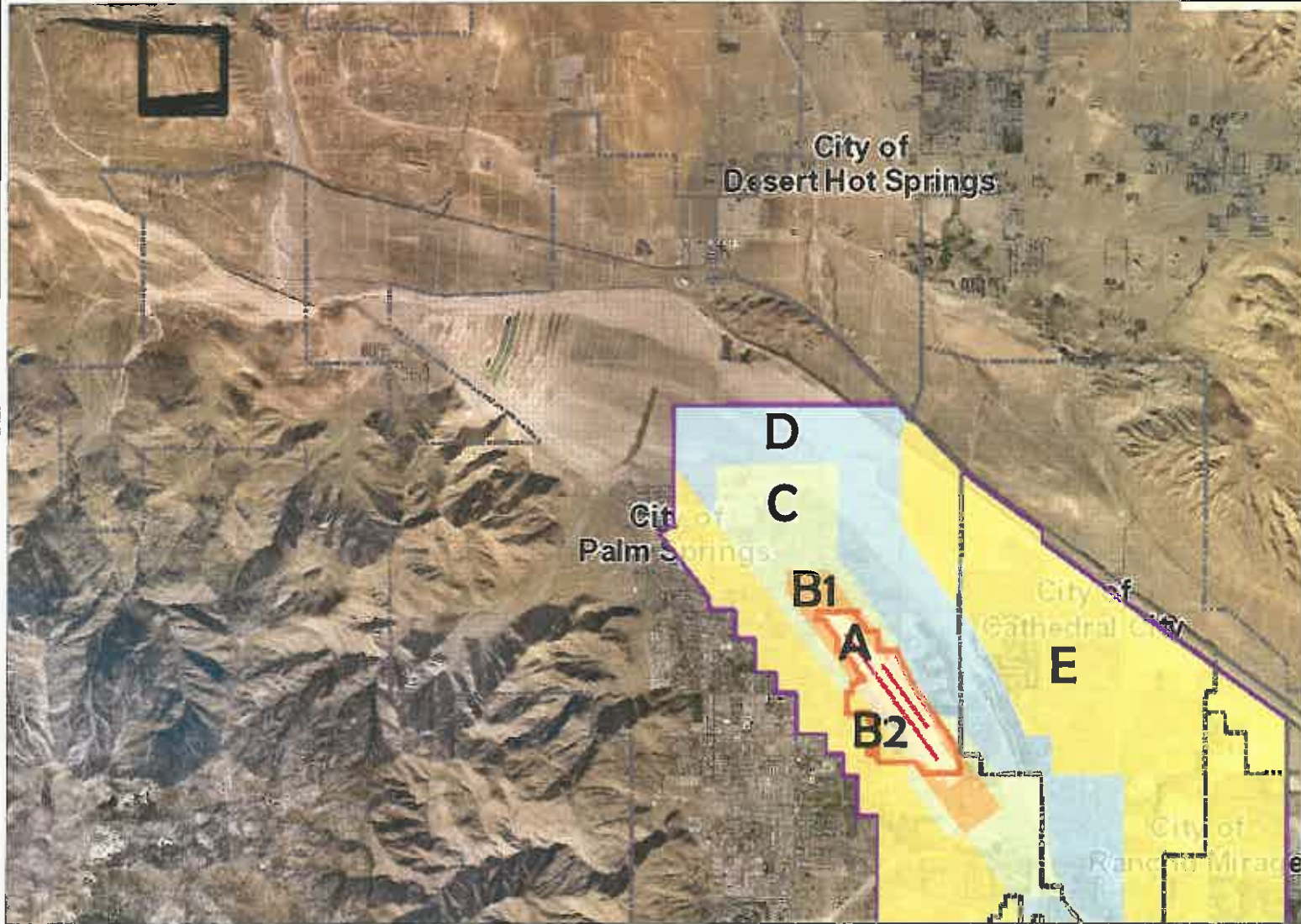
CONDITIONS:

1. The proposed wind turbines (“WECS”) shall not generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.
2. Rotor blades shall utilize a flat or matte (non-glossy) finish so as to minimize the reflection of sunlight towards an aircraft engaged in an initial straight climb during takeoff or towards an aircraft engaged in a straight final approach toward a landing at an airport.
3. The WECS and any accessory uses shall not generate smoke or water vapor and shall be designed so as not to attract large concentrations of birds.
4. The combined height of each WECS and its foundation shall not exceed 499 feet above ground level (AGL).
5. This project has been evaluated by Airport Land Use Commission (ALUC) and the Federal Aviation Administration (FAA) for seven (7) wind turbines and one (1) meteorological tower for the Alta Mesa Wind Project, and eight (8) wind turbines and one (1) meteorological tower for the Mesa Wind Project. Any increase in number, height, or change in location of the turbines or meteorological tower, or any proposal for new structures taller than 200 feet from ground level, will require subsequent submittal to, and review by, the ALUC and FAA.
6. The Federal Aviation Administration has conducted aeronautical studies of each proposed wind turbines (Aeronautical Study Nos. 2020-WTW-8064-OE and 2020-WTW-8065-OE, and 2020-WTW-8067-OE thru 2020-WTW-8071-OE for the Alta Mesa Wind Project, and 2020-WTW-8054-OE thru 2020-WTW-8061-OE for the Mesa Wind Project) and has specified that each of these structures shall be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights – Chapters 4, 13 (Turbines) and 15, unless superseded by subsequent FAA determination(s) in writing.
7. The Federal Aviation Administration has conducted aeronautical studies for the proposed meteorological towers (Aeronautical Study No. 2020-WTW-8072-OE for the Alta Mesa Wind Project, and 2020-WTW-8063-OE for the Mesa Wind Project) and has specified that the structure shall be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, paint/red lights - Chapters 3 (Marked), 4, 5 (Red) and 15, unless superseded by subsequent FAA determination(s) in writing.
8. In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture

that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of a least one light at each level. The use of NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

9. Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as normal operation is restored, notify the same number.
10. The maximum top point elevations specified in the Federal Aviation Administration Aeronautical Studies shall not be amended without further review by the Airport Land Use Commission and the Federal Aviation Administration; provided, however, that reduction in structure height or elevation shall not require further review by the Airport Land Use Commission.
11. Temporary construction equipment used during actual construction of the structures shall not exceed 499 feet in height and a maximum elevation (above mean sea level) not to exceed the elevations specified in the Federal Aviation Administration Aeronautical Studies (and 263 feet in height for the meteorological towers), unless separate notice is provided to the Federal Aviation Administration through the Form 7460-1 process.
12. Within five (5) days after construction reaches its greatest height, FAA Form 7460-2 (Part II), Notice of Actual Construction or Alteration, shall be completed by the project proponent or his/her designee and e-filed with the Federal Aviation Administration. (Go to <https://oeaaa.faa.gov> for instructions.) This requirement is also applicable in the event the project is abandoned or a decision is made not to construct the structure.
13. To the maximum extent possible, in compliance with FAA guidelines regarding lighting, mitigation measures shall be incorporated into the project that would minimize light pollution to the people on the ground.

Map My County Map



Legend

- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones**
- OTHER COMPATIBILITY ZONE
- A
- A-EXC1
- B1
- B1-APZ I
- B1-APZ I-EXC1
- B1-APZ II
- B1-APZ II-EXC1
- B1-EXC1
- B2
- B2-EXC1
- C
- C1
- C1-EXC1
- C1-EXC3
- C1-EXC4
- C1-HIGHT
- C2
- C2-EXC1
- C2-EXC2
- C2-EXC3
- C2-EXC5
- C2-EXC8



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Notes

Map My County Map



Legend

- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones**
- OTHER COMPATIBILITY ZONE
- A
- A-EXC1
- B1
- B1-APZ I
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- B1-APZ II
- B1-APZ II-EXC1
- B1-EXC1
- B2
- B2-EXC1
- C
- C1
- C1-EXC1
- C1-EXC3
- C1-EXC4
- C1-HIGHT
- C2
- C2-EXC1
- C2-EXC2
- C2-EXC3
- C2-EXC5
- C2-EXC6



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Notes

Map My County Map



Legend

- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones**
 - OTHER COMPATIBILITY ZONE
 - A
 - A-EXC1
 - B1
 - B1-APZ I
 - B1-APZ I-EXC1
 - B1-APZ II
 - B1-APZ II-EXC1
 - B1-EXC1
 - B2
 - B2-EXC1
 - C
 - C1
 - C1-EXC1
 - C1-EXC3
 - C1-EXC4
 - C1-HIGHT
 - C2
 - C2-EXC1
 - C2-EXC2
 - C2-EXC3
 - C2-EXC5
 - C2-EXC6



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Notes

Map My County Map



Legend

- Blueline Streams
- City Areas
- World Street Map

Notes



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3.0 Project Description

The project involves two existing wind energy sites (Mesa Wind site and Alta Mesa Wind site). The following identifies the project activities within each site, which are shown on Figures 1 (Vicinity Map) and 2 (Site Map) at the end of this document and provided electronically in the application package. The overall project (which includes both sites) was divided into two separate projects because they include two different jurisdictions: U.S. Bureau of Land Management (BLM) administered lands and Unincorporated Riverside County lands. Details of each project include:

- 8 ■ **Mesa Wind Project:** Within the Mesa Wind Project boundary shown in Figure 2 (Site Map), the project would first remove 460 existing turbines (none with lights) that have a maximum blade tip height of 165 feet. Once the old turbines are removed, the project would construct nine (9) new turbines (each with a maximum blade tip height of 499 feet). The locations of the proposed new turbines are shown on Figure 2. This entire project boundary is under the jurisdiction of BLM. As discussed below, the BLM has approved this portion of the project. **Turbine M-3 no longer a part**

- 7 ■ **Alta Mesa Wind Project:** Within the Alta Mesa Wind Project boundary shown in Figure 2 (Site Map), the project would first remove 159 existing (none with lights) that all range between 110-150 feet in height. Once the old turbines are removed, the project would construct eight (8) new turbines (each with a maximum blade tip height of 499 feet) and one new meteorological tower (263 feet tall). The locations of the proposed new turbines and meteorological tower are shown on Figure 2. This entire project boundary is under the jurisdiction of Riverside County. As discussed below, Riverside County is currently reviewing the project under CEQA. **Turbine AM-13 no longer a part**

3.1.1 Project Status

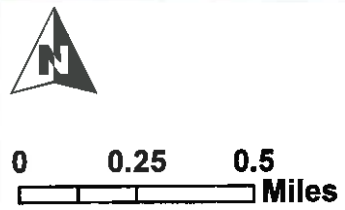
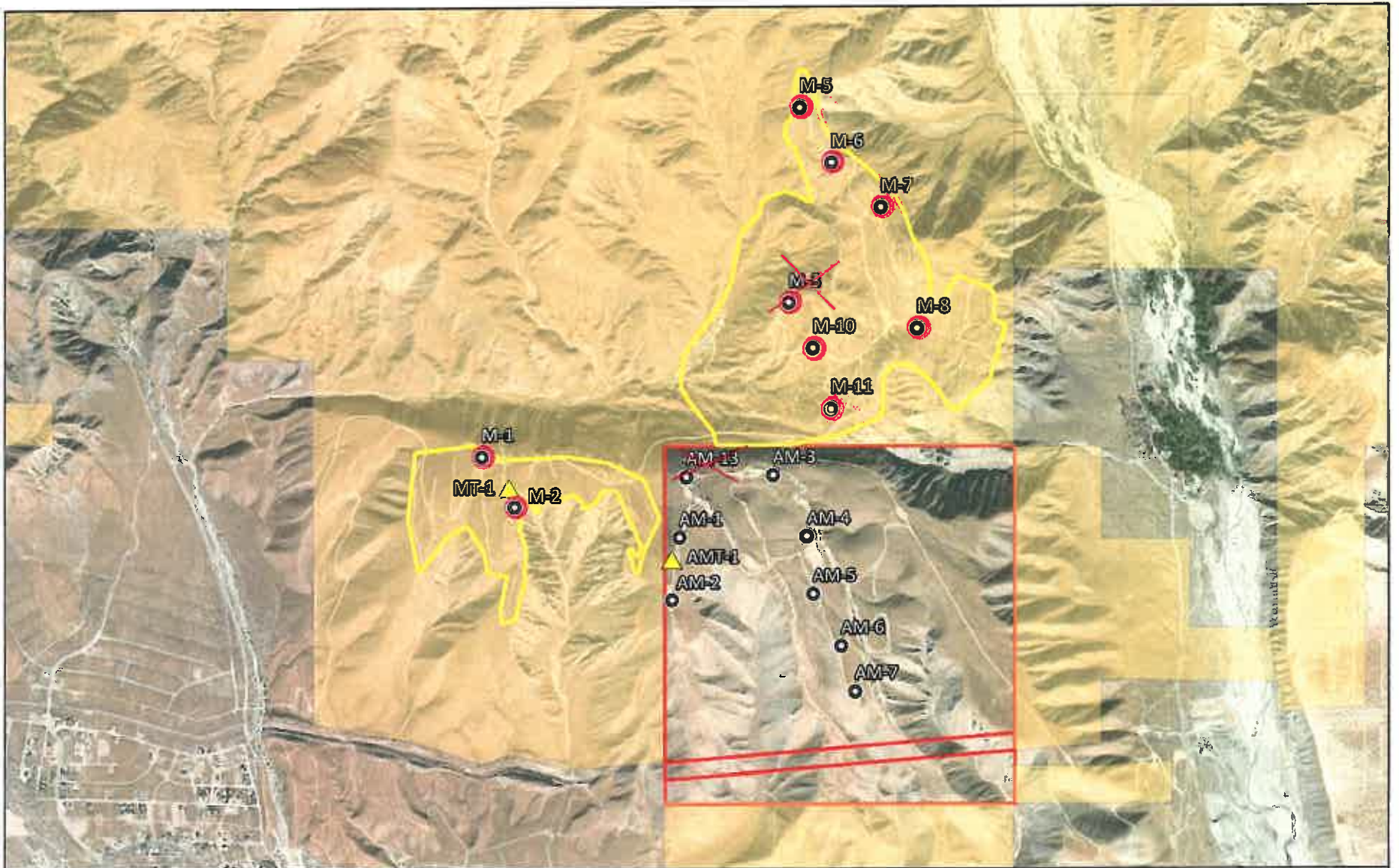
- **Mesa Wind Project:** This BLM has completed environmental review under NEPA and approved this portion of the project on September 30, 2020.
 - All BLM environmental review (NEPA) documents are available at the following weblink: <https://eplanning.blm.gov/eplanning-ui/project/1504648/510>.
 - The notice of BLM's decision approving this project can be viewed at the following weblink: <https://www.blm.gov/press-release/blm-approves-mesa-wind-repower-project-near-palm-springs>.

- **Alta Mesa Wind Project:** The WECS Application was filed with Riverside County on November 14, 2019 and the draft CEQA document is expected to be published in December 2020 or January 2021. No decision on the project has been made by Riverside County. The Riverside County Planning Department staff contact is provided in the ALUC application form.

4.0 FAA OE/AAA Review

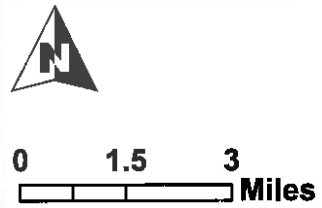
Each of the proposed project components (17 proposed new wind turbines and 2 MET towers) were submitted to the FAA OE/AAA for review. The FAA completed their review and provided recommendations on November 24, 2020. The FAA determined the project would not be a hazard to air navigation provided each turbine and MET tower were painted white with synchronized red flashing top lights.

The FAA determinations are provided electronically with this application package.



- Proposed Turbine (Under Review by Riverside County)
- Proposed Turbine (Approved by BLM)
- ▲ Permanent, non-guyed MET tower
- ▭ Mesa Wind Existing ROW
- ▭ Alta Mesa Parcel Boundary
- ▭ BLM Land

Figure 2
Mesa & Alta Mesa
Proposed Wind Turbine Generation
Site Map







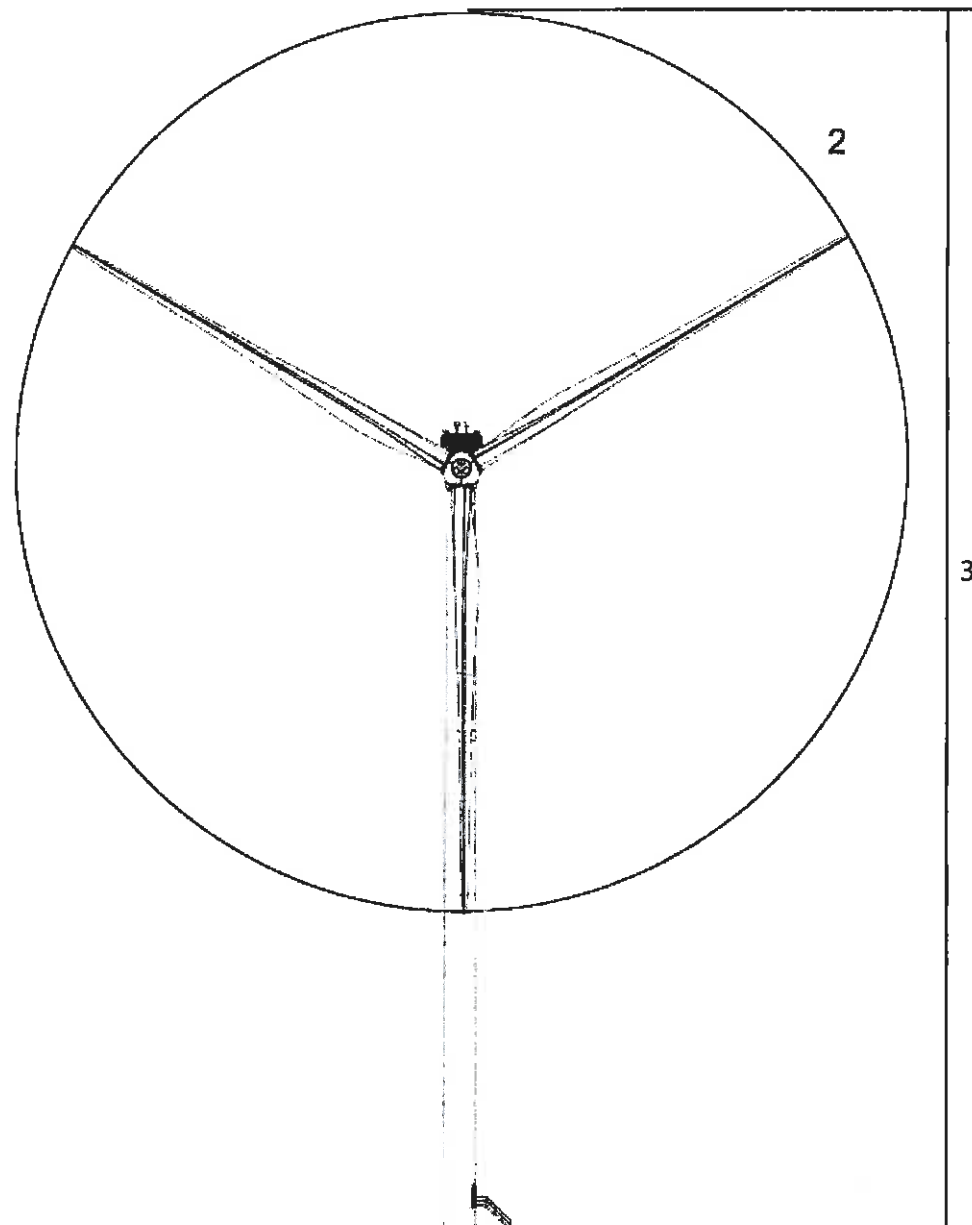
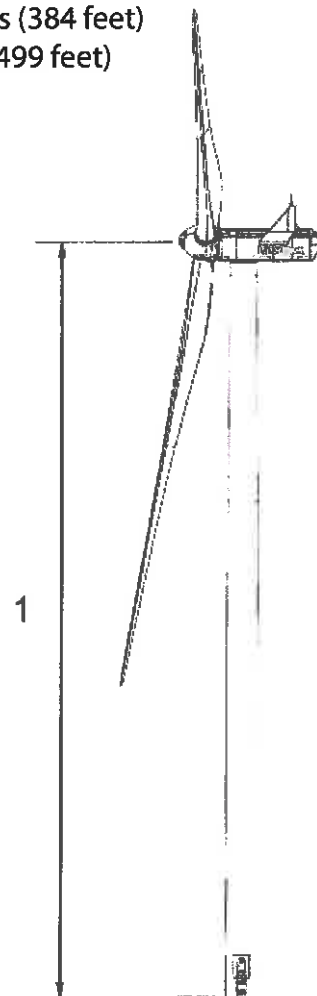
-  Airports
-  Proposed Turbine
-  Mesa Wind Existing ROW
-  Alta Mesa Parcel Boundary

Figure 1
Mesa & Alta Mesa
Proposed Wind Turbine Generation
Vicinity Map

Vestas[®]

V117-4.2 MW

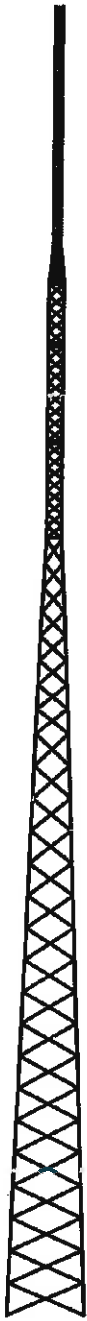
- 1. Hub Height: 91.5 meters (300 feet)
- 2. Rotor Diameter: 117 meters (384 feet)
- 3. Total Height - 152 meters (499 feet)



Proposed Wind Turbine Height

Alta Mesa and Mesa Wind Repower Wind Repower Project

270'
—
260'
—
240'
—
220'
—
200'
—
180'
—
160'
—
140'
—
120'
—
100'
—
80'
—
60'
—
40'
—
20'
—
0'
—



Self-Supporting Tower Section Data

Section Number	Bottom Elevation (ft)	Top Elevation (ft)	Model	Bottom Face Width (ft)	Top Face Width (ft)	Number of Panels	Leg Size (in)	Diagonal Size (in)	Girt Size (in)	Mid-Horizontal Size (in)	Redundant Horizontal Size (in)	Redundant Diagonal Size (in)
14	250	260	NFZ	1.5	1.5	7	SR 1.5	SR 5/8	SR 5/8	SR 3/8		
13	240	250	NFZ	1.5	1.5	14	SR 1.5	SR 5/8	SR 5/8	SR 3/8		
12	220	240	NFZ	1.5	1.5	14	SR 2	SR 5/8	SR 5/8	SR 3/8		
11	200	220	NFK	3.0	1.5	6	SR 2	SR 3/4	SR 3/4	SR 3/4		
10	180	200	NFK	3.0	3.0	3	SR 2	SR 5/8	SR 3/4			
9	150	180	NFK	3.0	3.0	6	SR 2.5	SR 5/8	SR 3/4			
8	140	150	NSK	3.0	3.0	4	P5x.258	L1 3/4x1 3/4x1/8				
7	120	140	NSK	3.3	3.0	4	P8x.258	L1 3/4x1 3/4x1/8				
6	100	120	NSK	3.0	3.5	3	P5x.258	L1 3/4x1 3/4x1/8				
5	80	100	NSK	3.5	3.0	3	P6x.258	L1 3/4x1 3/4x1/8				
4	60	80	NSK	11.0	9.5	3	P5x.258	L2x2x1/8				
3	40	60	NSK	12.3	11.0	3	P5x.258	L2 1/2x2 1/2x3/16				
2	20	40	NSK	14.0	12.3	3	P6x.26	L2 1/2x2 1/2x3/16				
1	0	20	NSK	15.5	14.0	3	P6x.26	L2 1/2x2 1/2x3/16				

Tower Reactions

No Ice
 Shear: 20.4 kips
 Moment: 2412.31
 ft-kips Weight: 23.0
 kips

With Ice
 Shear: 4.0 kips
 Moment: 521.43
 ft-kips Weight: 33.3
 kips

Leg Reactions

Compression: 187.4
 kips Uplift: -165.7
 kips Shear: 13.2 kips

Alta Mesa Wind Project

Riverside County, California

30% Civil Plans

Westwood

Phone: (818) 810-1130 1200 Wilshire Blvd, Suite #100
 Fax: (818) 810-5422 Miramar, CA 91818
 Website: www.westwood.com
 Westwood Professional Services, Inc.

PREPARED FOR:

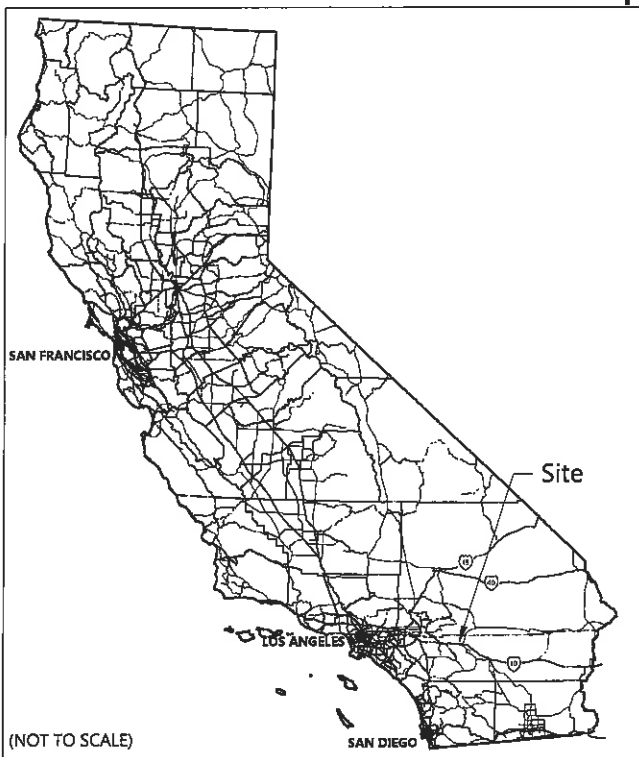
Brookfield

200 Liberty Street, 14th Floor
 New York, NY 10281

REVISIONS:

#	DATE	COMMENT
1	06/22/2020	30% CIVIL PLANS

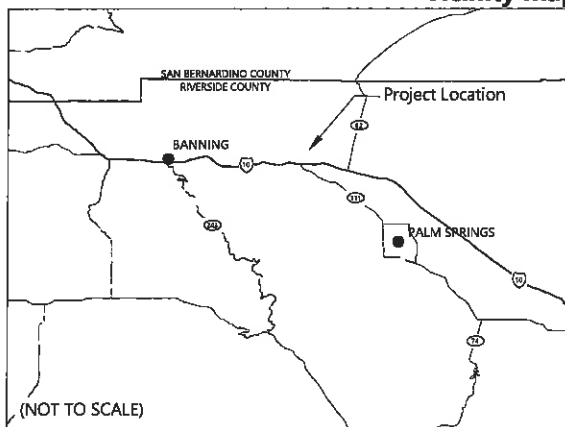
State Map



DATA SET INFORMATION			
BASE FILE	FILE NAME / NOTES	PROVIDER	DATE
1	AERIAL IMAGE	*	*
2	LAND CONTROL	PARCEL ASSESSOR	BROOKFIELD 12/3/2019
3	ALTA SURVEY	54807_CALIFORNIA_MESA_WINDS_2D/54807_CALIFORNIA_MESA_WINDS_3D	BROOKFIELD 6/2/2020
4	TOPOGRAPHY	54807_CALIFORNIA_MESA_WIND_EDITED_MASSPOINTS	BROOKFIELD RENEWABLE 5/27/2020
5	TURBINE ARRAY	ALTA MESA SG-3.4-132_1D2_3 TURBINE LAYOUT/MESA SG3.4-132_1D1	BROOKFIELD 4/23/2020
6	UNDERGROUND COLLECTION	*	*
7	GEN-TIE	*	*
8	STREAMS/WETLANDS	*	*
9	CULTURAL RESOURCES	*	*
10	FEMA INFO	*	*



Vicinity Map



Alta Mesa Wind Project
 Riverside County, CA

Cover

NOT FOR CONSTRUCTION

DATE: 06/22/2020

SHEET: 1 of 12

PREPARED FOR:

Brookfield

200 Liberty Street, 14th Floor
 New York, NY 10281

REVISED:

#	DATE	COMMENT
1	06/22/2020	10% CIVIL PLANS



**Alta Mesa Wind
 Project**
 Riverside County, CA

Sheet List & Turbine
 Coordinates

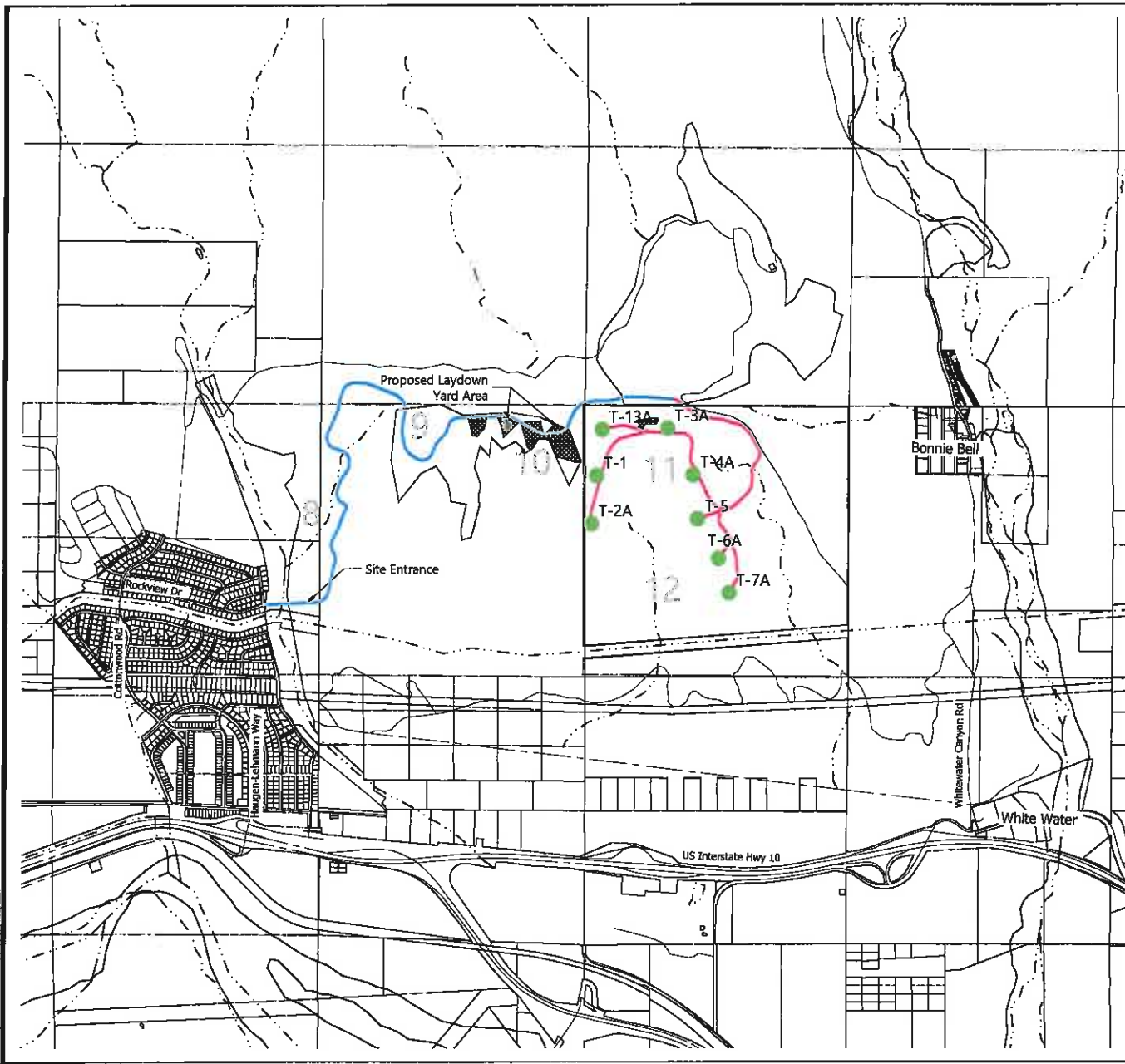
NOT FOR CONSTRUCTION

DATE: 06/22/2020

SHEET: 2 of 12

Sheet Number	Sheet Title
1	Cover
2	Sheet List and Turbine Coordinates
3	Overall
4	Defay Flow Plan and Autoturn Exhibits
5	Construction Details
6	Construction Details
7	Construction Details
8	Site Plan 1
9	Site Plan 2
10	Site Plan T-1 T-2 T-13
11	Site Plan T-1 T-2 T-3 T-4 T-5 T-13
12	Site Plan T-1 T-2 T-4 T-5 T-6 T-7

	Turbine ID	Easting	Northing	Longitude	Latitude	Existing Elevation	Proposed Elevation
Alta Mesa	T-1	6435312.44	2287227.63	W116° 39' 58.74"	N033° 56' 36.92"	2793.10	2780.65
	T-2A	6435206.58	2286285.32	W116° 40' 00.56"	N033° 56' 27.59"	2737.90	2737.20
	T-3A	6436726.23	2286158.07	W116° 39' 43.01"	N033° 56' 46.18"	2722.71	2724.72
	T-4A	6437235.43	2287240.78	W116° 39' 36.92"	N033° 56' 37.12"	2648.90	2649.36
	T-5	6437329.52	2286375.82	W116° 39' 35.76"	N033° 56' 28.57"	2636.28	2637.00
	T-6A	6437748.78	2285592.32	W116° 39' 30.75"	N033° 56' 20.84"	2556.07	2552.50
	T-7A	6437961.83	2284910.90	W116° 39' 28.20"	N033° 56' 14.10"	2487.47	2482.50
	T-13A	6435420.03	2288133.48	W116° 39' 58.51"	N033° 56' 45.88"	2761.14	2751.99



LEGEND:

	PROJECT BOUNDARY
	TURBINE LOCATION
	TURBINE NUMBER
	EXISTING MAIN ACCESS ROAD
	PROPOSED ALTA MESA ACCESS ROAD
	PROJECT FACILITIES
	EXISTING ROAD CENTERLINE
	EXISTING PAVED
	EXISTING STREAM
	SHEET NUMBER REFERENCE

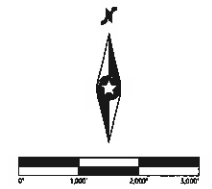
Westwood
 Phone: (951) 991-1111 12711 Woodhurst Blvd, Suite #200
 Fax: (951) 991-5422 Indio, CA 92201
 Cell: (951) 991-1100 westwood@westwood.com
 Westwood Professional Services, Inc.

PREPARED FOR:

Brookfield

200 Liberty Street, 14th Floor
 New York, NY 10281

REVISION	DATE	COMMENT
1		PROPOSED 50% CON. PLANS



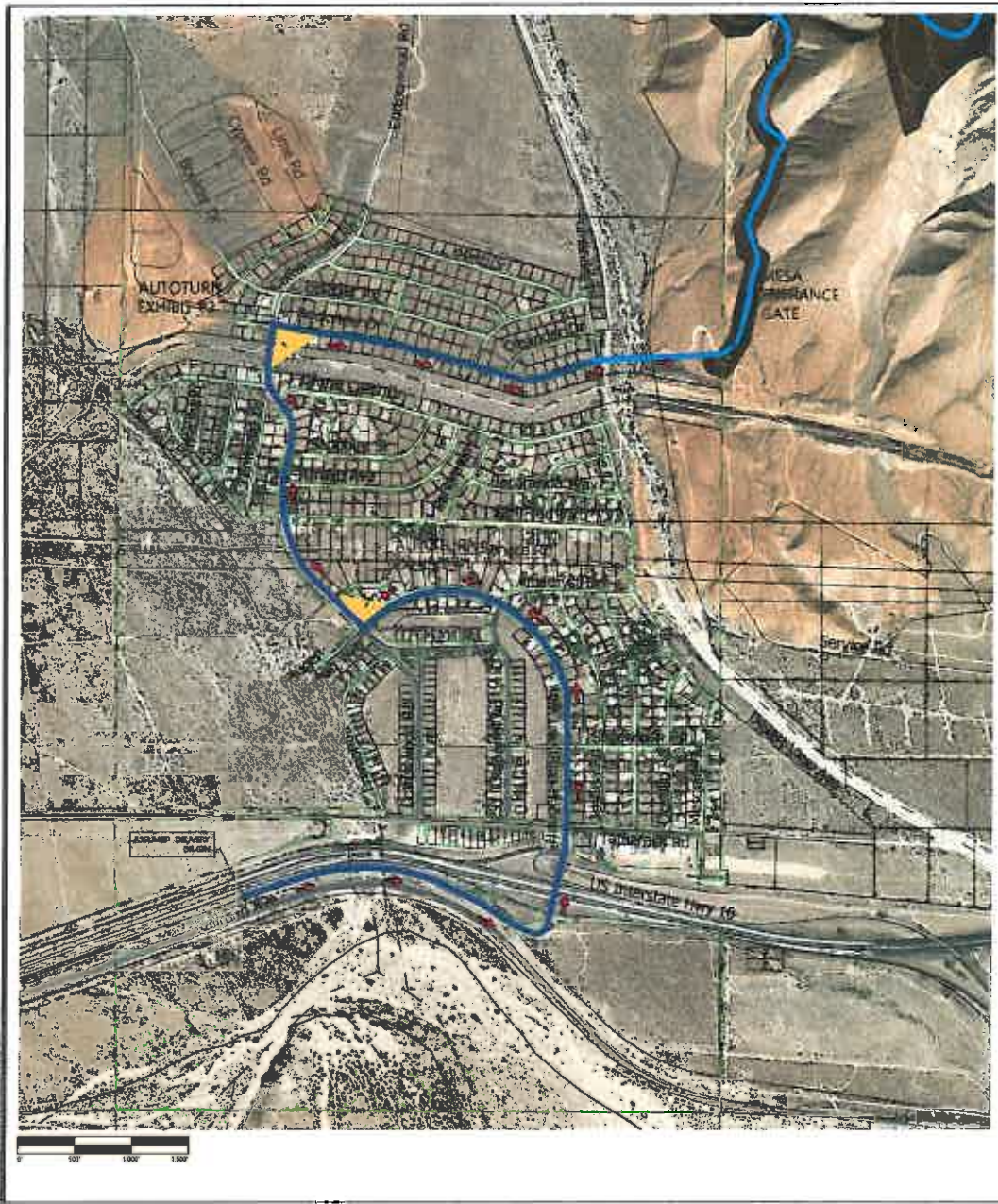
Alta Mesa Wind Project
 Riverside County, CA

Overall

NOT FOR CONSTRUCTION

DATE: 06/22/2020

SHEET: 3 of 12



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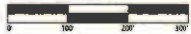
- DELIVERY ROUTE TO MESA ENTRANCE GATE
- EXISTING ROAD CENTERLINE
- EXISTING ROAD CENTERLINE TO BEING DELIVERED TO
- PROPOSED INTERSECTION IMPROVEMENT

*ASSUME DELIVERY TRAFFIC ARRIVES FROM THE WEST

AUTOTURN EXHIBIT #1



AUTOTURN EXHIBIT #2



Westwood

200 Liberty Street, 14th Floor
New York, NY 10281

PREPARED FOR:

Brookfield

200 Liberty Street, 14th Floor
New York, NY 10281

NO.	DATE	COMMENT
1	06/22/2020	17B CIVL PLANS

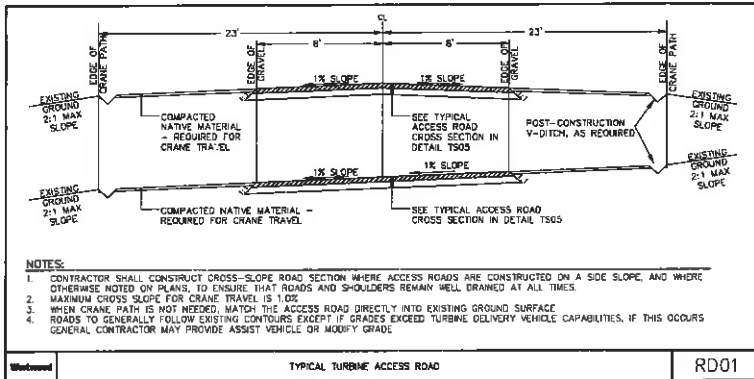


Alta Mesa Wind Project
Riverside County, CA

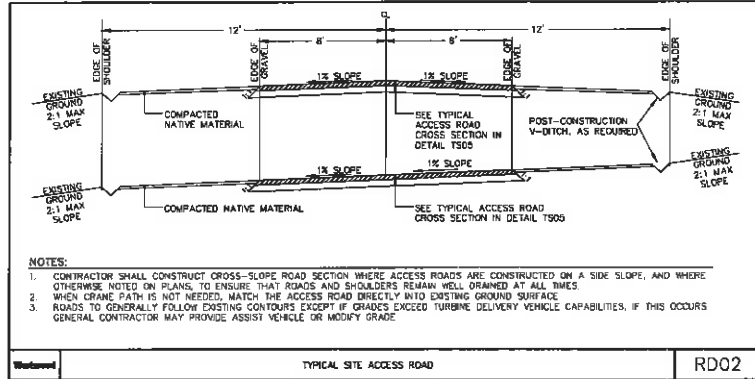
Preliminary Delivery Flow Plan and Autoturn Exhibits

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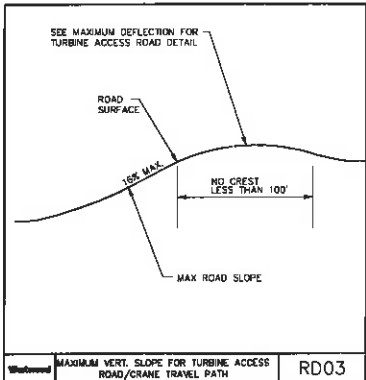
DATE: 06/22/2020
PAGE: 4 of 12



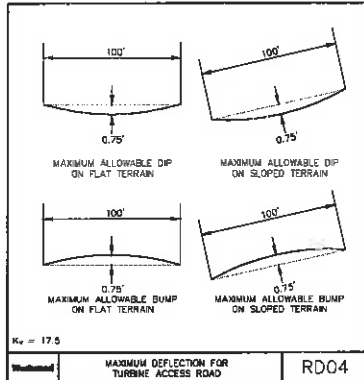
Westwood TYPICAL TURBINE ACCESS ROAD RD01



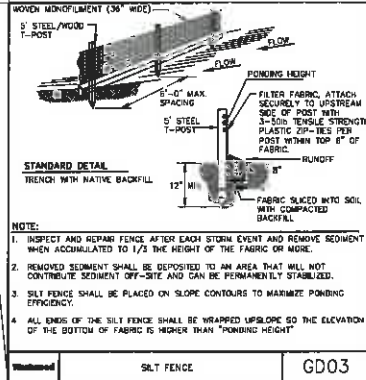
Westwood TYPICAL SITE ACCESS ROAD RD02



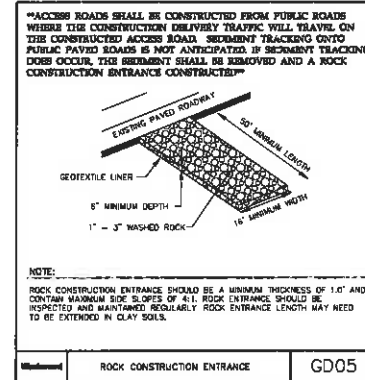
Westwood MAXIMUM VERT. SLOPE FOR TURBINE ACCESS ROAD/CRANE TRAVEL PATH RD03



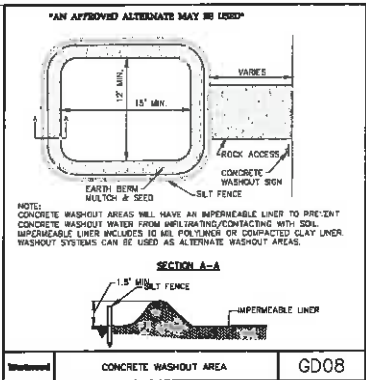
Westwood MAXIMUM DEFLECTION FOR TURBINE ACCESS ROAD RD04



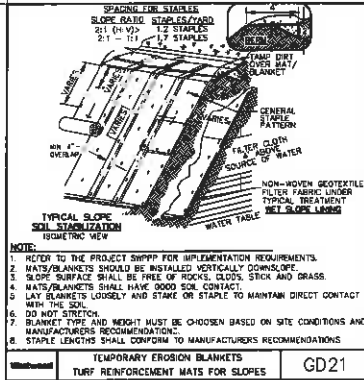
Westwood SILT FENCE GD03



Westwood ROCK CONSTRUCTION ENTRANCE GD05



Westwood CONCRETE WASHOUT AREA GD08



Westwood TEMPORARY EROSION BLANKETS TURF REINFORCEMENT MATS FOR SLOPES GD21

Westwood

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 Fax: 952.897.5622 Minneapolis, MN 55426
 E-mail: 952.897.5150 westwood@westwood.com
 *Member of Professional Services, Inc.

PREPARED FOR:

Brookfield

200 Liberty Street, 14th Floor
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PROJECT:

DATE COMMENT

1 06/22/2020 80% CIVIL PLANS

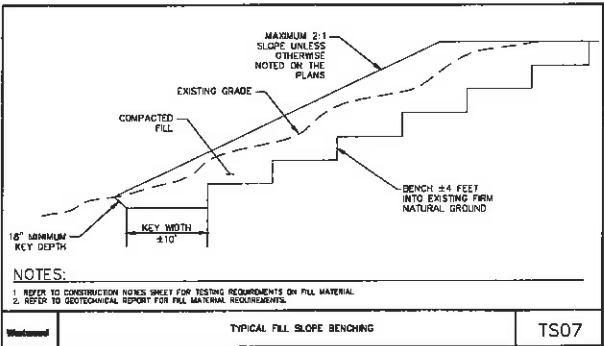
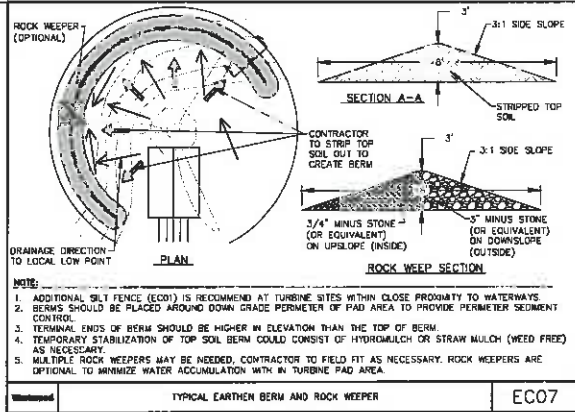
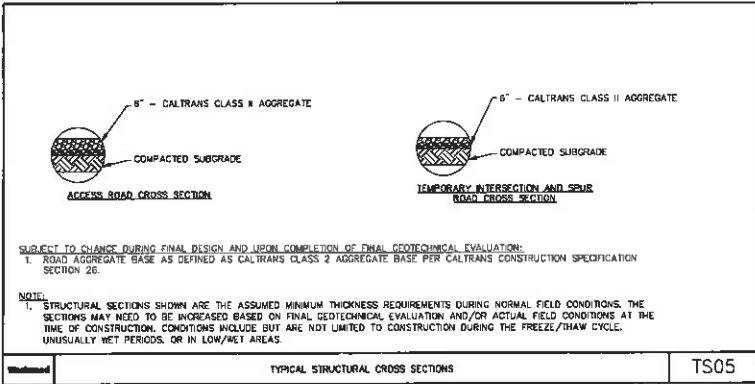
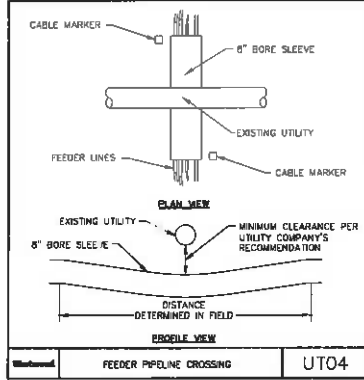
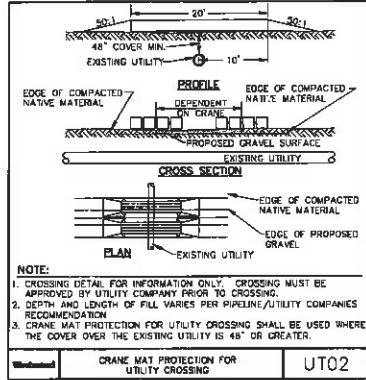
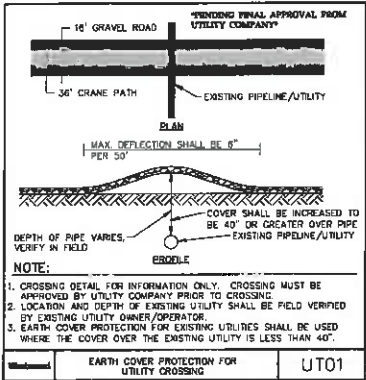
Alta Mesa Wind Project
 Riverside County, CA

Construction Details

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DATE: 06/22/2020

SHEET: 5 of 12



Westwood

Phone: 845-632-5150 12794 Landerbrook Drive, Suite 400
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 Westwood Professional Services, Inc.

PREPARED FOR:

Brookfield

200 Liberty Street, 14th Floor
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REVISIONS:

#	DATE	COMMENT
1	06/22/2020	30% CIVIL PLANS

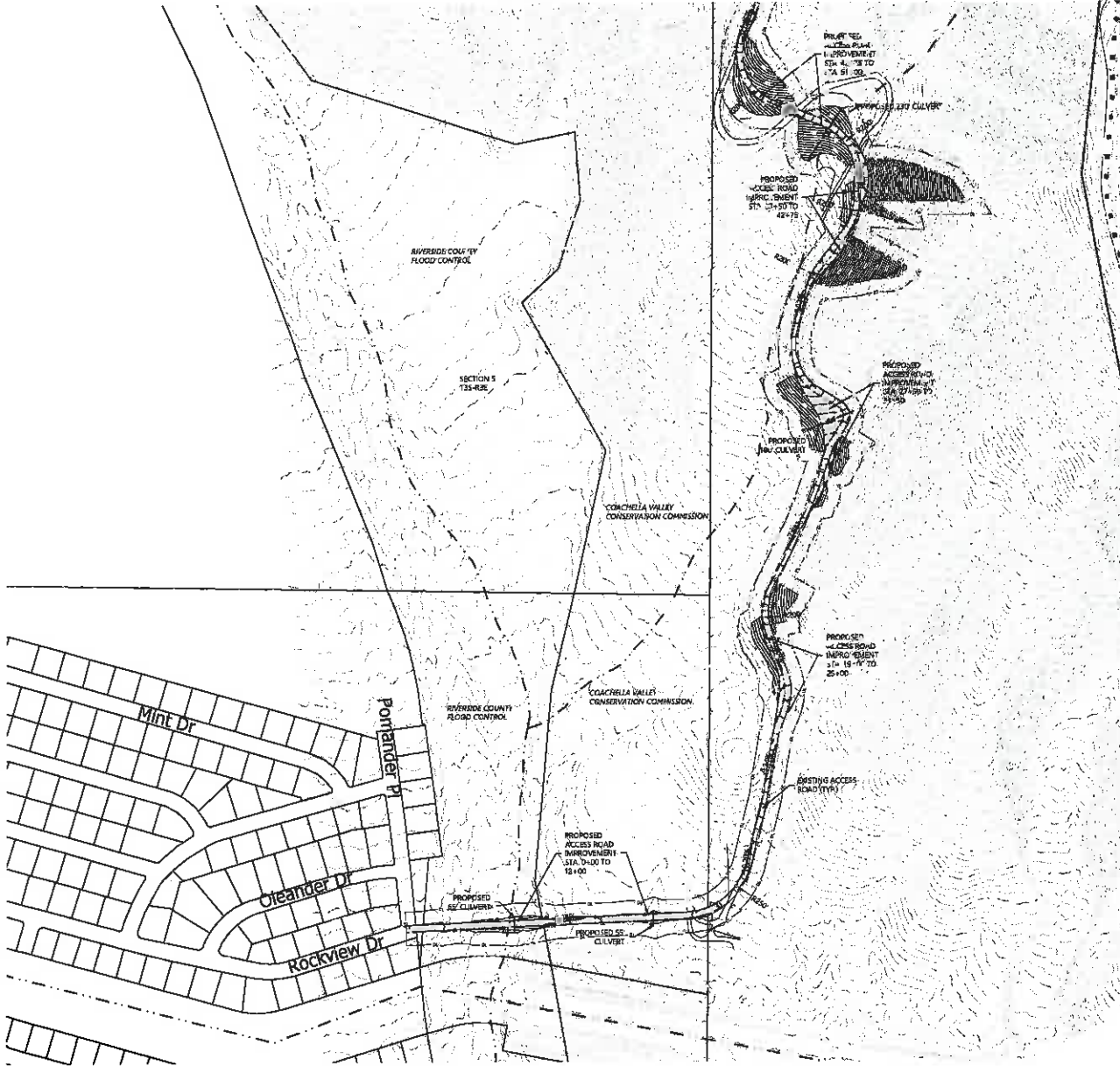
Alta Mesa Wind Project
 Riverside County, CA

Construction Details

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DATE: 06/22/2020
 SHEET: 7 of 12

SHEEP 9



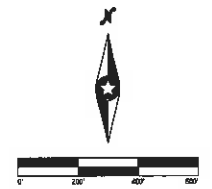
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 - PROPOSED ACCESS ROAD
 - PROPOSED TURBINE PAD EDGE
 - PROPOSED GRADING LIMITS
 - PROPOSED DISTURBANCE LIMITS
 - PROPOSED CULVERT
 - PROPOSED DITCH
 - PROPOSED PROJECT FACILITIES
 - NON-PARTICIPATING LAND
 - RIGHT-OF-WAY LINES
 - PARCEL LINES
 - PROPOSED INDEX CONTOUR
 - PROPOSED INTERVAL CONTOUR
 - EX. INDEX CONTOUR
 - EX. INTERVAL CONTOUR
 - EX. CONCRETE LINES
 - EX. GRAVEL ROAD
 - EX. FENCE
 - EX. WIND TURBINE
 - EX. OVERHEAD POWER POLE
 - EX. STREAM CHANNEL

Westwood
 Phone: (516) 331-9330 12797 Wilshire Drive, Suite #100
 Fax: (516) 331-9622 New Rochelle, NY 10801
 Website: (516) 331-9416 www.westwood.com
 Westwood Professional Services, Inc.

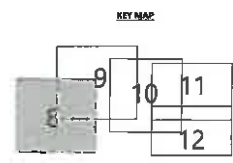
Brookfield
 200 Liberty Street, 14th Floor
 New York, NY 10281

REVISIONS:

#	DATE	COMMENTS
1	06/22/2020	30% CML PLANS



Alta Mesa Wind Project
 Riverside County, CA

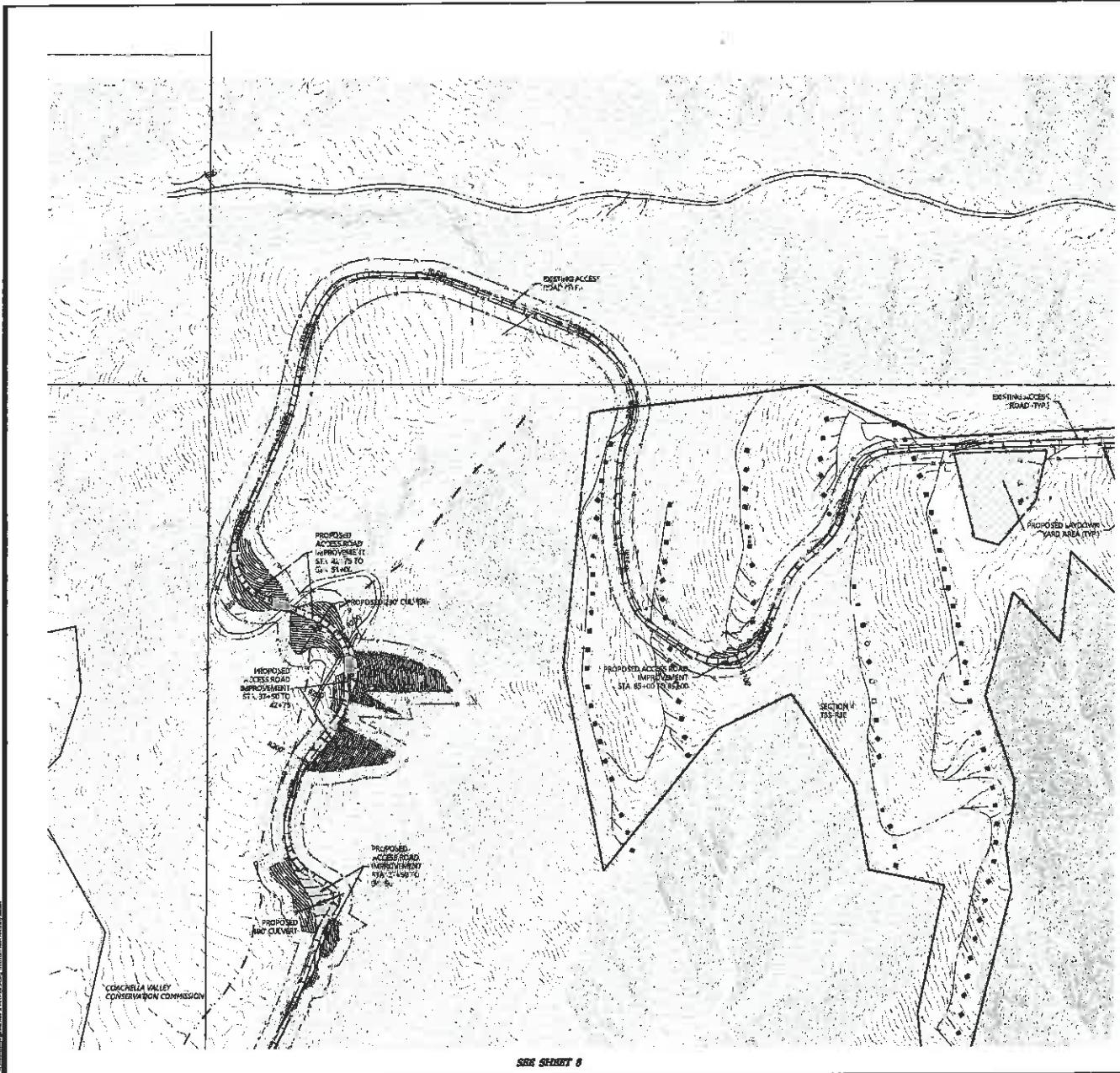


Site Plan 1

NOT FOR CONSTRUCTION

DATE: 06/22/2020

SHEET: 8 of 12

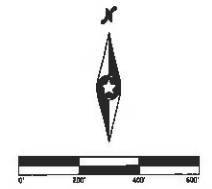


- LEGEND:**
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 - PROPOSED CULVERT
 - PROPOSED DITCH
 - PROPOSED PROJECT FACILITIES
 - NON-PARTICIPATING LAND
 - RIGHT-OF-WAY LINES
 - PROPOSED INDEX CONTOUR
 - EX INDEX CONTOUR
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 - EX STREAM CHANNEL

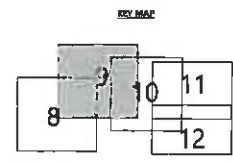
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 Home: 887-3155 1200 W. Newhope Blvd., Suite 4500
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REVISION	DATE	COMMENT
1	06/22/2020	FOR CHB PLANS



Alta Mesa Wind Project
 Riverside County, CA



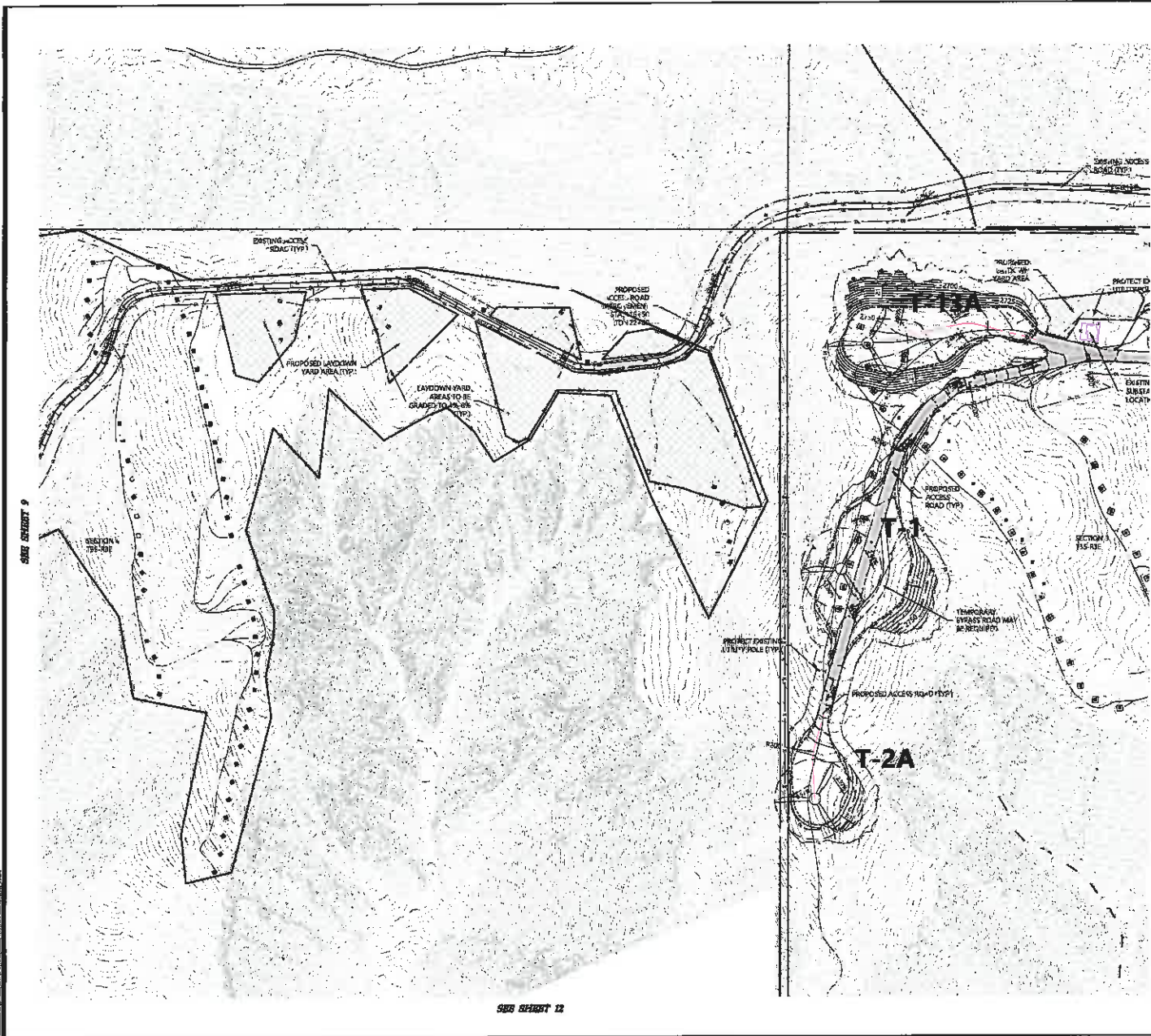
Site Plan 2

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DATE: 06/22/2020

SHEET: 9 of 12

SEE SHEET 8



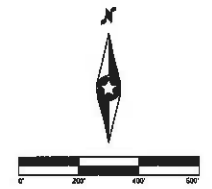
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- PROPOSED DITCH
- PROPOSED PROJECT FACILITIES
- NON-PARTICIPATING LAND
- RIGHT-OF-WAY LINES
- PARCEL LINES
- PROPOSED INDEX CONTOUR
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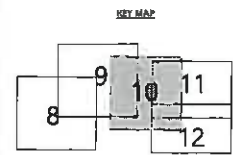
Westwood
 Phone: (916) 957-5100 121 N. Whitehead Drive, Suite 400
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REVISION	DATE	COMMENT
1		INCORPORATE PER CIVIL PLAN



Alta Mesa Wind Project
 Riverside County, CA

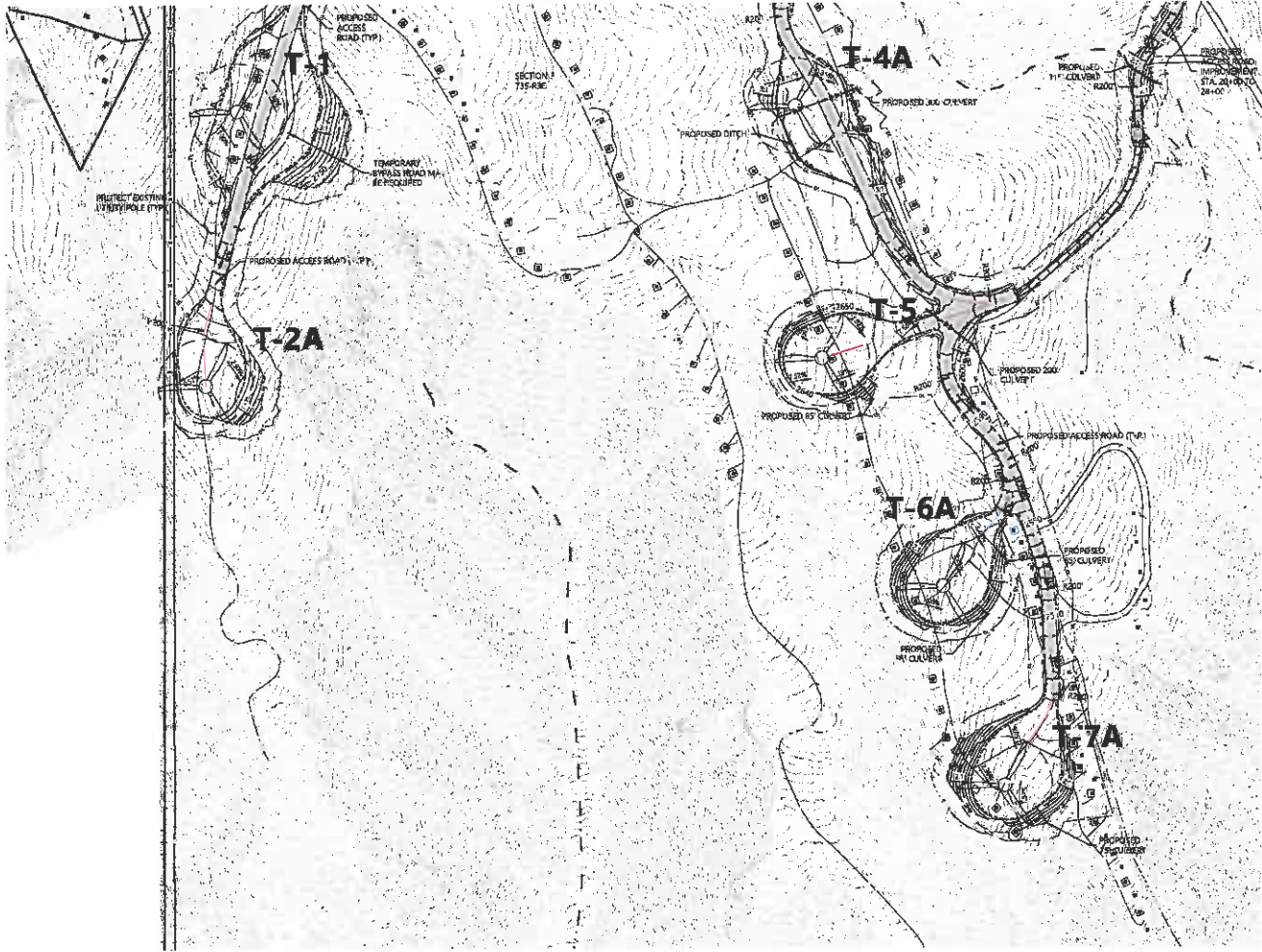


Site Plan T-1, T-2, T-13

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 DATE: 06/22/2020
 SHEET: 10 of 12

SHEET 10

SIDE SHEET 11



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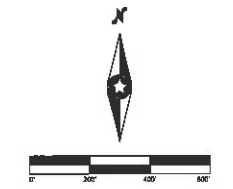
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	NON-PARTICIPATING LAND
	RIGHT-OF-WAY LINES
	PARCEL LINES
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Westwood

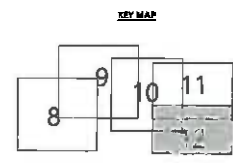
Phone: (845) 837-1100 12761 Whitehouse Drive, Suite #100
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 Westwood Public Small Services, Inc.

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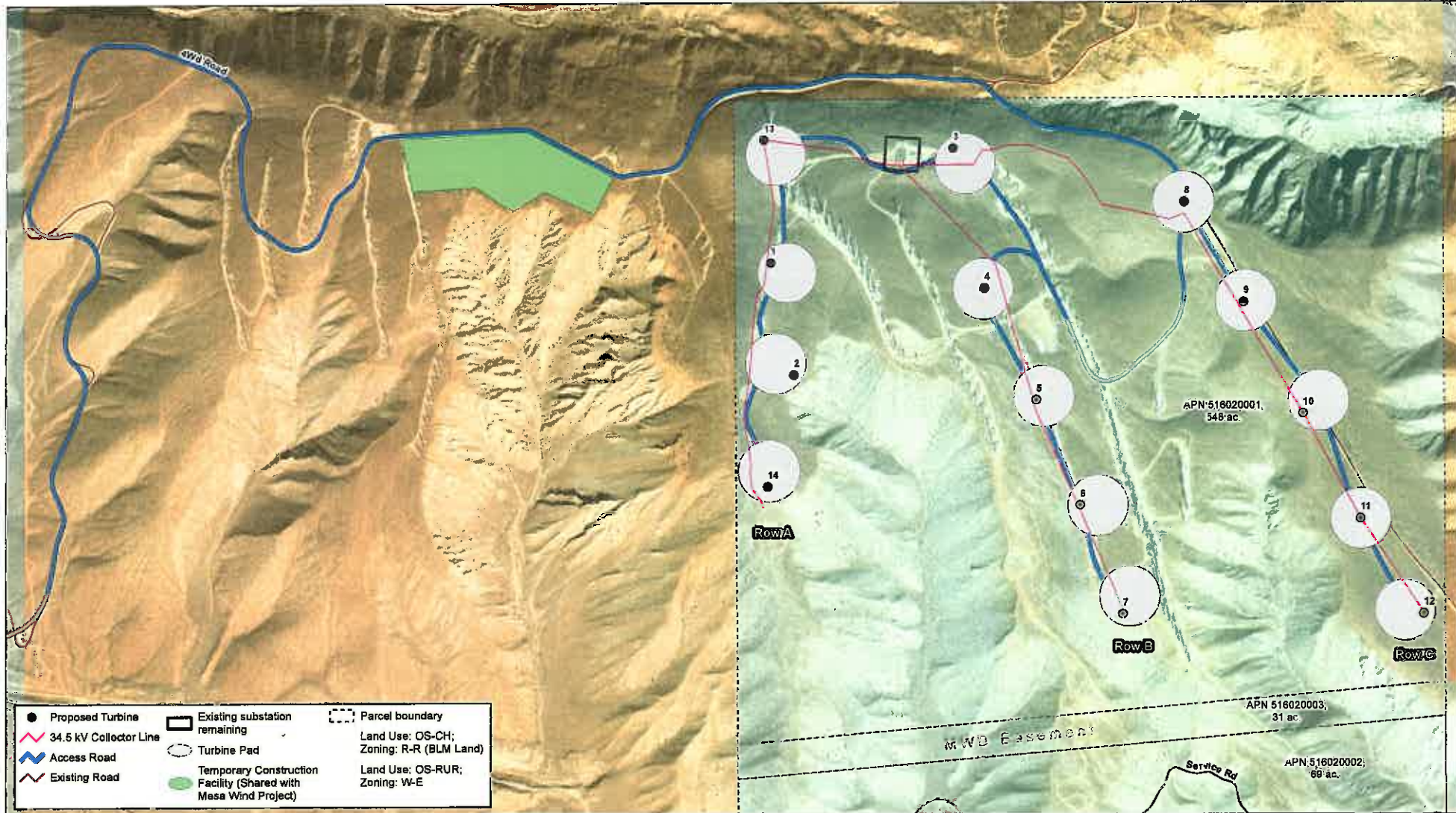


Alta Mesa Wind Project
 Riverside County, CA



Site Plan T-1, T-2, T-4, T-5, T-6, T-7

NOT FOR CONSTRUCTION
 DATE: 06/22/2020
 SHEET: 12 OF 12



● Proposed Turbine	▭ Existing substation remaining	▭ Parcel boundary
⚡ 34.5 kV Collector Line	○ Turbine Pad	Land Use: OS-CH; Zoning: R-R (BLM Land)
↔ Access Road	🏗 Temporary Construction Facility (Shared with Mesa Wind Project)	Land Use: OS-RUR; Zoning: W-E
⚡ Existing Road		



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Exhibit Preparer:
 Aspen Environmental Group
 Emily Capello
 415-896-5312
 ecapello@aspeneg.com

Commercial WECS Exhibit 1a.

Site Plan



- Proposed Turbine
- Major Highways
- Highways
- Collector Line
- Access Road
- Existing Road
- Existing substation remaining
- Turbine Pad
- Temporary Construction Facility (Shared with Mesa Wind Project)
- - - Parcel boundary
- Land Use: OS-CH; Zoning: R-R (BLM Land)
- Land Use: OS-RUR; Zoning: W-E



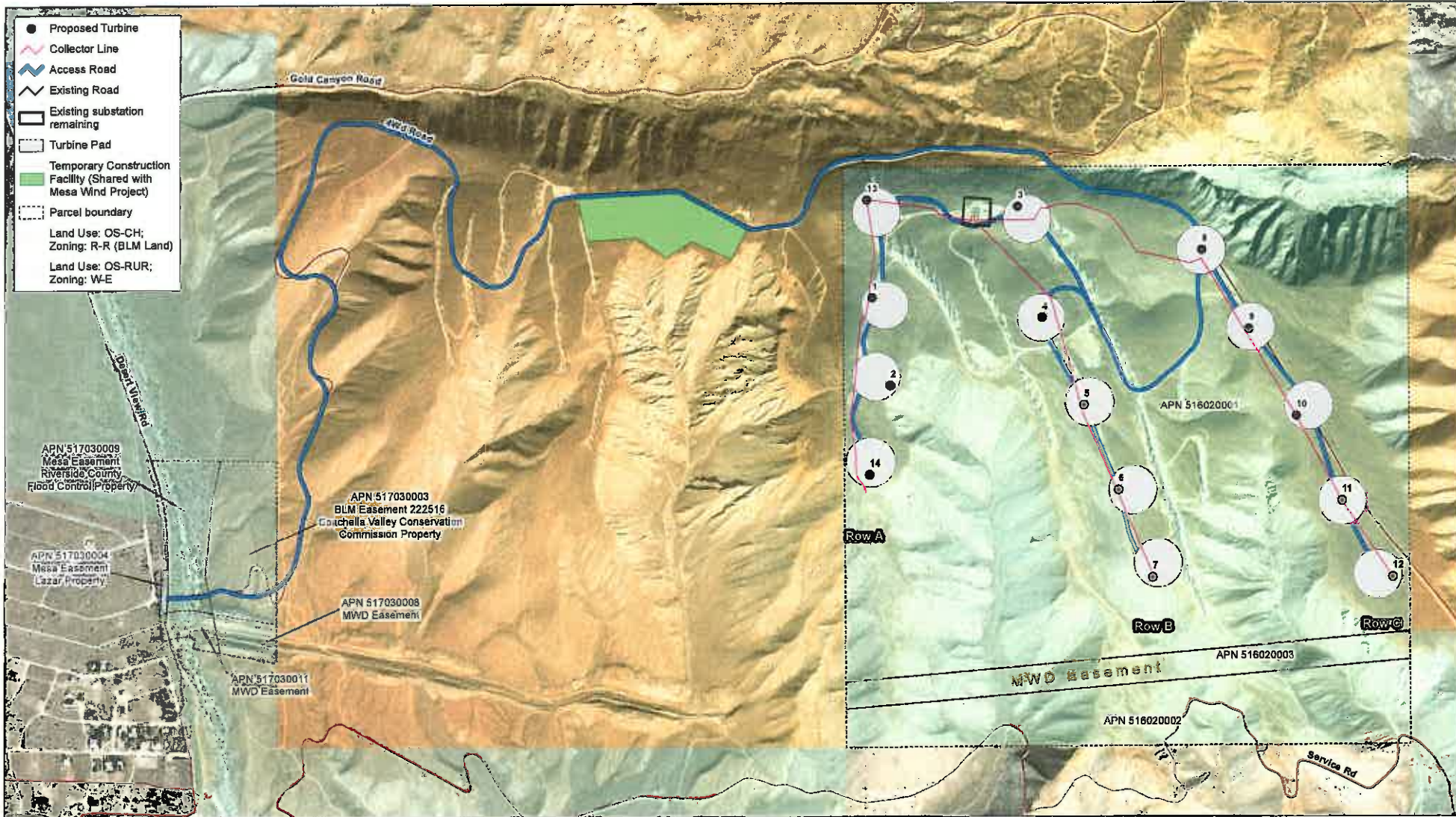
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 ecapello@aspenev.com

Commercial WECS Exhibit 1b.

Site Plan



- Proposed Turbine
- Collector Line
- Access Road
- Existing Road
- Existing substation remaining
- Turbine Pad
- Temporary Construction Facility (Shared with Mesa Wind Project)
- - - Parcel boundary
- Land Use: OS-CH; Zoning: R-R (BLM Land)
- Land Use: OS-RUR; Zoning: W-E

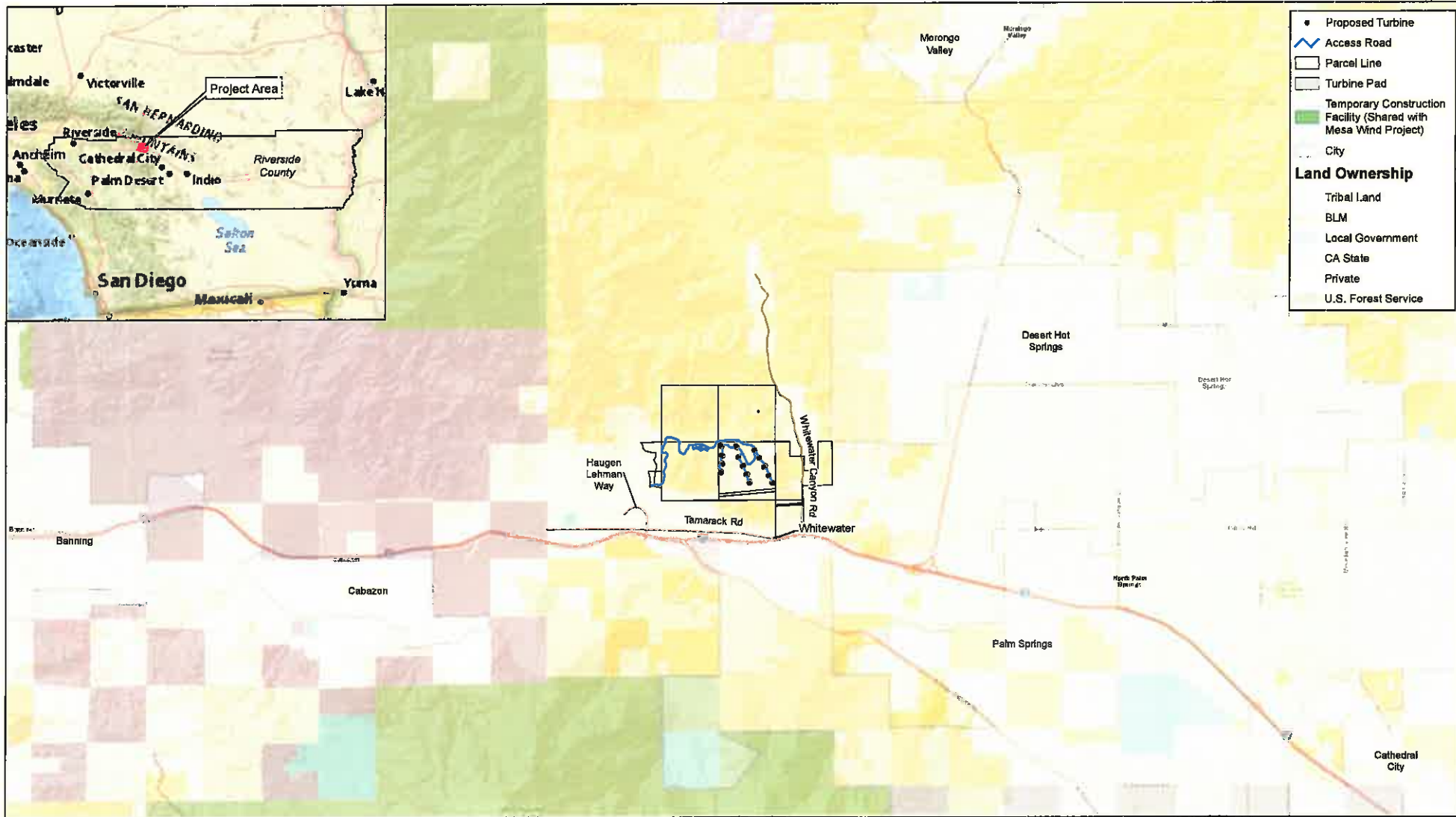


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Commercial WECS Exhibit 1c.
Access Road Easements



- Proposed Turbine
- Access Road
- ▭ Parcel Line
- ▭ Turbine Pad
- ▭ Temporary Construction Facility (Shared with Mesa Wind Project)
- City

Land Ownership

- ▭ Tribal Land
- ▭ BLM
- ▭ Local Government
- ▭ CA State
- ▭ Private
- ▭ U.S. Forest Service

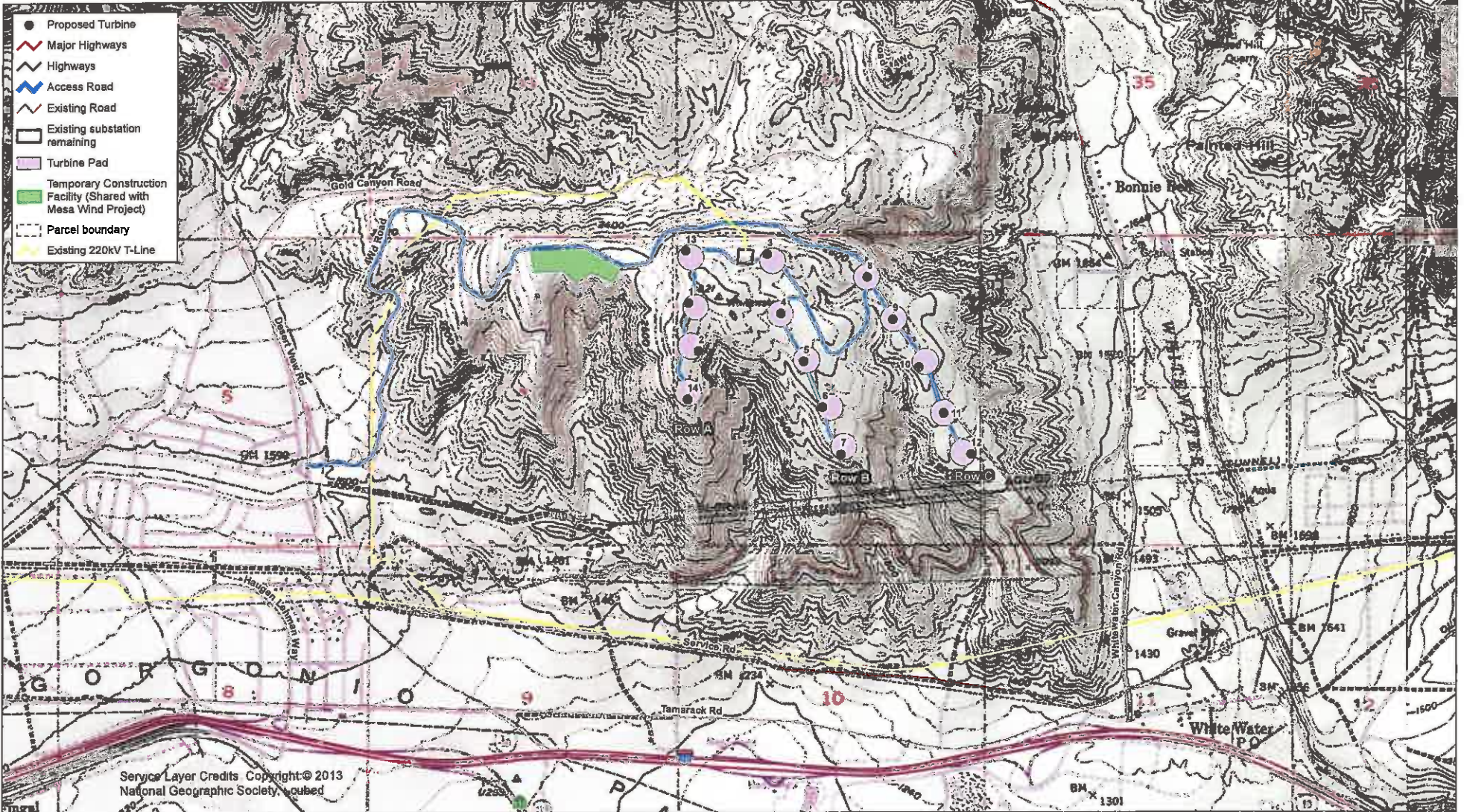


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Commercial WECS Exhibit 2.
Vicinity Map



Service Layer Credits Copyright © 2013 National Geographic Society, Inc.



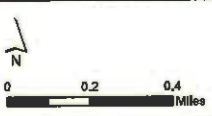
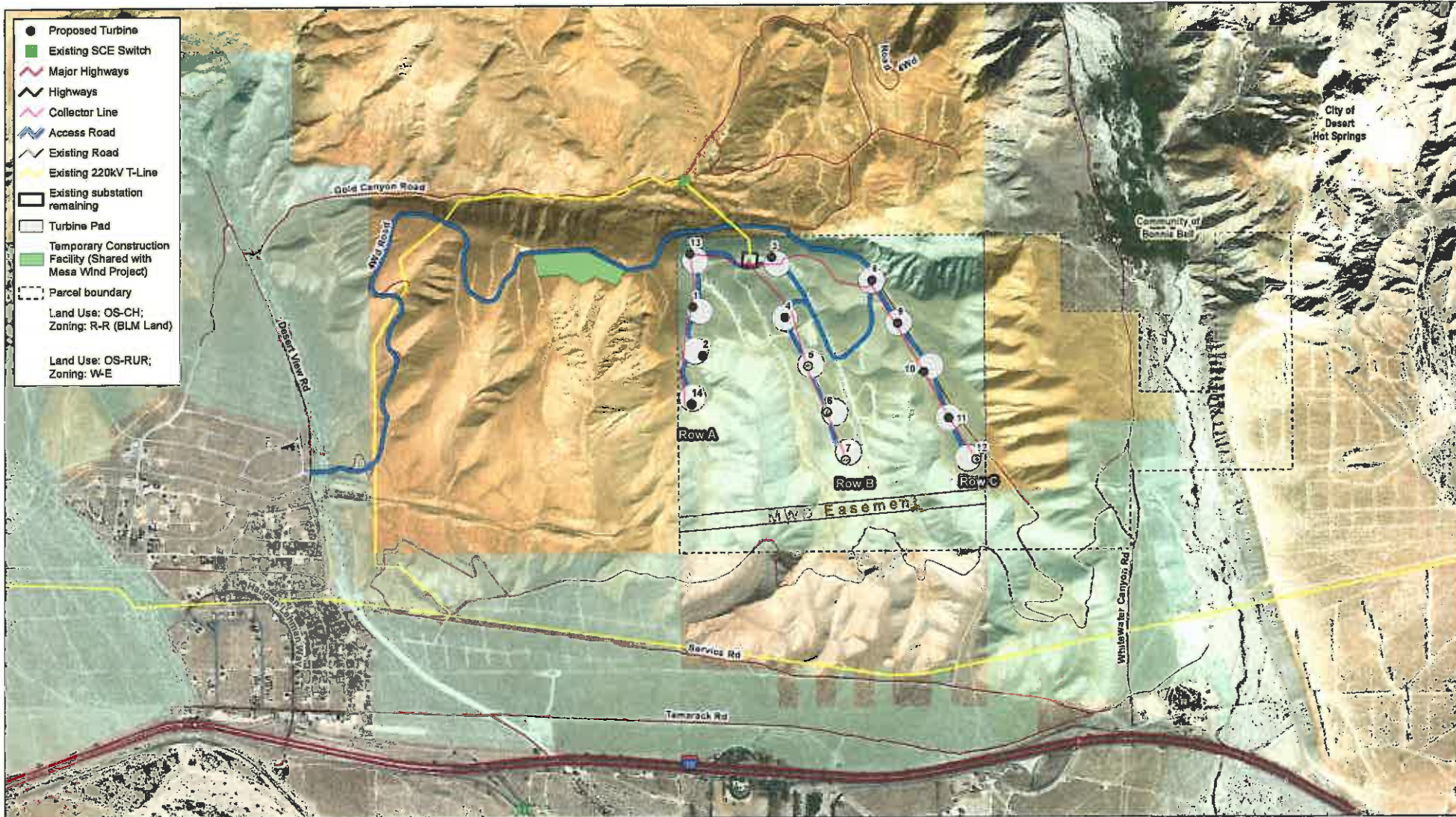
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Commercial WECS Exhibit 3.

Topography Map

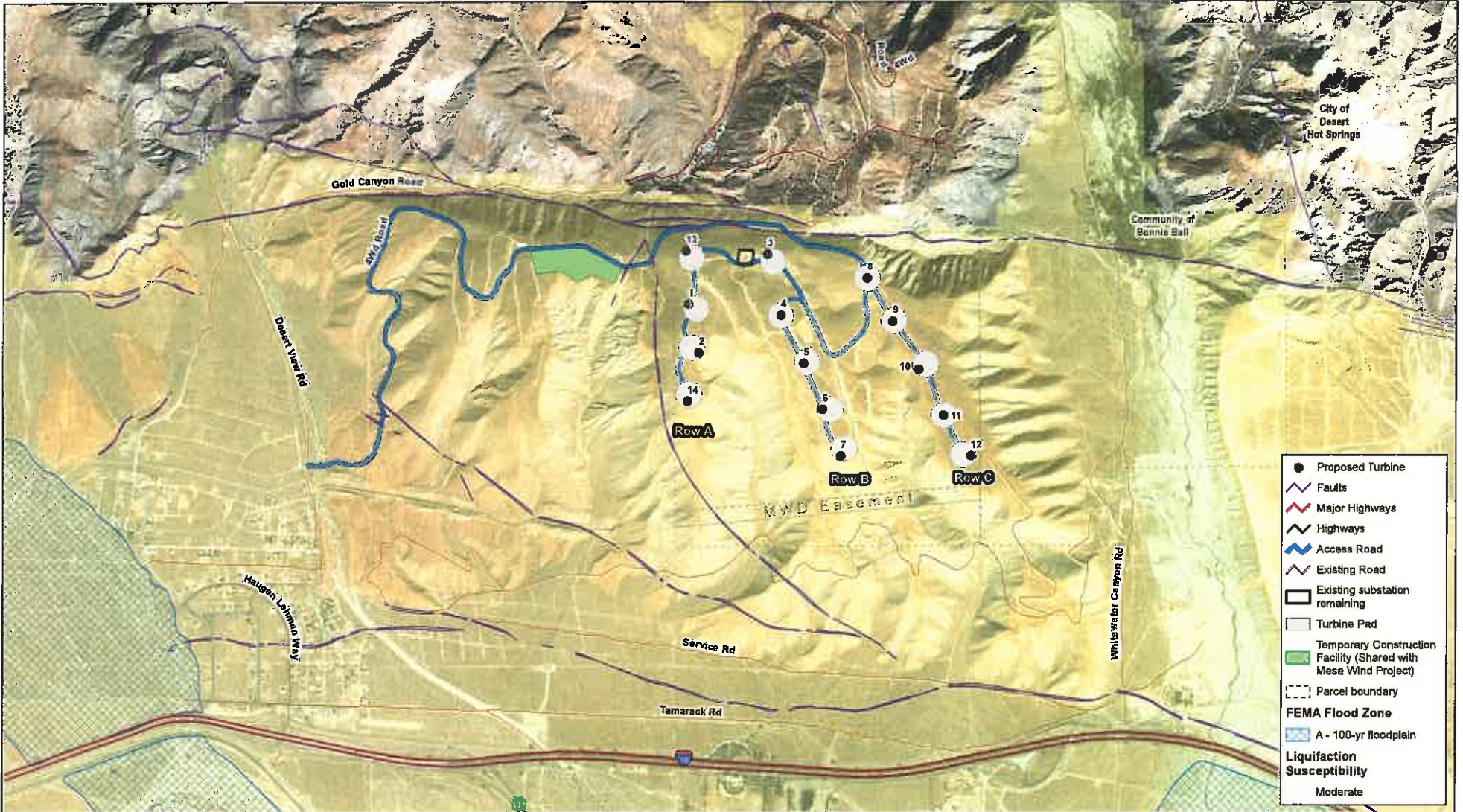


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 ecapello@aspenerg.com

Commercial WECS Exhibit 4.
Interconnection Lines

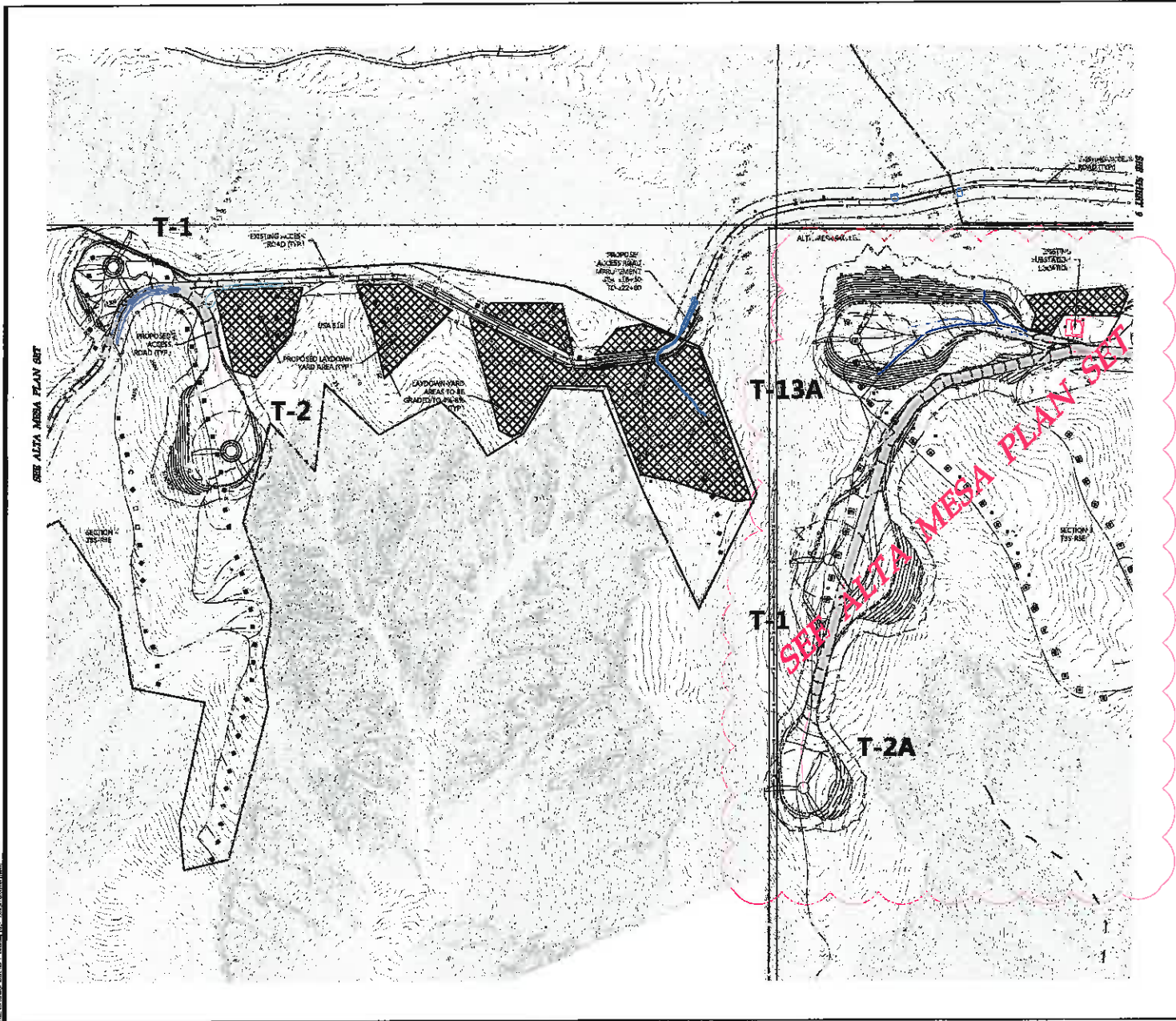


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Commercial WECS Exhibit 5.
Faults and Floodzone



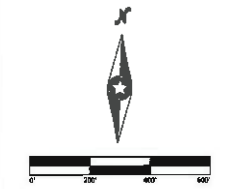
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- PROPOSED ACCESS ROAD
- PROPOSED TURBINE PAD EDGE
- PROPOSED GRADING LIMITS
- PROPOSED DISTURBANCE LIMITS
- PROPOSED CLIVERT
- PROPOSED DITCH
- PROPOSED PROJECT FACILITIES
- PARTICIPATING BOUNDARY
- RIGHT-OF-WAY LINES
- PARCEL LINES
- PROPOSED INTERVAL CONTOUR
- EX. INTERVAL CONTOUR
- EX. CONCRETE LINES
- EX. GRAVEL ROAD
- EX. FENCE
- EX. MINI TURBINE
- EX. OVERHEAD POWER POLE
- EX. STREAM CHANNEL
- EX. WATER EDGE

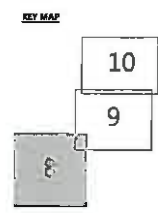
Westwood
 Phone: (949) 971-5150 | 12701 Wilshire Blvd, Suite #300
 Fax: (949) 971-5173 | Irvine, CA 92618
 Toll-Free: (866) 763-5247 | westwood.com
 Westwood Professional Services, Inc.

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 200 Liberty Street, 14th Floor
 New York, NY 10281

REVISED	DATE	COMMENT
1	10/23/2020	ISSUE FOR PERMITS



Mesa Wind Project
 Riverside County, CA

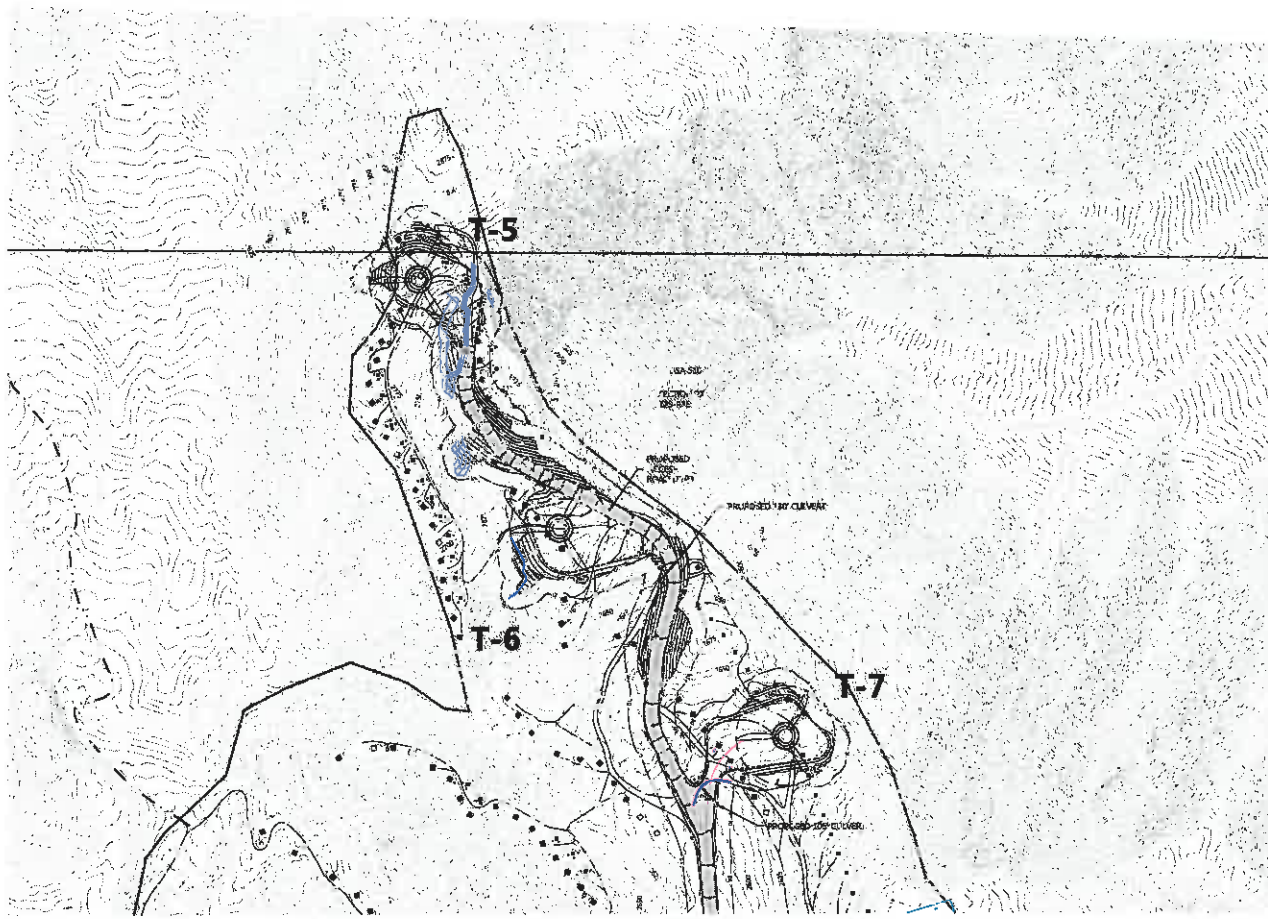


Site Plan T-1, T-2, T-13

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DATE: 10/23/2020

SHEET: 8 OF 10



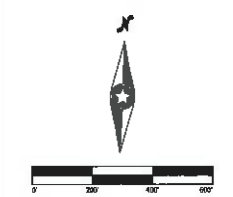
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TURBINE LOCATION	TURBINE LOCATION
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	PARTICIPATING BOUNDARY
	RIGHT-OF-WAY LINES
	PARCEL LINES
	PROPOSED INTERVAL CONTOUR
	EX. INDEX CONTOUR
	EX. INTERVAL CONTOUR
	EX. CONCRETE LINES
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	EX. WATER EDGE

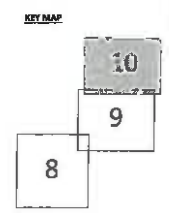
Westwood
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Mesa Wind Project
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Site Plan 2

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DATE: 10/23/2020

SHEET: 10 of 10

NOTICE OF PUBLIC HEARING
RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION
www.rcaluc.org

A PUBLIC HEARING has been scheduled before the Riverside County Airport Land Use Commission (ALUC) to consider the applications described below.

Any person may submit written comments to the ALUC before the hearing or may appear and be heard in support of or opposition to the project at the time of hearing. For more information please contact **ALUC Planner Paul Rull at (951) 955-6893**. The ALUC holds hearings for local discretionary permits within the Airport Influence Area, reviewing for aeronautical safety, noise and obstructions. ALUC reviews a proposed plan or project solely to determine whether it is consistent with the applicable Airport Land Use Compatibility Plan.

The County of Riverside Planning Department should be contacted on non-ALUC issues. For more information please contact County of Riverside Planner Mr. Jay Olivas at (760) 863-7050.

The proposed project application may be viewed by a prescheduled appointment and on the ALUC website www.rcaluc.org. Written comments may be submitted at the Riverside County Administrative Center, 4080 Lemon Street, 14th Floor, Riverside, California 92501, Monday through Friday from 8:00 a.m. to 3:30 p.m., or by e-mail to prull@rivco.org. Individuals with disabilities requiring reasonable modifications or accommodations, please telephone Barbara Santos at (951) 955-5132.

PLACE OF HEARING: Riverside County Administration Center
4080 Lemon Street, 1st Floor Board Chambers
Riverside California

DATE OF HEARING: February 11, 2021

TIME OF HEARING: 9:30 A.M.

Pursuant to Executive Order N-25-20, this meeting will be conducted by teleconference and at the Place of Hearing, as listed above. Public access to the meeting location will be allowed, but limited to comply with the Executive Order. Information on how to participate in the hearing will be available on the ALUC website at www.rcaluc.org

CASE DESCRIPTION:

ZAP1092PS20 – AM Wind Repower, LLC (Representative: Brookfield Renewable Partners) – County of Riverside Case Nos. WCS00071R10 (WECS Permit), VAR200001 (Variance). The applicant proposes a project within the jurisdiction of the County of Riverside, Alta Mesa Wind Project, to decommission and remove 159 existing commercial wind turbines (wind energy conversion systems, abbreviated as "WECS") and install 7 new wind turbines with a maximum height of 499 feet above ground level on 548 gross acres (25 acres net development footprint) located northerly of Interstate 10, and westerly of State Route 62, and install one new 263 foot tall meteorological tower, as well as including associated equipment such as existing on-site substation, temporary construction yard, access roads, and existing 220kV transmission line. The applicant also proposes a variance to eliminate building setbacks along the western and norther property lines.

The applicant also proposes another project within the jurisdiction of the Bureau of Land Management, Mesa Wind Project, to decommission and remove 460 existing commercial wind turbines and install 8 new wind turbines with a maximum height of 499 feet above ground level on 1,285 (30 acres net development footprint), located northerly of Interstate 10, and westerly of State Route 62, and install one new 263 foot tall meteorological tower. The Bureau of Land Management has already approved this project under Case No. CACA55718. (The Mesa Wind Project is directly north and west of the proposed Alta Mesa Wind Project) (Not located within an Airport Compatibility Zone).



RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

APPLICATION FOR MAJOR LAND USE ACTION REVIEW

ALUC CASE NUMBER: ZAP1092PS20 DATE SUBMITTED: 12-10-20

APPLICANT / REPRESENTATIVE / PROPERTY OWNER CONTACT INFORMATION

Applicant Brookfield Renewable Partners Phone Number (213) 212-0781
Mailing Address Attn: Jonathan Kirby Email jonathan.kirby@brookfieldrenewable.com
6703 Oak Creek Road
Mojave, CA 93501

Representative _____ Phone Number _____
Mailing Address _____ Email _____

Property Owner AM WIND REPOWER, LLC Attn: Mohammed Koya Phone Number (209) 601-4898
Mailing Address 4020 Sierra College Boulevard #200 Email mfkoya@hotmail.com
Rocklin, CA 95677

LOCAL JURISDICTION AGENCY

Local Agency Name Riverside County Planning Department Phone Number (760) 863-7050
Staff Contact Jay Olivas Email jolivas@rivco.org
Mailing Address 77-588 El Duna Court, Suite H Case Type _____
Palm Desert, CA 92211
Local Agency Project No WCS 00071 RID (WECS) General Plan / Specific Plan Amendment
VAR 200001 (VARIANCE) Zoning Ordinance Amendment
 Subdivision Parcel Map / Tentative Tract
 Use Permit
 Site Plan Review/Plot Plan
 Other

PROJECT LOCATION

Attach an accurately scaled map showing the relationship of the project site to the airport boundary and runways

Street Address Please see Attachment A.
Assessor's Parcel No. 516020001; 516020002; 516020003 Gross Parcel Size ~914 Acres
Subdivision Name _____ Nearest Airport and distance from Airport _____
Lot Number _____ See Attachment A

PROJECT DESCRIPTION

If applicable, attach a detailed site plan showing ground elevations, the location of structures, open spaces and water bodies, and the heights of structures and trees; include additional project description data as needed

Existing Land Use (describe) The project sites currently contains 619 existing wind turbine generators (WTGs) and access roads.

OUTSIDE AIA

P.S

Proposed Land Use (describe)	The project would remove all 619 existing WTGs and construct 17 new WTGs that are 499' in height (9 on BLM lands and 8 on Riverside County Lands).	
	The project would also build two meteorological towers, both 263' in height, one on BLM lands and one on Riverside County Lands.	
	Additional project details are provided in Attachment A. The locations of the proposed new WTGs are shown in Attachment A.	
	The site boundary where all existing WTGs will be removed is shown in Attachment A.	
For Residential Uses	Number of Parcels or Units on Site (exclude secondary units)	N/A
For Other Land Uses (See Appendix C)	Hours of Operation	24 hours per day
	Number of People on Site	N/A
	Method of Calculation	Maximum Number Turbine maintenance only. Facility would not be manned.
Height Data	Site Elevation (above mean sea level)	See Attachment A ft.
	Height of buildings or structures (from the ground)	Each new WTGs will be 499', each Met tower would be 263 ft.
Flight Hazards	Does the project involve any characteristics which could create electrical interference, confusing lights, glare, smoke, or other electrical or visual hazards to aircraft flight?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	If yes, describe	See Attachment A

- A. NOTICE:** Failure of an applicant to submit complete or adequate information pursuant to Sections 65940 to 65948 inclusive, of the California Government Code, MAY constitute grounds for disapproval of actions, regulations, or permits.
- B. REVIEW TIME:** Estimated time for "staff level review" is approximately 30 days from date of submittal. Estimated time for "commission level review" is approximately 45 days from date of submittal to the next available commission hearing meeting.
- C. SUBMISSION PACKAGE:**
1. Completed ALUC Application Form
 1. ALUC fee payment
 1. Plans Package (24x36 folded) (site plans, floor plans, building elevations, grading plans, subdivision maps)
 1. Plans Package (8.5x11) (site plans, floor plans, building elevations, grading plans, subdivision maps, zoning ordinance/GPA/SPA text/map amendments)
 1. CD with digital files of the plans (pdf)
 1. Vicinity Map (8.5x11)
 1. Detailed project description
 1. Local jurisdiction project transmittal
 3. Gummed address labels for applicant/representative/property owner/local jurisdiction planner
 3. Gummed address labels of all surrounding property owners within a 300 foot radius of the project site. **(Only required if the project is scheduled for a public hearing Commission meeting)**

RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

STAFF REPORT

ADMINISTRATIVE ITEMS

5.1 Director's Approvals.

- A. During the period of December 16, 2020, through January 15, 2021, as authorized pursuant to Section 1.5.2(d) of the 2004 Riverside County Airport Land Use Compatibility Plan, ALUC Director Simon Housman reviewed two non-legislative case within Zone C and one non-legislative case within Zone D of the Jacqueline Cochran Regional Airport Influence Area.

ZAP1052TH20 (Jacqueline Cochran Regional Airport Zone D) pertains to County of Riverside Case No. BRS2002397 (Building Permit), a proposal to construct a 809 square foot rooftop solar panel system on a proposed single family residence located at 61198 Goodwood Drive within the Thermal Motorclub, located northerly of 62nd Avenue, westerly of Polk Street, easterly of Tyler Street, and southerly of Avenue 60. The site is located within Airport Compatibility Zone D of the Jacqueline Cochran Regional Airport Influence Area (AIA). Within Compatibility Zone D of the Jacqueline Cochran Regional Airport Land Use Compatibility Plan, residential density is restricted to either 0.2 dwelling units per acre, or above 5 dwelling units per acre. The proposed rooftop solar panels will not generate any density.

The elevation at the southerly end of Runway 17-35 at Jacqueline Cochran Regional Airport is 137.5 feet below mean sea level (-137.5 feet above mean sea level [AMSL]). At a distance of 4,170 feet from the runway to the project, Federal Aviation Administration Obstruction Evaluation Services (FAA OES) review would be required for any structures with a top of roof exceeding -95.8 feet above mean sea level. The site's elevation is -144 feet AMSL and the proposed building height (with rooftop solar panels) is 31 feet, resulting in a top point elevation of -113 feet AMSL. Therefore, review by the FAA Obstruction Evaluation Service was not required. The height of the proposed solar panels will not significantly increase the overall height of the building.

Based on the Federal Aviation Administration's Interim Policy for Review of Solar Energy System Projects on Federally Obligated Airports, no glare potential or low potential for temporary after-image ("green" level) are acceptable levels of glare on final approach (within 2 miles from end of runway) for solar facilities located on airport property and is the recommended standard for properties near airports. However, potential for temporary after-image ("yellow" level) and potential for permanent eye damage ("red" level) are not acceptable levels of glare on final approach. No glare is permitted at air traffic control towers.

The project proposes 809 square feet of solar panels on a single family residence rooftop with a fixed tilt of 7 degrees with no rotation, and an orientation of 186 degrees. The solar glare study completed by Forge Solar was based on a 2 mile straight in approach (as per FAA Interim Policy Standards) to runways 17 and 35, and runways 12 and 30. Jacqueline Cochran Regional Airport does not have an air traffic control tower.

The analysis concluded that some potential glare would occur within the 2 mile approach to runway 30. (No glare is expected to occur within the 2 mile approach to runway 17-35). Evaluation of the approach indicates that the panels would result in low potential for temporary after-image ("green" level glare), totaling annually 1,717 minutes of "green" level glare, lasting up to 10 minutes a day between March and October from 6:00 p.m. to 7:00 p.m. (pacific daylight time). Overall, less than one percent of annual daylight time

would be affected. Glare from solar panels could potentially constitute a hazard to flight. However, based on the solar glare hazard analysis provided, the glare experienced would be an acceptable level for solar facilities on airports. Therefore, the hazard potential is low.

The applicant has indicated that they do not plan to utilize equipment that would interfere with aircraft communications. The PV panels themselves present little risk of interfering with radar transmission due to their low profiles. In addition, solar panels do not emit electromagnetic waves over distances that could interfere with radar signal transmissions, and any electrical facilities that do carry concentrated current will be buried beneath the ground and away from any signal transmission. There are no radar transmission or receiving facilities within the site.

ALUC Director Simon Housman issued a determination of consistency for this project on December 17, 2020.

ZAP1053TH20 (Jacqueline Cochran Regional Airport Zone C) pertains to County of Riverside Case No. BRS2002663 (Building Permit), a proposal to construct a 650 square foot rooftop solar panel system on a proposed single family residence located at 61197 Goodwood Drive within the Thermal Motorclub, located northerly of 62nd Avenue, westerly of Polk Street, easterly of Tyler Street, and southerly of Avenue 60. The site is located within Airport Compatibility Zone C of the Jacqueline Cochran Regional Airport Influence Area (AIA). Within Compatibility Zone C of the Jacqueline Cochran Regional Airport Land Use Compatibility Plan, residential density is restricted to a maximum of 0.2 dwelling units per acre. The proposed rooftop solar panels will not generate any density.

The elevation at the southerly end of Runway 17-35 at Jacqueline Cochran Regional Airport is 137.5 feet below mean sea level (-137.5 feet above mean sea level [AMSL]). At a distance of 4,220 feet from the runway to the project, Federal Aviation Administration Obstruction Evaluation Services (FAA OES) review would be required for any structures with a top of roof exceeding -95.3 feet above mean sea level. The site's elevation is -146 feet AMSL and the proposed building height (with rooftop solar panels) is 34 feet, resulting in a top point elevation of -112 feet AMSL. Therefore, review by the FAA Obstruction Evaluation Service was not required. The height of the proposed solar panels will not significantly increase the overall height of the building.

Based on the Federal Aviation Administration's Interim Policy for Review of Solar Energy System Projects on Federally Obligated Airports, no glare potential or low potential for temporary after-image ("green" level) are acceptable levels of glare on final approach (within 2 miles from end of runway) for solar facilities located on airport property and is the recommended standard for properties near airports. However, potential for temporary after-image ("yellow" level) and potential for permanent eye damage ("red" level) are not acceptable levels of glare on final approach. No glare is permitted at air traffic control towers.

The project proposes 650 square feet of solar panels on a single family residence rooftop with a fixed tilt of 7 degrees with no rotation, and an orientation of 168 degrees. The solar glare study completed by Forge Solar was based on a 2 mile straight in approach (as per FAA Interim Policy Standards) to runways 17 and 35, and runways 12 and 30. Jacqueline Cochran Regional Airport does not have an air traffic control tower.

The analysis concluded that some potential glare would occur within the 2 mile approach to runway 30. (No glare is expected to occur within the 2 mile approach to runway 17-35). Evaluation of the approach indicates that the panels would result in low potential for temporary after-image ("green" level glare),

totaling annually 1,679 minutes of “green” level glare, lasting up to 12 minutes a day between March and October from 5:30 p.m. to 7:00 p.m. (pacific daylight time). Overall, less than one percent of annual daylight time would be affected. Glare from solar panels could potentially constitute a hazard to flight. However, based on the solar glare hazard analysis provided, the glare experienced would be an acceptable level for solar facilities on airports. Therefore, the hazard potential is low.

The applicant has indicated that they do not plan to utilize equipment that would interfere with aircraft communications. The PV panels themselves present little risk of interfering with radar transmission due to their low profiles. In addition, solar panels do not emit electromagnetic waves over distances that could interfere with radar signal transmissions, and any electrical facilities that do carry concentrated current will be buried beneath the ground and away from any signal transmission. There are no radar transmission or receiving facilities within the site.

ALUC Director Simon Housman issued a determination of consistency for this project on December 17, 2020.

ZAP1054TH20 (Jacqueline Cochran Regional Airport Zone C) pertains to County of Riverside Case No. BRS2002448 (Building Permit), a proposal to construct a 500 square foot rooftop solar panel system on a proposed single family residence located at 86804 Rogers Way within the Thermal Motorclub, located northerly of 62nd Avenue, westerly of Polk Street, easterly of Tyler Street, and southerly of Avenue 60. The site is located within Airport Compatibility Zone C of the Jacqueline Cochran Regional Airport Influence Area (AIA). Within Compatibility Zone C of the Jacqueline Cochran Regional Airport Land Use Compatibility Plan, residential density is restricted to a maximum of 0.2 dwelling units per acre. The proposed rooftop solar panels will not generate any density.

The elevation at the southerly end of Runway 17-35 at Jacqueline Cochran Regional Airport is 137.5 feet below mean sea level (-137.5 feet above mean sea level [AMSL]). At a distance of 5,250 feet from the runway to the project, Federal Aviation Administration Obstruction Evaluation Services (FAA OES) review would be required for any structures with a top of roof exceeding -85 feet above mean sea level. The site’s elevation is -147.5 feet AMSL and the proposed building height (with rooftop solar panels) is 36 feet, resulting in a top point elevation of -111.5 feet AMSL. Therefore, review by the FAA Obstruction Evaluation Service was not required. The height of the proposed solar panels will not significantly increase the overall height of the building.

Based on the Federal Aviation Administration’s Interim Policy for Review of Solar Energy System Projects on Federally Obligated Airports, no glare potential or low potential for temporary after-image (“green” level) are acceptable levels of glare on final approach (within 2 miles from end of runway) for solar facilities located on airport property and is the recommended standard for properties near airports. However, potential for temporary after-image (“yellow” level) and potential for permanent eye damage (“red” level) are not acceptable levels of glare on final approach. No glare is permitted at air traffic control towers.

The project proposes 500 square feet of solar panels on a single family residence rooftop with a fixed tilt of 7 degrees with no rotation, and an orientation of 270 degrees. The solar glare study completed by Forge Solar was based on a 2 mile straight in approach (as per FAA Interim Policy Standards) to runways 17 and 35, and runways 12 and 30. Jacqueline Cochran Regional Airport does not have an air traffic control tower.

The analysis concluded that no glare would occur within the 2 mile approach to runways 17-35 and 12-30.

Evaluation of the approach indicates that the panels would result in zero potential for temporary after-image (“green” level glare). Glare from solar panels could potentially constitute a hazard to flight. However, based on the solar glare hazard analysis provided, the glare experienced (i.e. no glare) would be an acceptable level for solar facilities on airports. Therefore, the hazard potential is low.

The applicant has indicated that they do not plan to utilize equipment that would interfere with aircraft communications. The PV panels themselves present little risk of interfering with radar transmission due to their low profiles. In addition, solar panels do not emit electromagnetic waves over distances that could interfere with radar signal transmissions, and any electrical facilities that do carry concentrated current will be buried beneath the ground and away from any signal transmission. There are no radar transmission or receiving facilities within the site

ALUC Director Simon Housman issued a determination of consistency for this project on December 17, 2020.

5.2 Update March Air Reserve Base Compatibility Use Study (CUS)
Presentation by ALUC Director Simon Housman or his designee.

5.3 Video Presentation on Remotely Pilot Aircraft
Presentation by ALUC Director Simon Housman or his designee.



AIRPORT LAND USE COMMISSION RIVERSIDE COUNTY

December 17, 2020

CHAIR
Russell Betts
Desert Hot Springs

VICE CHAIR
Steven Stewart
Palm Springs

COMMISSIONERS

Arthur Butler
Riverside

John Lyon
Riverside

Steve Nanos
Lake Elsinore

Richard Stewart
Moreno Valley

Gary Youmans
Temecula

STAFF

Director
Simon A. Housman

Paul Ruff
Barbara Santos

County Administrative Center
4080 Lemon St., 14th Floor
Riverside, CA 92501
(951) 955-5132

www.caltrans.org

Mr. Rendell Klaarenbeek, Deputy Director
Riverside County Building and Safety Department
4080 Lemon Street, 12th Floor
Riverside CA 92501
(VIA HAND DELIVERY)

RE: AIRPORT LAND USE COMMISSION (ALUC) DEVELOPMENT REVIEW – DIRECTOR'S DETERMINATION

File No.: ZAP1052TH20
Related File No.: BRS2002397 (Building Permit)
APN: 759-280-009, 759-280-010

Dear Mr. Klaarenbeek:

Under the delegation of the Riverside County Airport Land Use Commission (ALUC) pursuant to Policy 1.5.2(d) of the Countywide Policies of the 2004 Riverside County Airport Land Use Compatibility Plan, staff reviewed Riverside County Building and Safety Case No. BRS2002397 (Building Permit), a proposal to construct a 809 square foot rooftop solar panel system on a proposed single family residence located at 61198 Goodwood Drive within the Thermal Motorclub, located northerly of 62nd Avenue, westerly of Polk Street, easterly of Tyler Street, and southerly of Avenue 60.

The site is located within Airport Compatibility Zone D of the Jacqueline Cochran Regional Airport Influence Area (AIA). Within Compatibility Zone D of the Jacqueline Cochran Regional Airport Land Use Compatibility Plan, residential density is restricted to either 0.2 dwelling units per acre, or above 5 dwelling units per acre. The proposed rooftop solar panels will not generate any density.

The elevation at the southerly end of Runway 17-35 at Jacqueline Cochran Regional Airport is 137.5 feet below mean sea level (-137.5 feet above mean sea level [AMSL]). At a distance of 4,170 feet from the runway to the project, Federal Aviation Administration Obstruction Evaluation Services (FAA OES) review would be required for any structures with a top of roof exceeding -95.8 feet above mean sea level. The site's elevation is -144 feet AMSL and the proposed building height (with rooftop solar panels) is 31 feet, resulting in a top point elevation of -113 feet AMSL. Therefore, review by the FAA Obstruction Evaluation Service was not required. The height of the proposed solar panels will not significantly increase the overall height of the building.

Based on the Federal Aviation Administration's Interim Policy for Review of Solar Energy System Projects on Federally Obligated Airports, no glare potential or low potential for temporary after-image ("green" level) are acceptable levels of glare on final approach (within 2

AIRPORT LAND USE COMMISSION

miles from end of runway) for solar facilities located on airport property and is the recommended standard for properties near airports. However, potential for temporary after-image” (“yellow” level) and potential for permanent eye damage (“red” level) are not acceptable levels of glare on final approach. No glare is permitted at air traffic control towers.

The project proposes 809 square feet of solar panels on a single family residence rooftop with a fixed tilt of 7 degrees with no rotation, and an orientation of 186 degrees. The solar glare study completed by Forge Solar was based on a 2 mile straight in approach (as per FAA Interim Policy Standards) to runways 17 and 35, and runways 12 and 30. Jacqueline Cochran Regional Airport does not have an air traffic control tower.

The analysis concluded that some potential glare would occur within the 2 mile approach to runway 30. (No glare is expected to occur within the 2 mile approach to runway 17-35). Evaluation of the approach indicates that the panels would result in low potential for temporary after-image (“green” level glare), totaling annually 1,717 minutes of “green” level glare, lasting up to 10 minutes a day between March and October from 6:00 p.m. to 7:00 p.m. (pacific daylight time). Overall, less than one percent of annual daylight time would be affected. Glare from solar panels could potentially constitute a hazard to flight. However, based on the solar glare hazard analysis provided, the glare experienced would be an acceptable level for solar facilities on airports. Therefore, the hazard potential is low.

The applicant has indicated that they do not plan to utilize equipment that would interfere with aircraft communications. The PV panels themselves present little risk of interfering with radar transmission due to their low profiles. In addition, solar panels do not emit electromagnetic waves over distances that could interfere with radar signal transmissions, and any electrical facilities that do carry concentrated current will be buried beneath the ground and away from any signal transmission. There are no radar transmission or receiving facilities within the site.

Conclusion: This approval applies to the installation of solar panels as submitted. Any change to the solar array would require ALUC review. All previously applied conditions of approval from the original Thermal Motorclub project (ZAP1017TH10) remain applicable.

As ALUC Director, I hereby find the above-referenced project **CONSISTENT** with the 2005 Jacqueline Cochran Regional Airport Land Use Compatibility Plan, as amended in 2006, provided that the County of Riverside applies the following recommended conditions:

1. The following uses shall be prohibited:
 - (a) Any use or activity which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.
 - (b) Any use or activity which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.

AIRPORT LAND USE COMMISSION

- (c) Any use or activity which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area.
 - (d) Any use or activity which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.
- 2. All solar arrays installed on the project site shall consist of smooth glass with anti-reflective coating, a fixed tilt of 7.0 degrees and orientation of 186 degrees. Solar panels shall be limited to a total of 809 square feet, and the locations and coordinates shall be as specified in the glare study. Any deviation from these specifications (other than reduction in square footage of panels), including change in tilt or orientation, shall require a new solar glare analysis to ensure that the amended project does not result in any glare impacting the air traffic control tower or creation of any "yellow" or "red" level glare in the flight paths, and shall require review by the Airport Land Use Commission.
- 3. In the event that any incidence of electrical interference affecting the safety of air navigation occurs as a result of project operation, upon notification to the airport operator of an incidence, the airport operator shall notify the project operator in writing. Within 30 days of written notice, the project operator shall be required to promptly take all measures necessary to eliminate such interference. An "incidence" includes any situation that results in an accident, incident, "near-miss," report by airport personnel, or specific safety complaint to the airport operator or to federal, state, or county authorities responsible for the safety of air navigation. The project operator shall work with the airport operator to prevent recurrence of the incidence. For each such incidence made known to the project operator, the necessary remediation shall only be considered to have been fulfilled when the airport operator states in writing that the situation has been remediated to the airport operator's satisfaction.
- 4. In the event that any incidence of glint, glare, or flash affecting the safety of air navigation occurs as a result of project operation, upon notification to the airport operator of an incidence, the airport operator shall notify the project operator in writing. Within 30 days of written notice, the project operator shall be required to promptly take all measures necessary to eliminate such glint, glare, or flash. An "incidence" includes any situation that results in an accident, incident, "near-miss," or specific safety complaint regarding an in-flight experience to the airport operator or to federal, state, or county authorities responsible for the safety of air navigation. The project operator shall work with the airport operator to prevent recurrence of the incidence. Suggested measures may include, but are not limited to, reprogramming the alignment of the panels, covering them at the time of day when incidences of glare occur, or wholly removing panels to diminish or eliminate the source of the glint, glare, or flash. For each such incidence made known to the project operator, the necessary remediation shall only be considered to have been fulfilled when the airport operator states in writing that the situation has been remediated to the airport operator's satisfaction.

If you have any questions, please contact Paul Rull, ALUC Principal Planner, at (951) 955-6893.

Sincerely,

AIRPORT LAND USE COMMISSION

RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

Simon A. Housman

Simon A. Housman, ALUC Director

Attachments: Notice of Airport in Vicinity

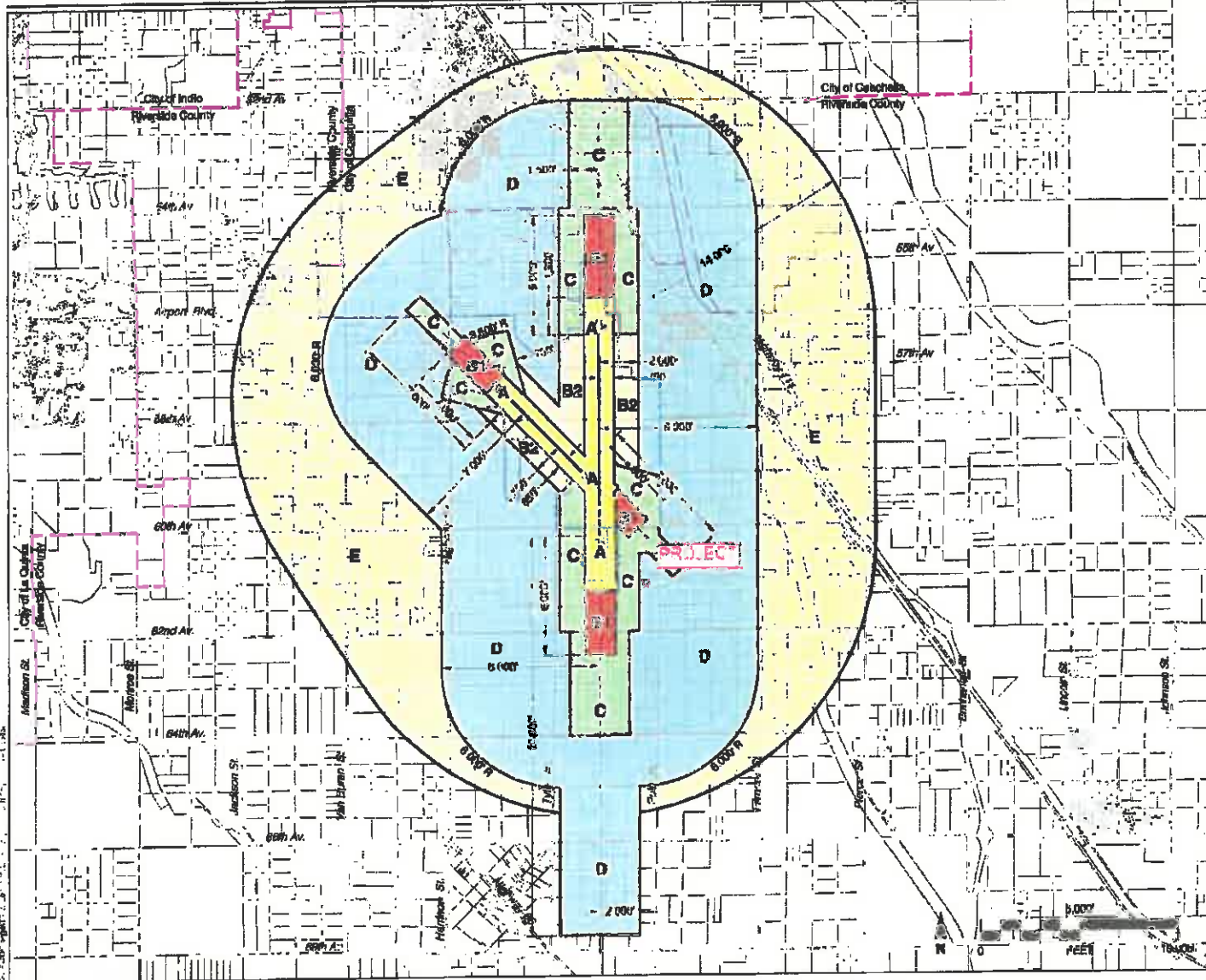
**cc: Fullerton Architects, P.C. (applicant/representative)
Yellow Horse LLC (property owner)
Michael Maldonado, Interim County Airports Manager
ALUC Case File**

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NOTICE OF AIRPORT IN VICINITY

This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances [can vary from person to person. You may wish to consider what airport annoyances], if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you. Business & Professions Code Section 11010 (b)

(13)(A)



Legend

Compatibility Zones

- Airport Influence Area Boundary
- Zone A
- Zone B1
- Zone B2
- Zone C
- Zone D
- Zone E

Boundary Lines

- Airport Property Line - Existing
- Airport Property Line - Planned
- City Limits

Note

Except for southern extension, Airport Influence Area boundary measured from a point 200 feet beyond runway ends in accordance with FAA airspace protection criteria (FAR Part 77). All other dimensions measured from runway ends and centerlines.

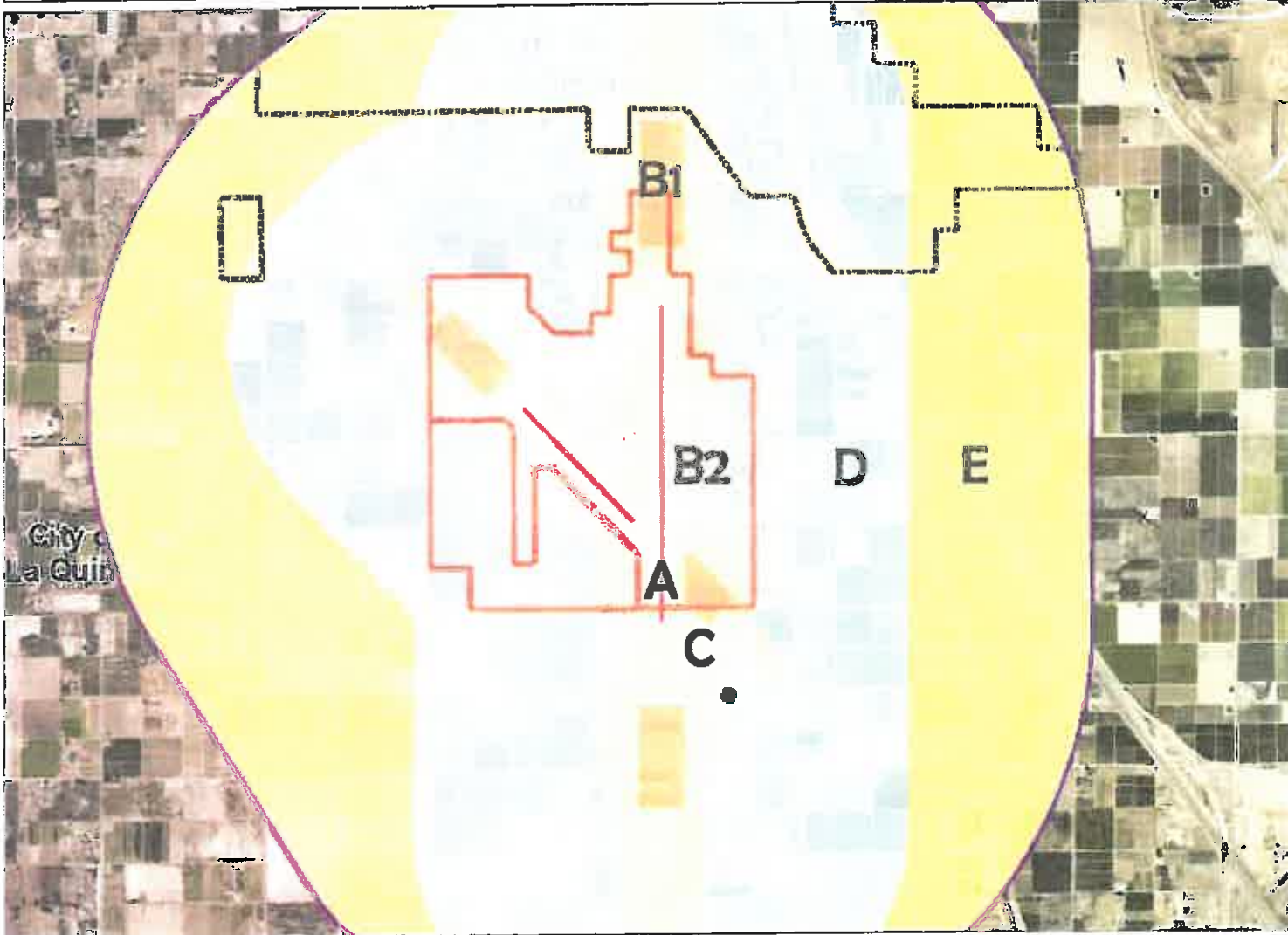
See Chapter 2, Table 2A for compatibility criteria associated with this map.

Riverside County
 Airport Land Use Commission
 Riverside County
 Airport Land Use Compatibility Plan
 Policy Document
 (Adopted June 2005)

Map JC-1

Compatibility Map
 Jacqueline Cochran Regional Airport

Map My County Map



Legend

- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones**
- OTHER COMPATIBILITY ZONE
- A
- A-EXC1
- B1
- B1-APZ I
- B1-APZ I-EXC1
- B1-APZ II
- B1-APZ II-EXC1
- B1-EXC1
- B2
- B2-EXC1
- C
- C1
- C1-EXC1
- C1-EXC3
- C1-EXC4
- C1-HIGHT
- C2
- C2-EXC1
- C2-EXC2
- C2-EXC3
- C2-EXC5
- C2-EXC6



"IMPORTANT" Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.



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Notes

Map My County Map



Legend

-  Parcels
-  County Centerline Names
-  County Centerlines
-  Blueline Streams
-  City Areas
-  World Street Map



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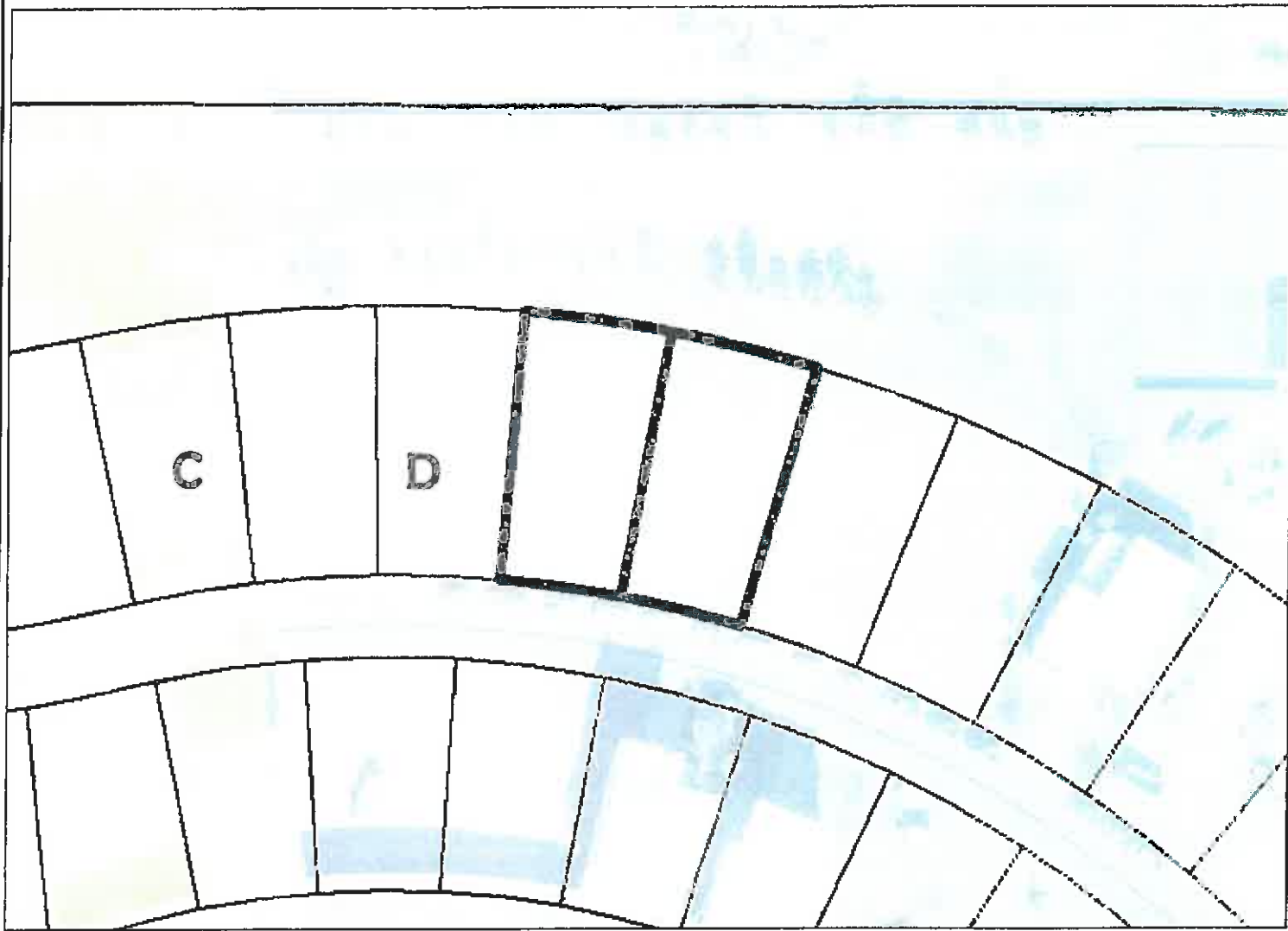
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Notes

Map My County Map



Legend

- Parcels
- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones**
- OTHER COMPATIBILITY ZONE
- A
- A-EXC1
- B1
- B1-APZ I
- B1-APZ I-EXC1
- B1-APZ II
- B1-APZ II-EXC1
- B1-EXC1
- B2
- B2-EXC1
- C
- C1
- C1-EXC1
- C1-EXC2
- C1-EXC4
- C1-HIGHT
- C2
- C2-EXC1
- C2-EXC2
- C2-EXC3
- C2-EXC5



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Notes

Map My County Map

Los Angeles



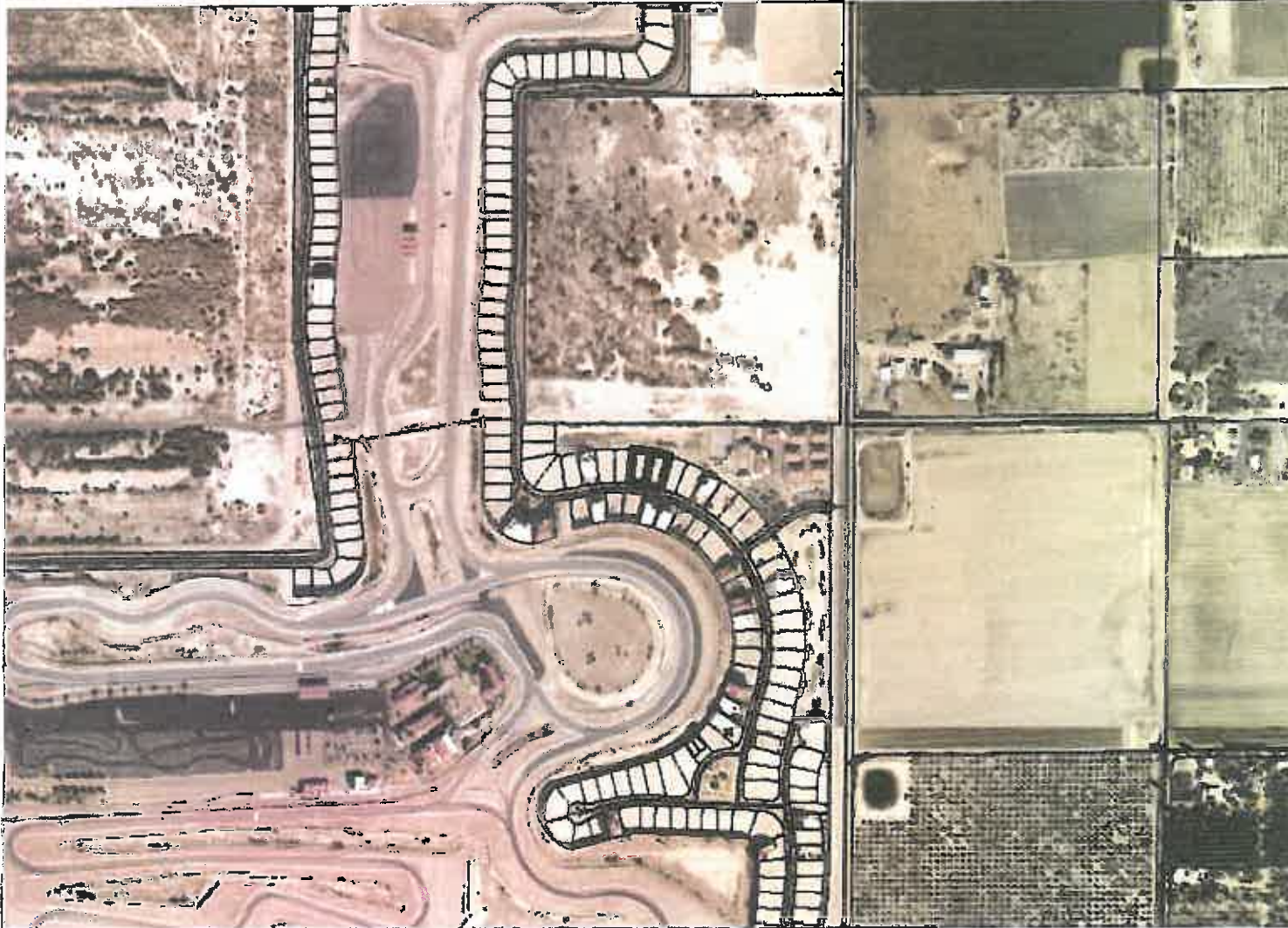
San Diego

Tijuana

Mexico

Legend

-  Parcel
-  County Centerlines
-  Blue Line Streams
-  City Areas
-  World Street Map



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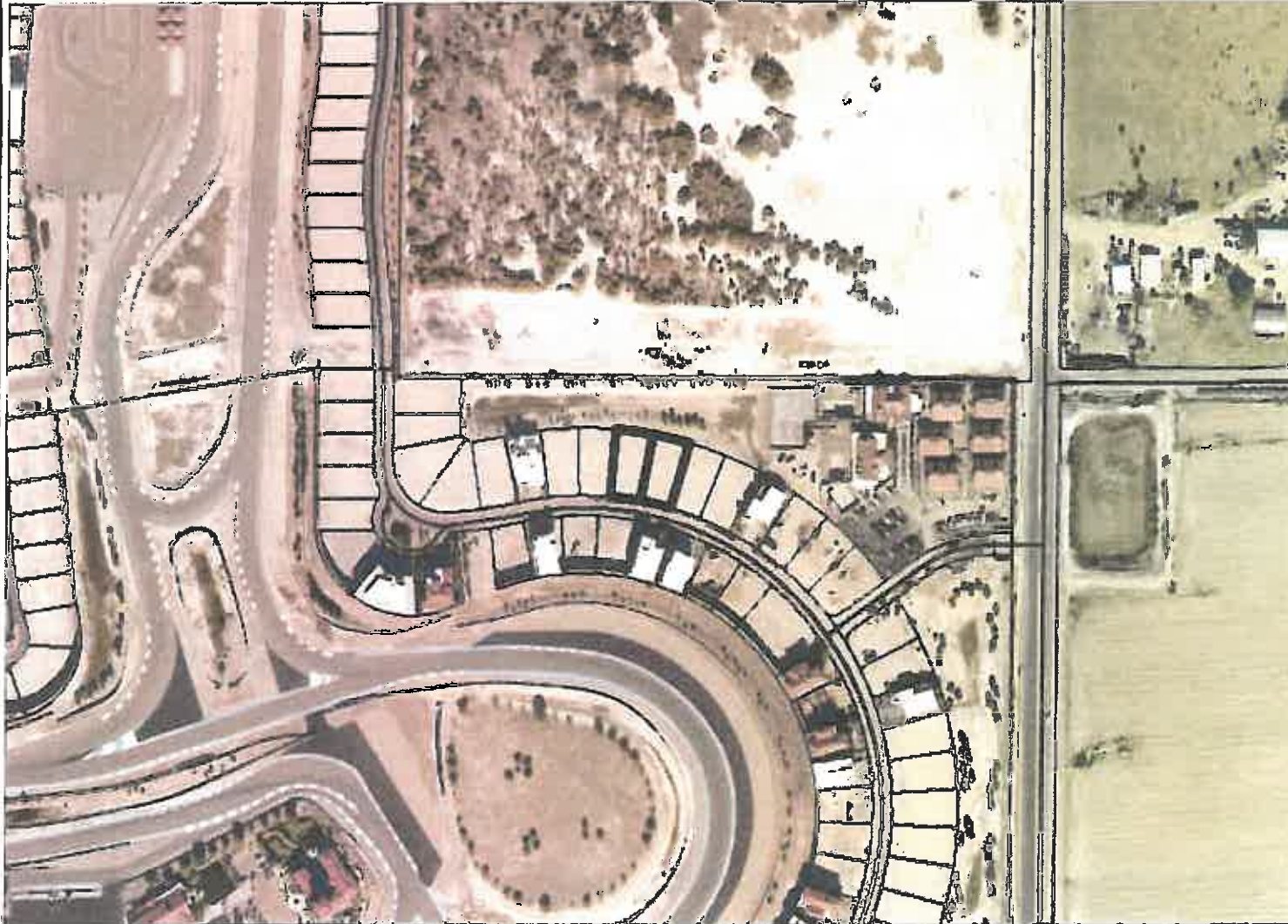
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Map My County Map



Legend

-  Parcels
-  County Centerlines
-  Blue Line Streams
-  City Areas
-  World Street Map



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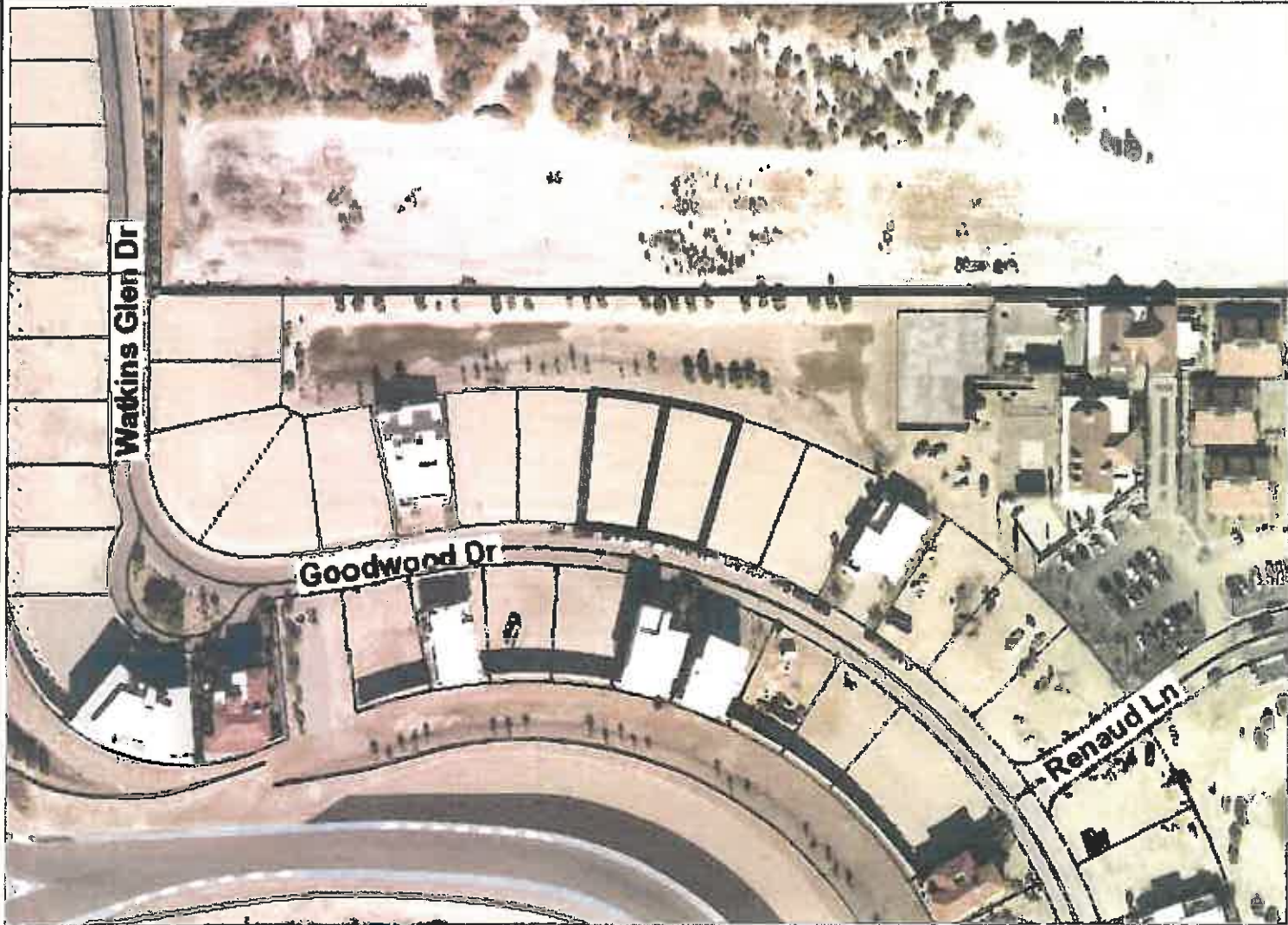
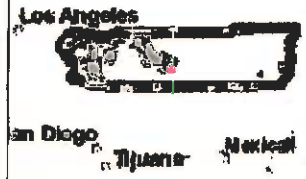
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Map My County Map



- ### Legend
- Parcels
 - County Centerline Names
 - County Centerlines
 - Blueline Streams
 - ▣ City Areas
 - World Street Map



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Notes

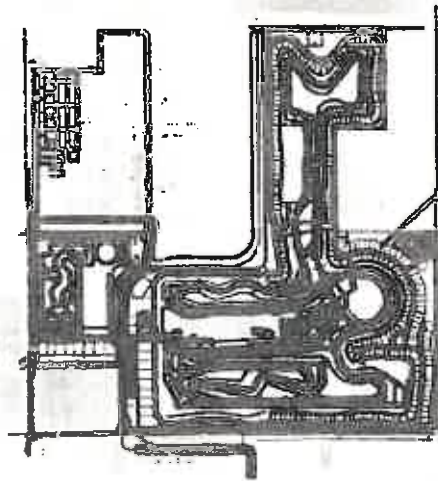


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**JACQUELINE
COCHRAN
AIRPORT**

**THERMAL
MOTORSPORTS**



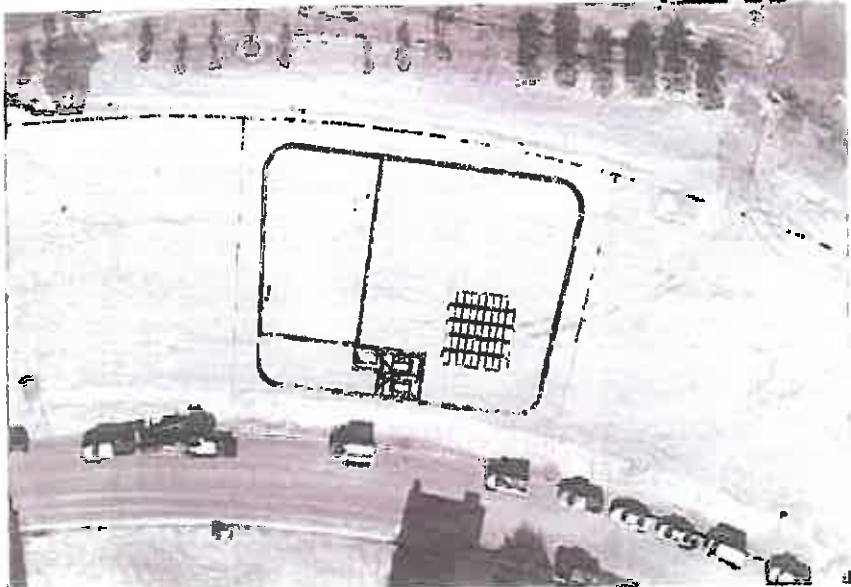
**LOTS
9A/10A**



PLAN NORTH



1 SITE PLAN
SCALE: 1" = 1500'



Michael Ramo *Michael Ramo*
 708.322.4433 L.C. No. 940950

810 N. Ferrel Drive
 Palm Springs, CA 92262
 (760) 322-4433 office
 License No. 142350
 info@hidPurpleEnergy.com
 www.hidPurpleEnergy.com

INTEGRATOR:



GENERAL NOTES:

1. ALL ELECTRICAL WORK TO BE INSTALLED BY A QUALIFIED LICENSED ELECTRICIAN AND APPRENTICES WORKING UNDER THE DIRECT SUPERVISION OF A LICENSED ELECTRICIAN.
2. ALL SOLAR MODULES SHALL BE UL LISTED 1703 AND CEC APPROVED. ALL INVERTERS SHALL BE UL LISTED 1741 SA CERTIFIED AND CEC APPROVED. ALL ELECTRICAL COMPONENTS AND MATERIALS SHALL BE LISTED AND APPROVED FOR ITS PURPOSE AND INSTALLED IN A WORKMAN LIKE MANNER. ALL OUTDOOR EQUIPMENT SHALL MEET APPROPRIATE NEMA STANDARDS.
3. THIS SYSTEM IS INTENDED TO BE OPERATED IN PARALLEL WITH THE UTILITY SERVICE PROVIDER. ANTI ISLANDING PROTECTION IS A REQUIREMENT OF UL1741 AND IS INTENDED TO PREVENT THE OPERATION OF THE PHOTOVOLTAIC SYSTEM WHEN THE UTILITY GRID IS NOT IN OPERATION.
4. PERMISSION TO OPERATE THE SYSTEM IS NOT AUTHORIZED UNTIL FINAL INSPECTIONS AND APPROVALS BY THE LOCAL AUTHORITY HAVING JURISDICTION AND THE LOCAL UTILITY SERVICE PROVIDER.
5. THE METHOD OF MOUNTING SHALL BE DONE IN ACCORDANCE WITH THE RACKING MANUFACTURER TO MEET DEAD LOAD, WIND LOAD, AND SEISMIC REQUIREMENTS. PHOTOVOLTAIC MODULES WILL BE SECURED AND MOUNTED ON THE ROOF AS SPECIFIED ON THE STRUCTURAL SHEETS. EXISTING ROOF EQUIPMENT WILL NOT BE EFFECTED BY THE PHOTOVOLTAIC SYSTEM OR INSTALLATION.
6. ALL FASTENERS SHALL BE CORROSION RESISTANT APPROPRIATE FOR THE SITE CONDITIONS.
7. ALL ROOFING REPAIRS MUST MAINTAIN EXISTING CLASS AND TYPE OF ROOF AND ALL WORK SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURERS INSTALLATION REQUIREMENTS.
8. TO BE INSTALLED IN SUCH A MANNER THAT IS DISCREET AND DOES NOT DETRACT FROM THE HOMES ARCHITECTURE

DESCRIPTION OF WORK:

ROOF MOUNTED PHOTOVOLTAIC (SOLAR ELECTRIC) INSTALLATION TILT MOUNTED @ 7° FACING AN AZIMUTH OF 186° CONSISTING OF (45) REC 320 WATT MODULES (14.4 Kw).
 RACK MOUNTING SYSTEM IS UNIRAC SOLARMOUNT ALUMINUM SUPPORT RAILS AND FAST JACK SOLAR STANCHIONS.

INSTALLATION SHALL COMPLY WITH THE FOLLOWING CODES:

CEC 2019 - ARTICLE 690, 705, 706 AND OTHERS
 CPC 2019
 CBC 2019
 OMC 2019
 CFC 2019

DRAWING SHEETS:

COVER SHEET PV-0.0
 SITE PLAN PV-1.0
 ROOF PLAN PV-2.0
 SINGLE LINE DIAGRAM PV-3.0
 MOUNTING DETAIL PV-4.0
 WARNING LABELING PV-5.0

SPECIFICATION SHEETS:

MODULE AND INVERTERS
 UNIRAC CERTIFICATION

Cue Residence
COVER SHEET
 61198 Goodwood Dr
 Thermal, CA 92274

Drawn by: **MJR**

Checked by: **SF**

Date: **9/29/2020**

Scale: **NTS**

Job Number: **20289**

Sheet Number:

PV-0.0

Sheet

For Photovoltaic arrays occupying not more than 33 percent of the plan view total roof area, not less than 18" clear set back is required on both sides of a horizontal ridge. For Photovoltaic arrays occupying more than 33 percent of the plan view total roof area, not less than 36" clear set back is required on both sides of a horizontal ridge. CRC R324.8.2

Not less than two minimum 36" wide pathways on separate roof planes, from lowest roof edge to ridge, shall be provided on all buildings. At least one pathway shall be provided on the street or driveway side of the roof. CRC R324.8.1

Designation of ridge, hip, and valley does not apply to roofs with 2-in-12 or less pitch.

SITE PLAN KEYNOTE:

EXISTING ELECTRICAL

- 1.1 UTILITY METER
- 1.2 CT CABINET
- 1.3 600A UTILITY DISCONNECT
- 1.4 (INSIDE GARAGE)
600A 208V 3 @ MAIN SERVICE PANEL

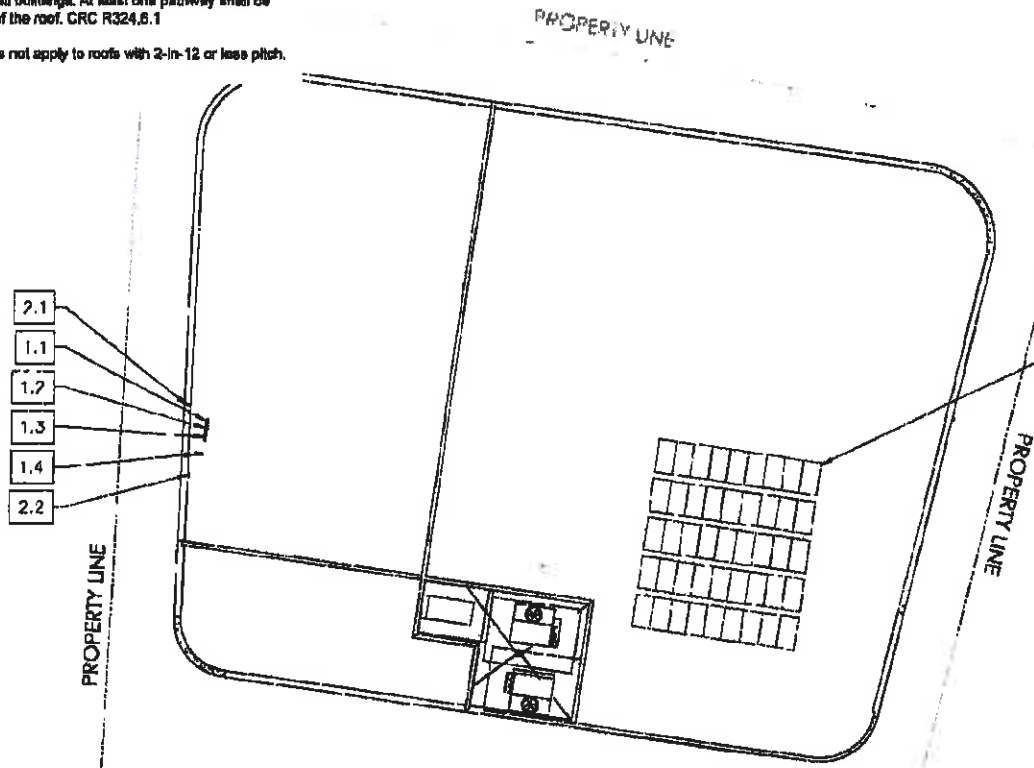
**NEW ELECTRICAL
(ADJACENT TO METER)**

- 2.1 60A PV SYSTEM AC DISCONNECT

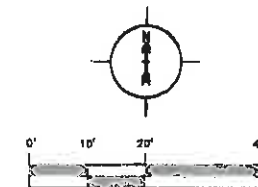
**NEW ELECTRICAL
(INSIDE GARAGE)**

- 2.2 SE144KUS PV INVERTER

(45) REC 320 WATT SO: AR
PANELS ARE SHOWN



GOODWOOD DRIVE



Revisions:	Date:

Michael Energy Michael Energy
760.562.4422 Lic. No. 949560

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www.HotPurpleEnergy.com

INTEGRATOR:



Title:
**Cue Residence
SITE PLAN**
61198 Goodwood Dr
Thermal, CA 92274

Drawn by: **MJR**

Checked by: **SF**

Date: **9/29/2020**

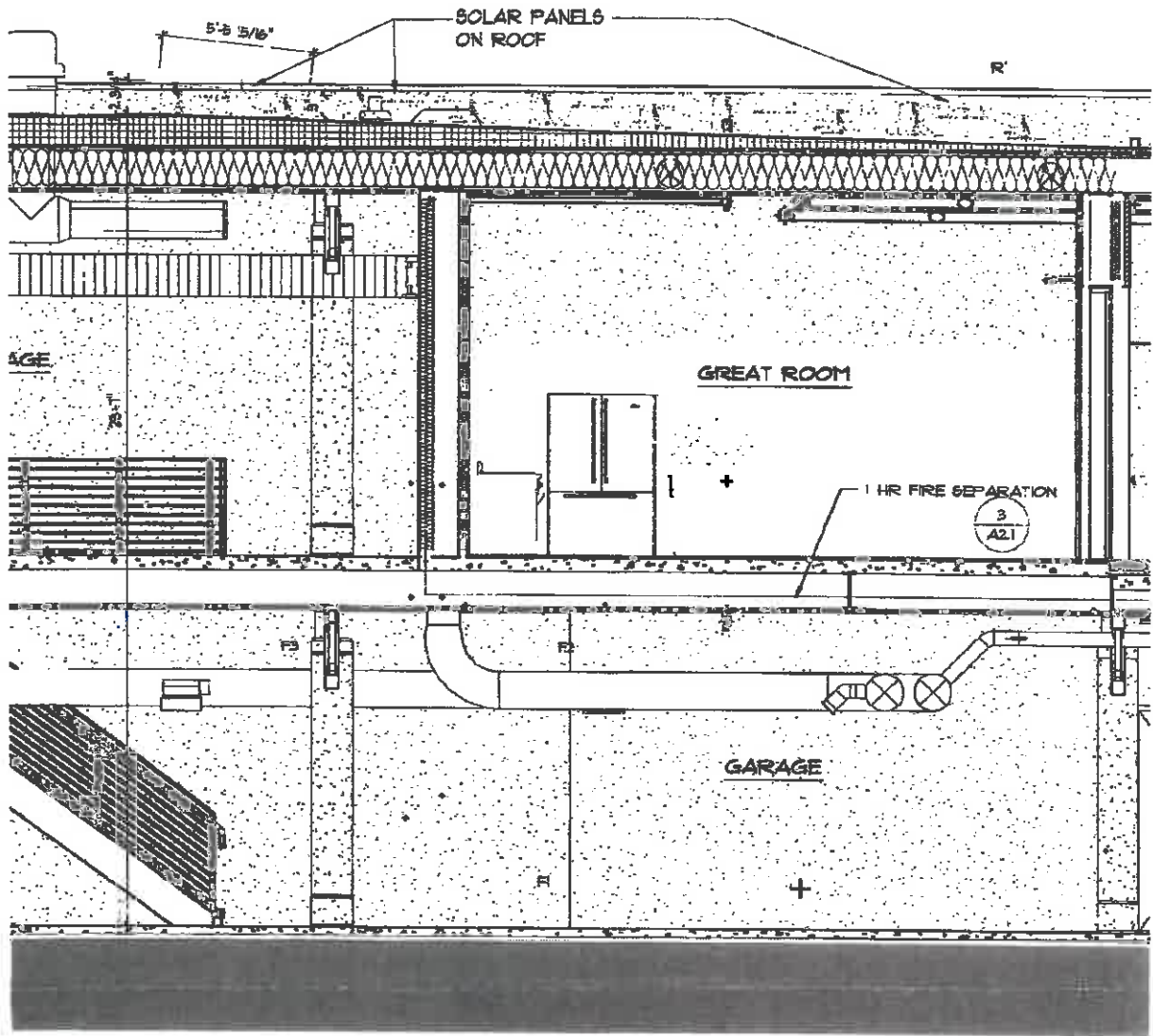
Scale: **1" = 20'**

Job Number: **20269**

Sheet Number:

PV-1.0

Sheet



1 PARTIAL BUILDING SECTION
 SCALE: 1/4" = 1'-0"

THERMAL MOTORSPORTS - LOTS 9A/1CA



FORGESOLAR GLARE ANALYSIS

Project: Riverside Co Residential

Four rooftop PV arrays near KTRM airport, Thermal CA

Site configuration: All 4 homes-temp-0

Analysis conducted by Dave Belote (dave@darestrategies.com) at 21:15 on 15 Dec, 2020.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63278. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63278 can be read at <https://www.federalregister.gov/d/2013-24729>

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m²
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 47169.8001



PV Array(s)

Name: 61197 Goodwood
Axis tracking: Fixed (no rotation)
Tilt: 7.0°
Orientation: 168.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.804871	-118.150223	-146.89	33.98	-112.91
2	33.804697	-118.150088	-145.48	33.98	-111.51
3	33.804640	-118.150073	-144.68	33.98	-110.70
4	33.804617	-118.150217	-146.61	33.98	-112.63

Name: 61198 Goodwood
Axis tracking: Fixed (no rotation)
Tilt: 7.0°
Orientation: 186.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.605040	-116.149252	-145.53	30.81	-114.72
2	33.605130	-116.149232	-146.18	30.81	-115.35
3	33.605116	-116.149150	-147.62	30.81	-116.81
4	33.605024	-116.149169	-146.80	30.81	-115.98

Name: 86804 Rogers Way
Axis tracking: Fixed (no rotation)
Tilt: 7.0°
Orientation: 270.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.599143	-116.150041	-146.57	36.25	-110.31
2	33.599018	-116.150041	-147.30	36.25	-111.05
3	33.599020	-116.149994	-146.97	36.25	-110.72
4	33.599048	-116.149994	-146.59	36.25	-110.33
5	33.599048	-116.150009	-146.82	36.25	-110.56
6	33.599144	-116.150010	-145.89	36.25	-109.74

Name: 86614 Newton Way

Axis tracking: Fixed (no rotation)

Tilt: 8.0°

Orientation: 165.0°

Rated power: -

Panel material: Smooth glass with AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.601662	-116.150329	-148.16	38.65	-109.51
2	33.601700	-116.150146	-148.42	38.65	-109.77
3	33.601666	-116.150136	-148.52	38.65	-110.87
4	33.601627	-116.150317	-148.15	38.65	-110.50

Flight Path Receptor(s)

Name: Rwy 12

Description:

Threshold height: 50 ft

Direction: 185.0°

Glide slope: 3.0°

Pilot view restricted? Yes

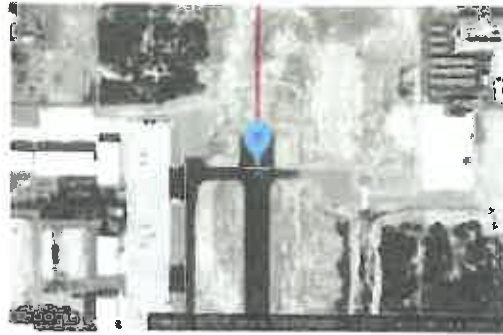
Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.630163	-116.171005	-117.94	50.00	-67.94
Two-mile	33.650628	-116.195587	-80.78	566.30	485.52

Name: Rwy 17
Description:
Threshold height: 50 ft
Direction: 180.2°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 60.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.639142	-116.156425	-115.33	50.00	-65.33
Two-mile	33.668054	-116.156286	-91.22	579.35	488.12

Name: Rwy 30
Description:
Threshold height: 50 ft
Direction: 315.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.620459	-116.156390	-132.30	50.00	-82.30
Two-mile	33.600014	-116.134810	-157.22	628.39	471.16

Name: Rwy 35
Description:
Threshold height: 50 ft
Direction: 0.2°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.615802	-116.156431	-139.07	50.00	-89.06
Two-mile	33.586890	-116.156552	-156.01	620.40	464.39

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt	Orient	"Green" Glare	"Yellow" Glare	Energy
	(°)	(°)	min	min	kWh
61197 Goodwood	7.0	168.0	1,679	0	0.00
61198 Goodwood	7.0	186.0	1,717	0	0.00
86804 Rogers Way	7.0	270.0	0	0	0.00
86814 Newton Way	8.0	165.0	762	0	0.00

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	4156	0
Rwy 35	0	0

Results for: 61197 Goodwood

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	1679	0
Rwy 35	0	0

Flight Path: Rwy 12

0 minutes of yellow glare

0 minutes of green glare

Flight Path: Rwy 17

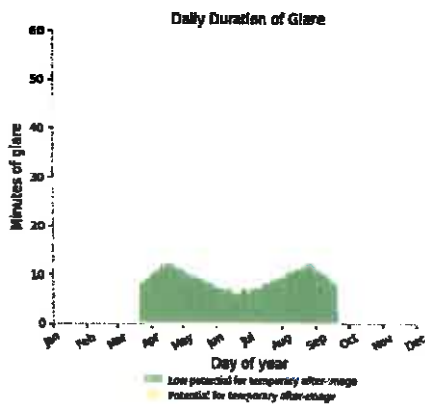
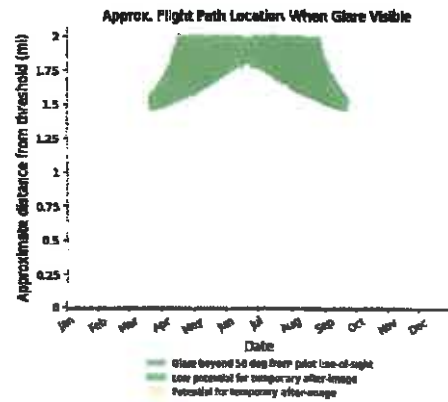
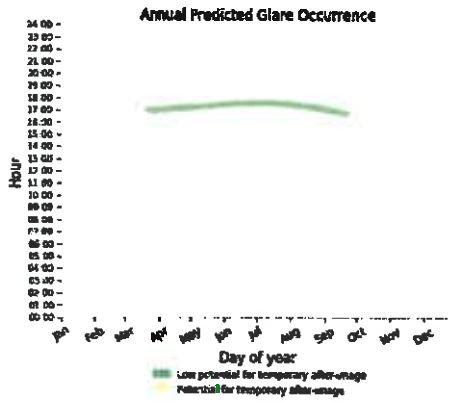
0 minutes of yellow glare

0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare

1678 minutes of green glare



Flight Path: Rwy 35

0 minutes of yellow glare

0 minutes of green glare



Results for: 61198 Goodwood

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	1717	0
Rwy 35	0	0

Flight Path: Rwy 12

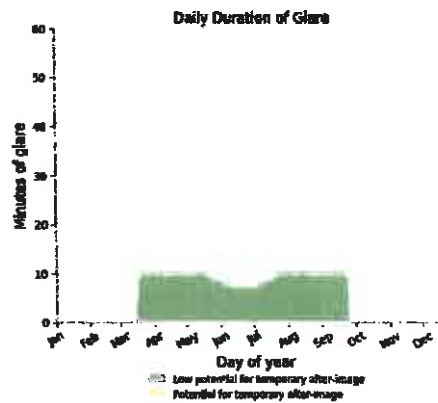
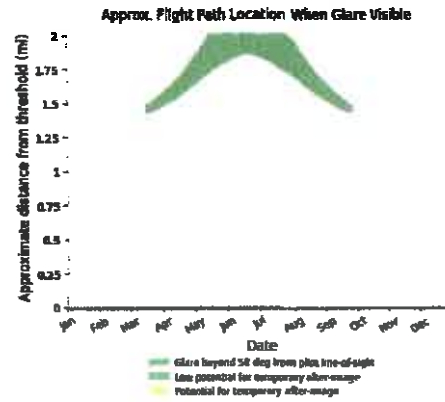
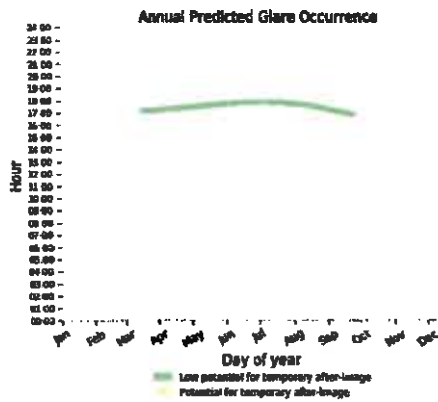
0 minutes of yellow glare
 0 minutes of green glare

Flight Path: Rwy 17

0 minutes of yellow glare
 0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare
 1717 minutes of green glare



Flight Path: Rwy 35

0 minutes of yellow glare
 0 minutes of green glare

Results for: 86804 Rogers Way

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	0	0
Rwy 35	0	0

Flight Path: Rwy 12

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 17

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 35

0 minutes of yellow glare
0 minutes of green glare

Results for: 86814 Newton Way

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	762	0
Rwy 35	0	0

Flight Path: Rwy 12

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 17

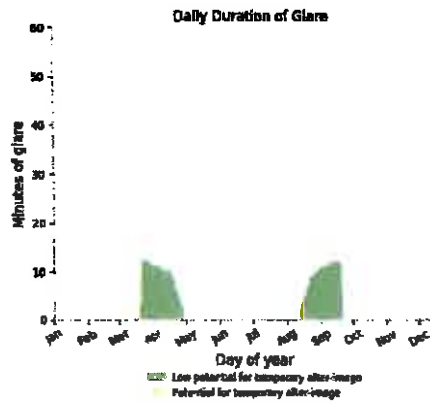
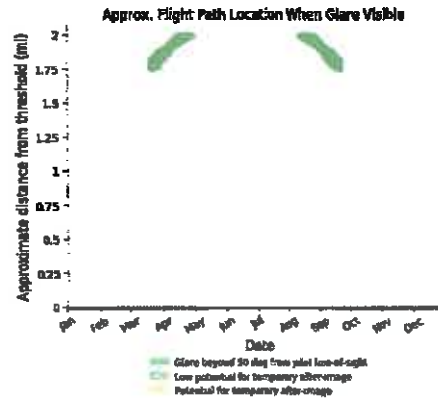
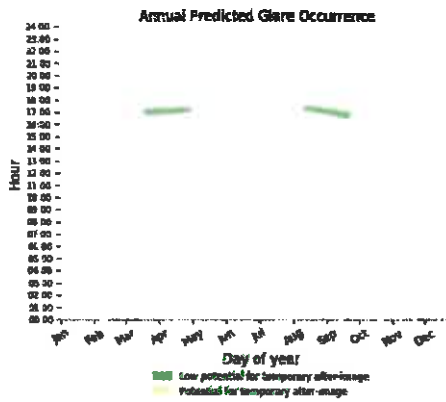
0 minutes of yellow glare

0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare

762 minutes of green glare



Flight Path: Rwy 35

0 minutes of yellow glare

0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Refer to the Help page at www.forgesolar.com/help/ for assumptions and limitations not listed here.

PAGE BREAK





AIRPORT LAND USE COMMISSION RIVERSIDE COUNTY

December 17, 2020

CHAIR
Russell Betts
Desert Hot Springs

VICE CHAIR
Steven Stewart
Palm Springs

COMMISSIONERS

Arthur Butler
Riverside

John Lyon
Riverside

Steve Manoa
Lake Elsinore

Richard Stewart
Moreno Valley

Gary Youmans
Temecula

STAFF

Director
Simon A. Houseman

Paul Rull
Barbara Santos

County Administrative Center
4080 Lemon St., 14th Floor
Riverside, CA 92501
(951) 955-6132

www.realuc.org

Mr. Rendell Klaarenbeek, Deputy Director
Riverside County Building and Safety Department
4080 Lemon Street, 12th Floor
Riverside CA 92501
(VIA HAND DELIVERY)

**RE: AIRPORT LAND USE COMMISSION (ALUC) DEVELOPMENT REVIEW –
DIRECTOR’S DETERMINATION**

File No.: ZAP1053TH20
Related File No.: BRS2002663 (Building Permit)
APN: 759-230-019

Dear Mr. Klaarenbeek:

Under the delegation of the Riverside County Airport Land Use Commission (ALUC) pursuant to Policy 1.5.2(d) of the Countywide Policies of the 2004 Riverside County Airport Land Use Compatibility Plan, staff reviewed Riverside County Building and Safety Case No. BRS2002663 (Building Permit), a proposal to construct a 650 square foot rooftop solar panel system on a proposed single family residence located at 61197 Goodwood Drive within the Thermal Motorclub, located northerly of 62nd Avenue, westerly of Polk Street, easterly of Tyler Street, and southerly of Avenue 60.

The site is located within Airport Compatibility Zone C of the Jacqueline Cochran Regional Airport Influence Area (AIA). Within Compatibility Zone C of the Jacqueline Cochran Regional Airport Land Use Compatibility Plan, residential density is restricted to a maximum of 0.2 dwelling units per acre. The proposed rooftop solar panels will not generate any density.

The elevation at the southerly end of Runway 17-35 at Jacqueline Cochran Regional Airport is 137.5 feet below mean sea level (-137.5 feet above mean sea level [AMSL]). At a distance of 4,220 feet from the runway to the project, Federal Aviation Administration Obstruction Evaluation Services (FAA OES) review would be required for any structures with a top of roof exceeding -95.3 feet above mean sea level. The site’s elevation is -146 feet AMSL and the proposed building height (with rooftop solar panels) is 34 feet, resulting in a top point elevation of -112 feet AMSL. Therefore, review by the FAA Obstruction Evaluation Service was not required. The height of the proposed solar panels will not significantly increase the overall height of the building.

Based on the Federal Aviation Administration’s Interim Policy for Review of Solar Energy System Projects on Federally Obligated Airports, no glare potential or low potential for temporary after-image (“green” level) are acceptable levels of glare on final approach (within 2 miles from end of runway) for solar facilities located on airport property and is the recommended

AIRPORT LAND USE COMMISSION

standard for properties near airports. However, potential for temporary after-image" ("yellow" level) and potential for permanent eye damage ("red" level) are not acceptable levels of glare on final approach. No glare is permitted at air traffic control towers.

The project proposes 650 square feet of solar panels on a single family residence rooftop with a fixed tilt of 7 degrees with no rotation, and an orientation of 168 degrees. The solar glare study completed by Forge Solar was based on a 2 mile straight in approach (as per FAA Interim Policy Standards) to runways 17 and 35, and runways 12 and 30. Jacqueline Cochran Regional Airport does not have an air traffic control tower.

The analysis concluded that some potential glare would occur within the 2 mile approach to runway 30. (No glare is expected to occur within the 2 mile approach to runway 17-35). Evaluation of the approach indicates that the panels would result in low potential for temporary after-image ("green" level glare), totaling annually 1,679 minutes of "green" level glare, lasting up to 12 minutes a day between March and October from 5:30 p.m. to 7:00 p.m. (pacific daylight time). Overall, less than one percent of annual daylight time would be affected. Glare from solar panels could potentially constitute a hazard to flight. However, based on the solar glare hazard analysis provided, the glare experienced would be an acceptable level for solar facilities on airports. Therefore, the hazard potential is low.

The applicant has indicated that they do not plan to utilize equipment that would interfere with aircraft communications. The PV panels themselves present little risk of interfering with radar transmission due to their low profiles. In addition, solar panels do not emit electromagnetic waves over distances that could interfere with radar signal transmissions, and any electrical facilities that do carry concentrated current will be buried beneath the ground and away from any signal transmission. There are no radar transmission or receiving facilities within the site

Conclusion: This approval applies to the installation of solar panels as submitted. Any change to the solar array would require ALUC review. All previously applied conditions of approval from the original Thermal Motorclub project (ZAP1017TH10) remain applicable.

As ALUC Director, I hereby find the above-referenced project **CONSISTENT** with the 2005 Jacqueline Cochran Regional Airport Land Use Compatibility Plan, as amended in 2006, provided that the County of Riverside applies the following recommended conditions:

1. The following uses shall be prohibited:
 - (a) Any use or activity which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.
 - (b) Any use or activity which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.
 - (c) Any use or activity which would generate smoke or water vapor or which would

AIRPORT LAND USE COMMISSION

attract large concentrations of birds, or which may otherwise affect safe air navigation within the area.

- (d) Any use or activity which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.
2. All solar arrays installed on the project site shall consist of smooth glass with anti-reflective coating, a fixed tilt of 7.0 degrees and orientation of 168 degrees. Solar panels shall be limited to a total of 650 square feet, and the locations and coordinates shall be as specified in the glare study. Any deviation from these specifications (other than reduction in square footage of panels), including change in tilt or orientation, shall require a new solar glare analysis to ensure that the amended project does not result in any glare impacting the air traffic control tower or creation of any "yellow" or "red" level glare in the flight paths, and shall require review by the Airport Land Use Commission.
3. In the event that any incidence of electrical interference affecting the safety of air navigation occurs as a result of project operation, upon notification to the airport operator of an incidence, the airport operator shall notify the project operator in writing. Within 30 days of written notice, the project operator shall be required to promptly take all measures necessary to eliminate such interference. An "incidence" includes any situation that results in an accident, incident, "near-miss," report by airport personnel, or specific safety complaint to the airport operator or to federal, state, or county authorities responsible for the safety of air navigation. The project operator shall work with the airport operator to prevent recurrence of the incidence. For each such incidence made known to the project operator, the necessary remediation shall only be considered to have been fulfilled when the airport operator states in writing that the situation has been remediated to the airport operator's satisfaction.
4. In the event that any incidence of glint, glare, or flash affecting the safety of air navigation occurs as a result of project operation, upon notification to the airport operator of an incidence, the airport operator shall notify the project operator in writing. Within 30 days of written notice, the project operator shall be required to promptly take all measures necessary to eliminate such glint, glare, or flash. An "incidence" includes any situation that results in an accident, incident, "near-miss," or specific safety complaint regarding an in-flight experience to the airport operator or to federal, state, or county authorities responsible for the safety of air navigation. The project operator shall work with the airport operator to prevent recurrence of the incidence. Suggested measures may include, but are not limited to, reprogramming the alignment of the panels, covering them at the time of day when incidences of glare occur, or wholly removing panels to diminish or eliminate the source of the glint, glare, or flash. For each such incidence made known to the project operator, the necessary remediation shall only be considered to have been fulfilled when the airport operator states in writing that the situation has been remediated to the airport operator's satisfaction.

If you have any questions, please contact Paul Rull, ALUC Principal Planner, at (951) 955-6893.

AIRPORT LAND USE COMMISSION

Sincerely,
RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

Simon A. Housman

Simon A. Housman, ALUC Director

Attachments: Notice of Airport in Vicinity

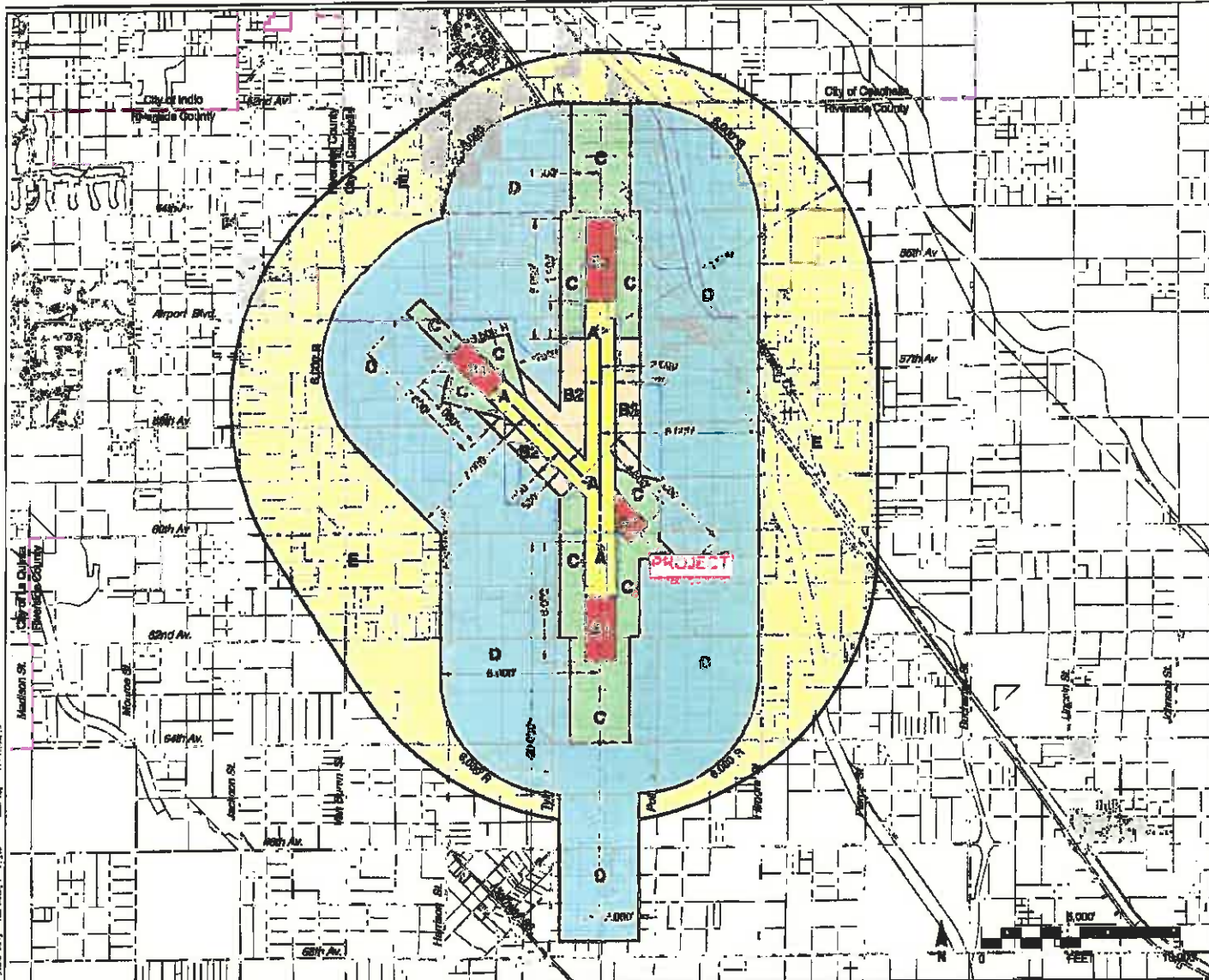
cc: Fullerton Architects, P.C. (applicant/representative)
JTM Land Co. (property owner)
Michael Maldonado, Interim County Airports Manager
ALUC Case File

Y:\AIRPORT CASE FILES\UCRA\ZAP1053TH20\ZAP1053TH20.LTR.doc

NOTICE OF AIRPORT IN VICINITY

This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances [can vary from person to person. You may wish to consider what airport annoyances], if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you. Business & Professions Code Section 11010 (b)

(13)(A)



Legend

Compatibility Zones

- Airport Influence Area Boundary
- Zone A
- Zone B1
- Zone B2
- Zone C
- Zone D
- Zone E

Boundary Lines

- Airport Property Line - Existing
- Airport Property Line - Planned
- City Limits

Note

Except for southern extension, Airport Influence Area boundary measured from a point 200 feet beyond runway ends in accordance with FAA airspace protection criteria (FAI Part 77). All other dimensions measured from runway ends and centerlines.

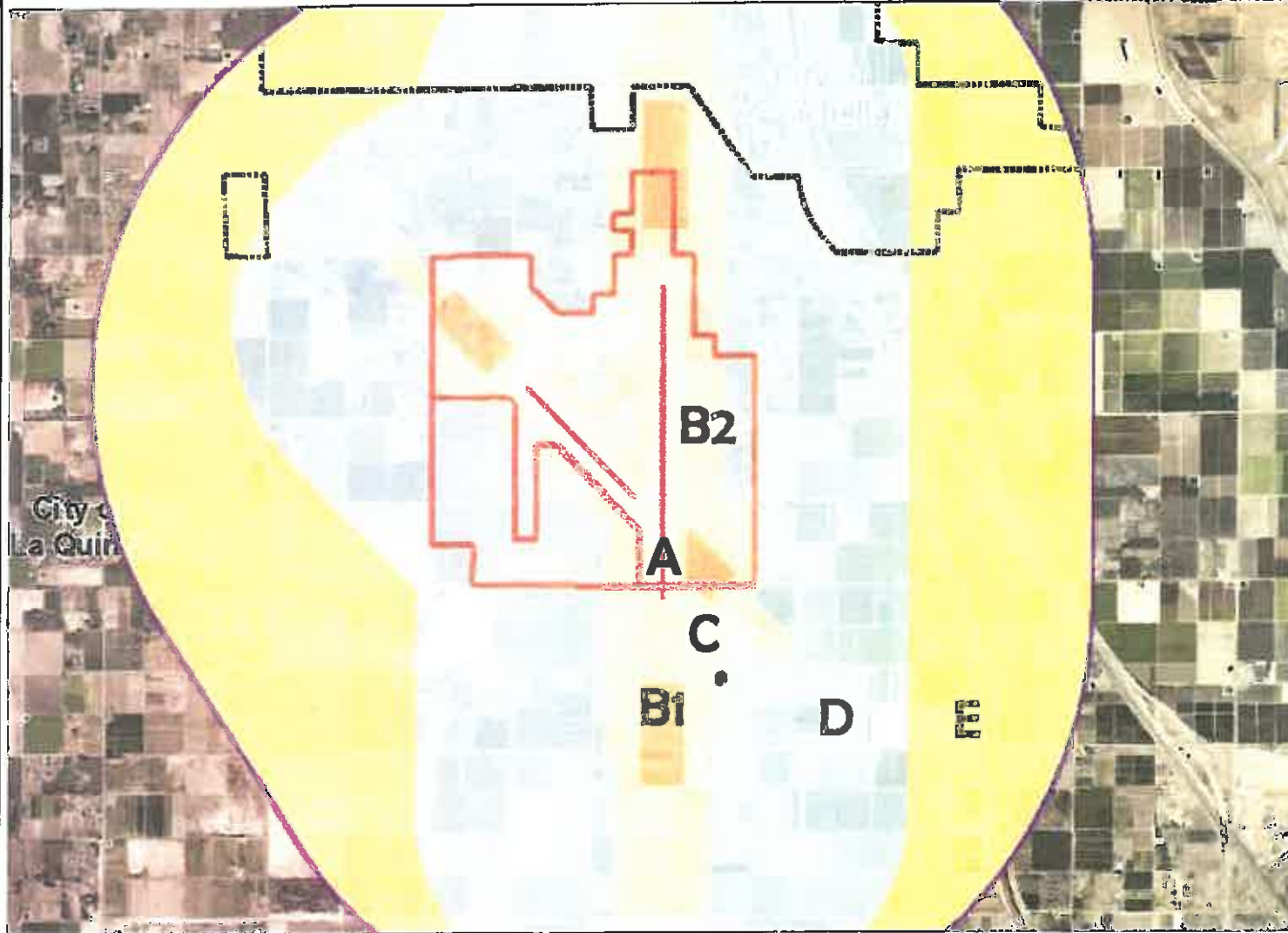
See Chapter 2, Table 2A for compatibility criteria associated with this map.

Riverside County
 Airport Land Use Commission
 Riverside County
 Airport Land Use Compatibility Plan
 Policy Document
 (Adopted June 2005)

Map JC-1

Compatibility Map
 Jacqueline Cochran Regional Airport

Map My County Map



Legend

- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones**
- OTHER COMPATIBILITY ZONE**
- A
- A-EXC1
- B1
- B1-APZ I
- B1-APZ I-EXC1
- B1-APZ II
- B1-APZ II-EXC1
- B1-EXC1
- B2
- B2-EXC1
- C
- C1
- C1-EXC1
- C1-EXC3
- C1-EXC4
- C1-HIGHT
- C2
- C2-EXC1
- C2-EXC2
- C2-EXC3
- C2-EXC6
- C2-EXC8



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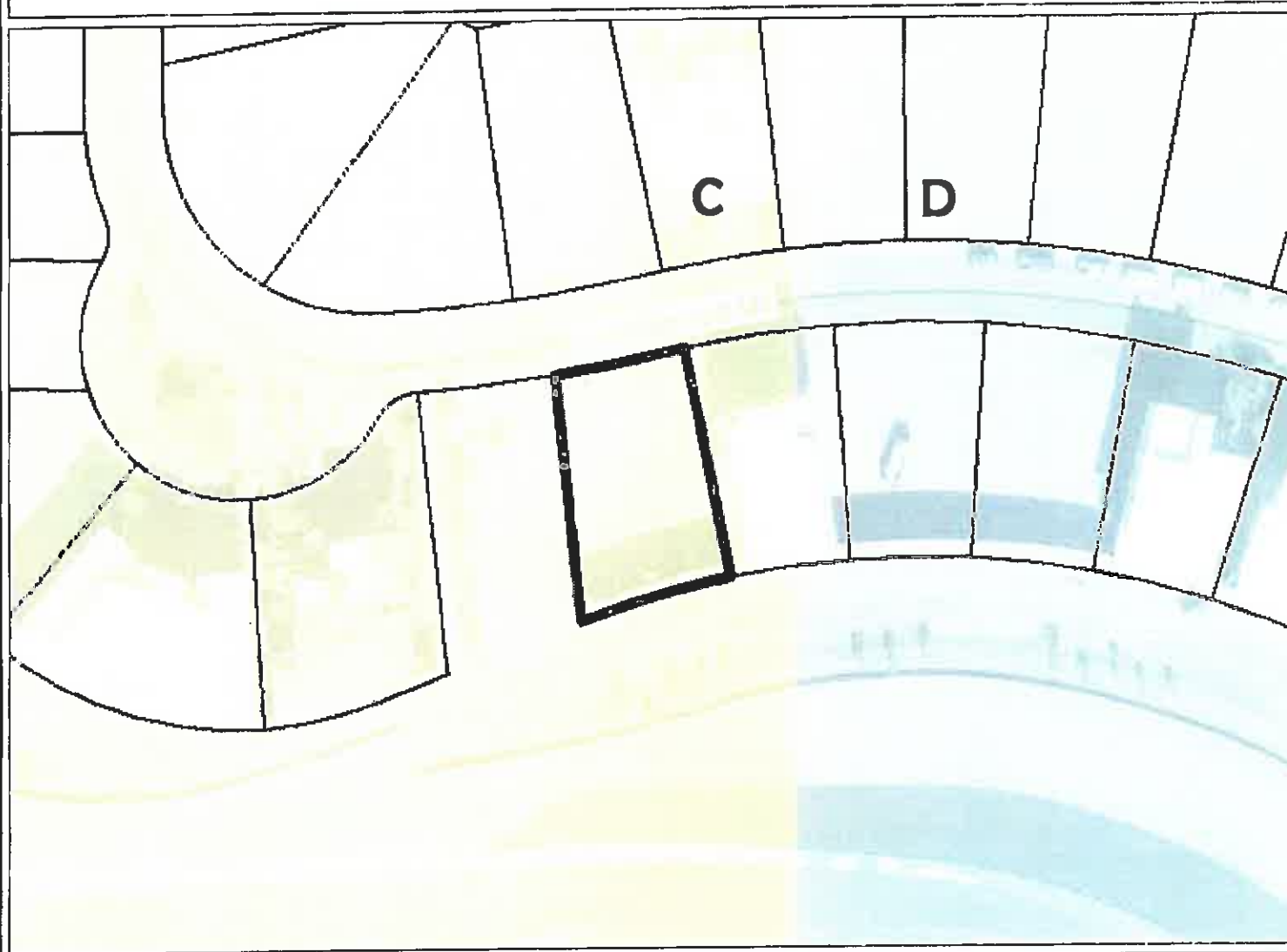
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Notes

Map My County Map



Legend

- Parcels
- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones**
- OTHER COMPATIBILITY ZONE**
- A
- A-EXC1
- B1
- B1-APZ I
- B1-APZ I-EXC1
- B1-APZ II
- B1-APZ II-EXC1
- B1-EXC1
- B2
- B2-EXC1
- C
- C1
- C1-EXC1
- C1-EXC3
- C1-EXC4
- C1-HIGHT
- C2
- C2-EXC1
- C2-EXC2
- C2-EXC3
- C2-EXC5



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Notes









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Map My County Map



- Legend**
-  Parcels
 -  County Centirline Names
 -  County Centirlines
 -  Blueline Streams
 -  City Areas
 -  World Street Map



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Notes

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Map My County Map

Los Angeles







San Diego

Phoenix

Mexicali

Legend

-  Parcels
-  County Centerlines
-  Blueline Streams
-  City Areas
-  World Street Map



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Notes

Map My County Map



Legend

- Parcels
- County Centerlines
- Blueline Streams
- City Areas
- World Street Map



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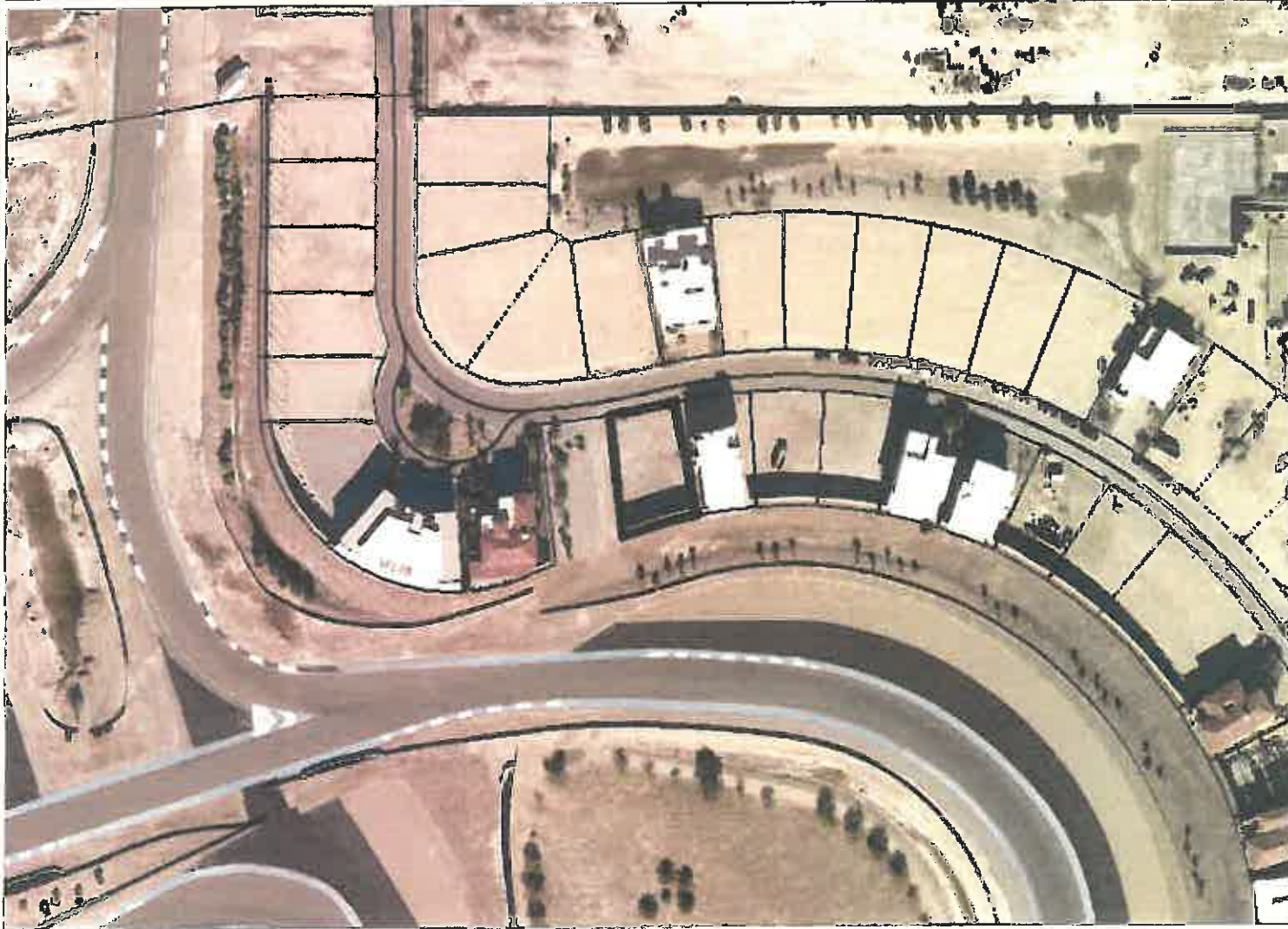
Notes

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Map My County Map



Legend

- Parcels
- County Centurlines
- Blueline Streams
- ▣ City Areas
- World Street Map



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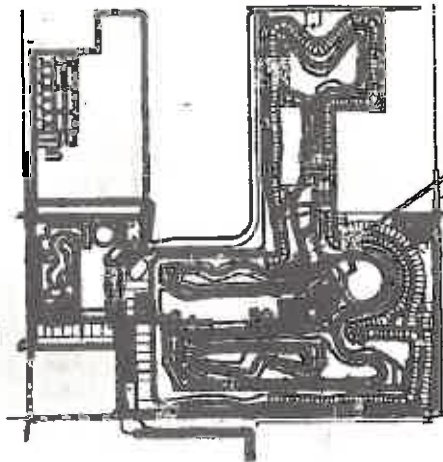
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Notes

**JACQUELINE
COCHRAN
AIRPORT**

**THERMAL
MOTORSPORTS**



0 50 100
FOOT FEET
PLAN NORTH-



1 SITE PLAN
SCALE: 1" = 150'

For Photovoltaic arrays occupying not more than 33 percent of the plan view total roof area, not less than 18" clear set back is required on both sides of a horizontal ridge.
 For Photovoltaic arrays occupying more than 33 percent of the plan view total roof area, not less than 36" clear set back is required on both sides of a horizontal ridge.
 CRC R324.6.2

Not less than two minimum 36" wide pathways on separate roof planes, from lowest roof edge to ridge, shall be provided on all buildings. At least one pathway shall be provided on the street or driveway side of the roof. CRC R324.8.1

Designation of ridge, hip, and valley does not apply to roofs with 2-in-12 or less pitch.

GOODWOOD DRIVE

[36] REC 320 WATT MODULES
11.52kW

- 1.1
- 2.1
- 2.2

SITE PLAN KEYNOTE

EXISTING ELECTRICAL

1.1 400A MAIN ELECTRICAL PANEL

NEW ELECTRICAL (ADJACENT TO MSP)

2.1 60A SYSTEM AC DISCONNECT

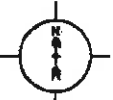
NEW ELECTRICAL (INSIDE EQUIPMENT ROOM)

2.2 SE11400H-US PV INVERTER

NOTE LEGEND

[Red dashed line] FR = FLASHING/ACCESS

[Red dashed line] EAVE SETBACK/WALL



Revisions:	Date:
Michael Rango	Michael Rango
752.322.4453	Lic. No. 690260
610 N. Farrell Drive Palm Springs, CA 92262 (760) 322-4433 office License No. 942240 Info@100PurpleEnergy.com www.100PurpleEnergy.com	
INTEGRATOR:	
LOT 82 SITE PLAN 61187 Goodwood Drive Thermal, CA 92274	
Drawn by:	MJR
Checked by:	BD
Date:	10-02-20
Scale:	1" = 15'
Job Number:	20291
Sheet Number:	PV-1.0
Sheet	

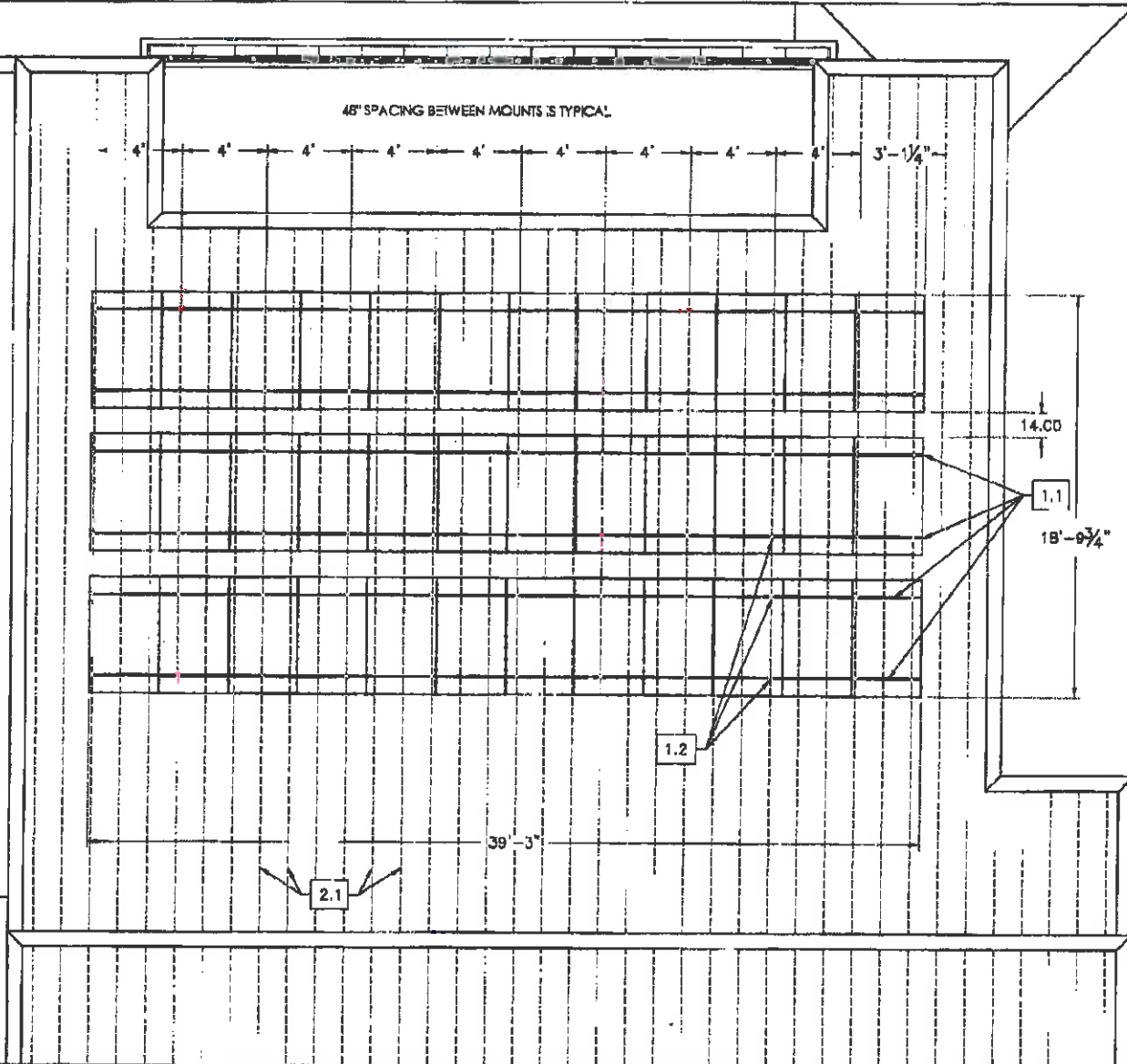
- VERIFY 66" LAG SPACING IN TRUSS TO BE BEFORE ATTACHING MOUNTS TO ROOF.
- ENSURE 3/8" MOUNTING LAGS PENETRATE CENTER OF RAFTER AND MAKE STRUCTURAL CONNECTION TO TRUSSESS.
- STRUCTURAL CONNECTION TO ENGINEERED TRUSS SHALL BE MADE BY 3/4" X 5/16" STAINLESS STEEL LAG SCREWS 3 MIN. EMBEDMENT.
- PHOTOVOLTAIC MODULES SHALL HAVE 1.0 MOUNTS (LAG SCREWS) PER PANEL.
- IF ROOF STRUCTURE IS FLAT 2X10 ENGINEERED TRUSS/JUST I F.O.C. TYP.
- IF ROOFING MATERIAL IS 1 LAYER OF TPO OVER 4 LAYERS OF 3/8" FELT PAPER AND 1/2" OSB PLYWOOD DECKING.
- MODULE DIMENSIONS 65.5" x 39.25"

WEIGHT LOAD ANALYSIS

MODULE WEIGHT	95.7 LBS
NO. OF MODULES	36
TOTAL WEIGHT OF MODULES	1469 LBS
TOTAL WEIGHT OF RACK SYS	545 LBS
TOTAL WEIGHT OF SOLAR ARRAY	1774 LBS
HEIGHT OF EACH MODULE	3.2 FEET
WIDTH OF EACH MODULE	3.5 FEET
AREA OF ONE MODULE	11.2 SQ FT
AREA OF ENTIRE SOLAR ARRAY	404.2 SQ FT
TOTAL DISTRIBUTED WEIGHT	2.7 LBS/SQ FT
NO. OF SOLAR SPANCHIONS	66
WEIGHT LOAD PER SPANCHION	41.7 LBS

MOUNT PLAN KEYNOTE:

- RACK MOUNT COMPONENTS**
- UNIRAC ALUMINUM SUPPORT BAR
 - FAST / RACK SOLAR SPANCHION
- STRUCTURAL**
- ROOF SUPPORTS SHD ENGINEERED TRUSS/JOB (18" O.C.)



Revised: _____ Date: _____

Michael Rango *Michael Rango*
780.432.4480 Lic. No. 040893

810 N. Farnell Drive
Palm Springs, CA 92262
(760) 322-4433 office
License No. 940036
info@HotPurpleEnergy.com
www.HotPurpleEnergy.com

INTEGRATOR:



Title:

LOT 82

ROOF PLAN

61197 Goodwood Drive
Thermal, CA 92274

Drawn by:

MJR

Checked by:

BD

Date:

10-02-20

Scale:

1" = 5'

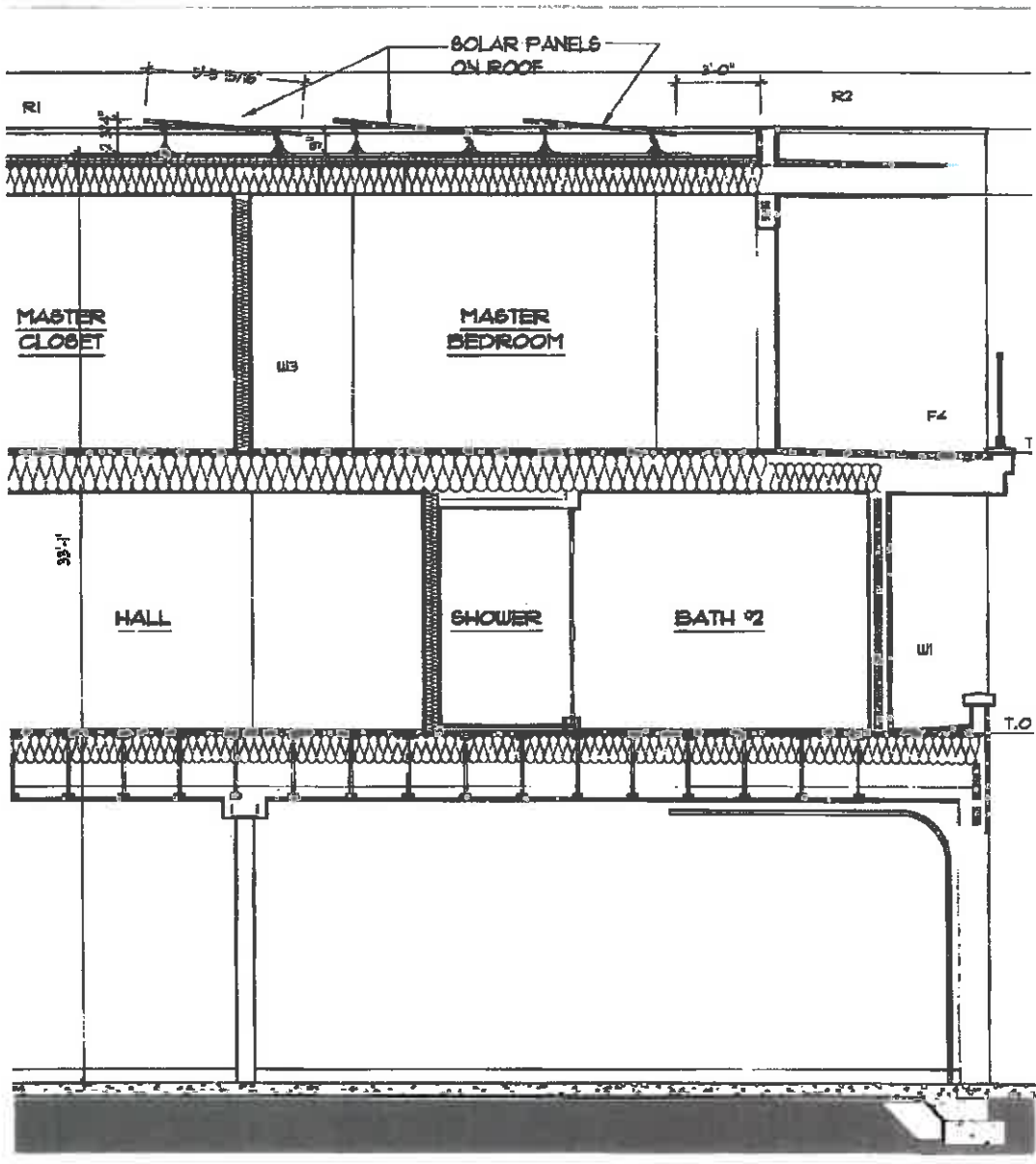
Job Number:

20291

Sheet Number:

PV-2.0

Sheet



① PARTIAL BUILDING SECTION
 SCALE: 1/4" = 1'-0"



FORGESOLAR GLARE ANALYSIS

Project: Riverside Co Residential

Four rooftop PV arrays near KTRM airport, Thermal CA

Site configuration: All 4 homes-temp-0

Analysis conducted by Dave Belote (dave@darestrategies.com) at 21:15 on 15 Dec, 2020.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at <https://www.federalregister.gov/d/2013-24729>

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m²
Time Interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 47189.8001



PV Array(s)

Name: 61197 Goodwood
Axis tracking: Fixed (no rotation)
Tilt: 7.0°
Orientation: 168.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.804671	-118.150223	-148.89	33.98	-112.91
2	33.804687	-118.150088	-145.49	33.98	-111.51
3	33.804640	-118.150073	-144.88	33.98	-110.70
4	33.804617	-118.150217	-148.61	33.98	-112.63

Name: 61198 Goodwood

Axis tracking: Fixed (no rotation)

Tilt: 7.0°

Orientation: 186.0°

Rated power: -

Panel material: Smooth glass with AR coating

Reflectivity: Vary with sun

Slope error: correlates with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.605040	-116.149252	-145.53	30.81	-114.72
2	33.605130	-116.149232	-146.16	30.81	-115.35
3	33.605116	-116.149150	-147.62	30.81	-116.81
4	33.605024	-116.149189	-146.80	30.81	-115.98

Name: 88804 Rogers Way

Axis tracking: Fixed (no rotation)

Tilt: 7.0°

Orientation: 270.0°

Rated power: -

Panel material: Smooth glass with AR coating

Reflectivity: Vary with sun

Slope error: correlates with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.599143	-116.150041	-146.57	36.25	-110.31
2	33.599018	-116.150041	-147.30	36.25	-111.05
3	33.599020	-116.149994	-149.87	36.25	-110.72
4	33.599049	-116.149994	-148.59	36.25	-110.33
5	33.599048	-116.150008	-146.82	36.25	-110.56
6	33.599144	-116.150010	-145.99	36.25	-109.74

Name: 88814 Newton Way
Axis tracking: Fixed (no rotation)
Tilt: 8.0°
Orientation: 185.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.801882	-116.150329	-148.16	38.65	-109.51
2	33.801700	-116.150148	-148.42	38.65	-109.77
3	33.801688	-116.150136	-149.52	38.65	-110.87
4	33.801627	-116.150317	-149.15	38.65	-110.50

Flight Path Receptor(s)

Name: Rwy 12
Description:
Threshold height: 50 ft
Direction: 135.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.830183	-116.171005	-117.94	50.00	-87.94
Two-mile	33.850628	-116.185587	-80.78	568.30	485.52

Name: Rwy 17

Description:

Threshold height: 50 ft

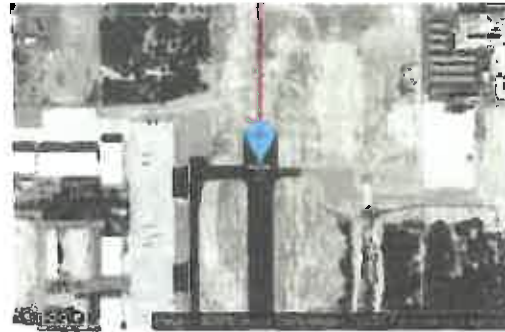
Direction: 180.2°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.639142	-116.156425	-115.33	50.00	-65.33
Two-mile	33.668064	-116.156286	-81.22	579.35	498.12

Name: Rwy 30

Description:

Threshold height: 50 ft

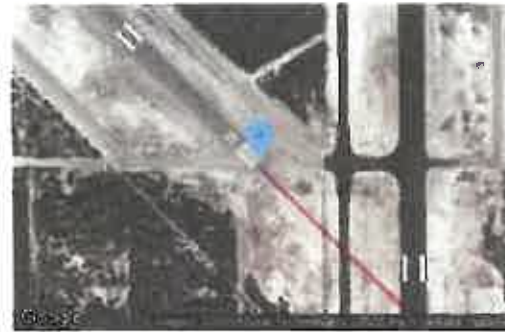
Direction: 315.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.620459	-116.159390	-132.30	50.00	-82.28
Two-mile	33.600014	-116.134810	-157.22	628.39	471.16

Name: Rwy 35

Description:

Threshold height: 50 ft

Direction: 0.2°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.615802	-116.156431	-139.07	50.00	-89.06
Two-mile	33.586890	-116.156552	-156.01	620.40	464.39

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
→ 61197 Goodwood	7.0	188.0	1,679	0	0
61198 Goodwood	7.0	188.0	1,717	0	0
86804 Rogers Way	7.0	270.0	0	0	0
86814 Newton Way	8.0	185.0	762	0	0

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	4158	0
Rwy 35	0	0

Results for: 61197 Goodwood

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	1679	0
Rwy 35	0	0

Flight Path: Rwy 12

0 minutes of yellow glare
0 minutes of green glare

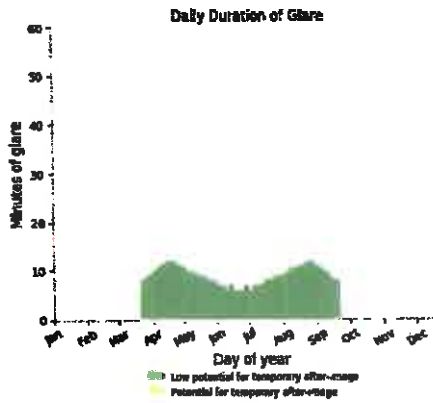
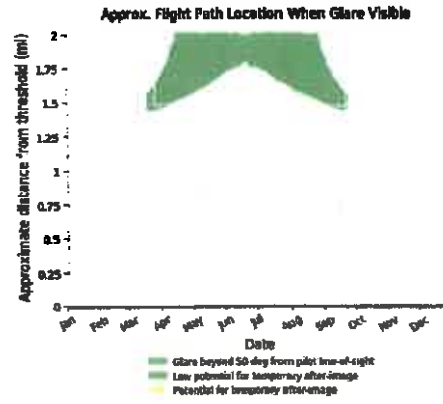
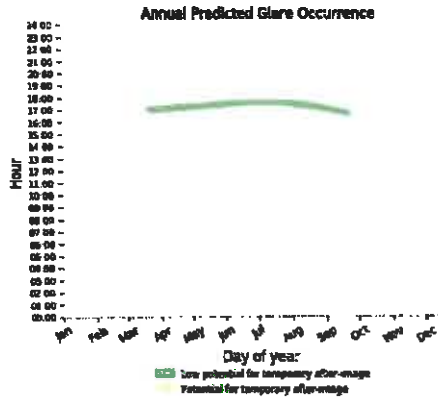
Flight Path: Rwy 17

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare

1679 minutes of green glare



Flight Path: Rwy 35

0 minutes of yellow glare

0 minutes of green glare

Results for: 61198 Goodwood

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	1717	0
Rwy 35	0	0

Flight Path: Rwy 12

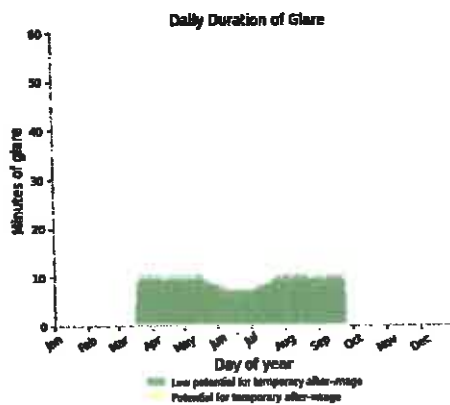
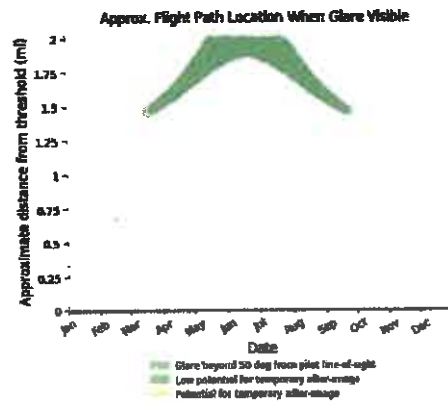
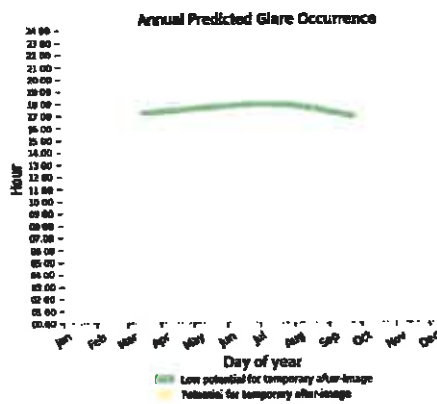
0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 17

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare
1717 minutes of green glare



Flight Path: Rwy 35

0 minutes of yellow glare
0 minutes of green glare

Results for: 86804 Rogers Way

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	0	0
Rwy 35	0	0

Flight Path: Rwy 12

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 17

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 35

0 minutes of yellow glare
0 minutes of green glare

Results for: 86814 Newton Way

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	762	0
Rwy 35	0	0

Flight Path: Rwy 12

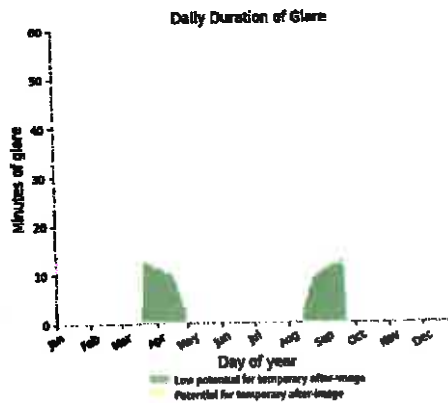
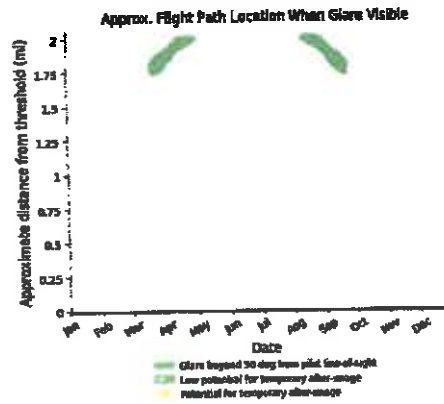
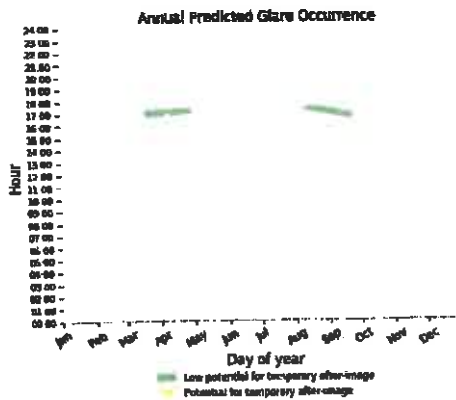
0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 17

0 minutes of yellow glare
 0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare
 762 minutes of green glare



Flight Path: Rwy 35

0 minutes of yellow glare
 0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size.

Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Refer to the Help page at www.forgesolar.com/help/ for assumptions and limitations not listed here.

PAGE BREAK





AIRPORT LAND USE COMMISSION RIVERSIDE COUNTY

December 17, 2020

CHAIR
Russell Betts
Desert Hot Springs

VICE CHAIR
Steven Stewart
Palm Springs

COMMISSIONERS

Arthur Butler
Riverside

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Riverside

Steve Manos
Lake Elsinore

Richard Stewart
Moreno Valley

Gary Youmans
Temecula

STAFF

Director
Simon A. Houseman

Paul Ruli
Barbara Santos

County Administrative Center
4080 Lemon St., 14th Floor
Riverside, CA 92501
(951) 955-5132

Mr. Rendell Klaarenbeek, Deputy Director
Riverside County Building and Safety Department
4080 Lemon Street, 12th Floor

Riverside CA 92501
(VIA HAND DELIVERY)

**RE: AIRPORT LAND USE COMMISSION (ALUC) DEVELOPMENT REVIEW –
DIRECTOR’S DETERMINATION**

File No.: ZAP1054TH20
Related File No.: BRS2002448 (Building Permit)
APN: 759-210-001

Dear Mr. Klaarenbeek:

Under the delegation of the Riverside County Airport Land Use Commission (ALUC) pursuant to Policy 1.5.2(d) of the Countywide Policies of the 2004 Riverside County Airport Land Use Compatibility Plan, staff reviewed Riverside County Building and Safety Case No. BRS2002448 (Building Permit), a proposal to construct a 500 square foot rooftop solar panel system on a proposed single family residence located at 86804 Rogers Way within the Thermal Motorclub, located northerly of 62nd Avenue, westerly of Polk Street, easterly of Tyler Street, and southerly of Avenue 60.

The site is located within Airport Compatibility Zone C of the Jacqueline Cochran Regional Airport Influence Area (AIA). Within Compatibility Zone C of the Jacqueline Cochran Regional Airport Land Use Compatibility Plan, residential density is restricted to a maximum of 0.2 dwelling units per acre. The proposed rooftop solar panels will not generate any density.

www.rcaluc.org

The elevation at the southerly end of Runway 17-35 at Jacqueline Cochran Regional Airport is 137.5 feet below mean sea level (-137.5 feet above mean sea level [AMSL]). At a distance of 5,250 feet from the runway to the project, Federal Aviation Administration Obstruction Evaluation Services (FAA OES) review would be required for any structures with a top of roof exceeding -85 feet above mean sea level. The site’s elevation is -147.5 feet AMSL and the proposed building height (with rooftop solar panels) is 36 feet, resulting in a top point elevation of -111.5 feet AMSL. Therefore, review by the FAA Obstruction Evaluation Service was not required. The height of the proposed solar panels will not significantly increase the overall height of the building.

Based on the Federal Aviation Administration’s Interim Policy for Review of Solar Energy System Projects on Federally Obligated Airports, no glare potential or low potential for temporary after-image (“green” level) are acceptable levels of glare on final approach (within 2 miles from end of runway) for solar facilities located on airport property and is the recommended

AIRPORT LAND USE COMMISSION

standard for properties near airports. However, potential for temporary after-image” (“yellow” level) and potential for permanent eye damage (“red” level) are not acceptable levels of glare on final approach. No glare is permitted at air traffic control towers.

The project proposes 500 square feet of solar panels on a single family residence rooftop with a fixed tilt of 7 degrees with no rotation, and an orientation of 270 degrees. The solar glare study completed by Forge Solar was based on a 2 mile straight in approach (as per FAA Interim Policy Standards) to runways 17 and 35, and runways 12 and 30. Jacqueline Cochran Regional Airport does not have an air traffic control tower.

The analysis concluded that no glare would occur within the 2 mile approach to runways 17-35 and 12-30. Evaluation of the approach indicates that the panels would result in zero potential for temporary after-image (“green” level glare). Glare from solar panels could potentially constitute a hazard to flight. However, based on the solar glare hazard analysis provided, the glare experienced (i.e. no glare) would be an acceptable level for solar facilities on airports. Therefore, the hazard potential is low.

The applicant has indicated that they do not plan to utilize equipment that would interfere with aircraft communications. The PV panels themselves present little risk of interfering with radar transmission due to their low profiles. In addition, solar panels do not emit electromagnetic waves over distances that could interfere with radar signal transmissions, and any electrical facilities that do carry concentrated current will be buried beneath the ground and away from any signal transmission. There are no radar transmission or receiving facilities within the site

Conclusion: This approval applies to the installation of solar panels as submitted. Any change to the solar array would require ALUC review. All previously applied conditions of approval from the original Thermal Motorclub project (ZAP1017TH10) remain applicable.

As ALUC Director, I hereby find the above-referenced project **CONSISTENT** with the 2005 Jacqueline Cochran Regional Airport Land Use Compatibility Plan, as amended in 2006, provided that the County of Riverside applies the following recommended conditions:

1. The following uses shall be prohibited:
 - (a) Any use or activity which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.
 - (b) Any use or activity which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.
 - (c) Any use or activity which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area.

AIRPORT LAND USE COMMISSION

- (d) Any use or activity which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.
2. All solar arrays installed on the project site shall consist of smooth glass with anti-reflective coating, a fixed tilt of 7.0 degrees and orientation of 270 degrees. Solar panels shall be limited to a total of 500 square feet, and the locations and coordinates shall be as specified in the glare study. Any deviation from these specifications (other than reduction in square footage of panels), including change in tilt or orientation, shall require a new solar glare analysis to ensure that the amended project does not result in any glare impacting the air traffic control tower or creation of any "yellow" or "red" level glare in the flight paths, and shall require review by the Airport Land Use Commission.
 3. In the event that any incidence of electrical interference affecting the safety of air navigation occurs as a result of project operation, upon notification to the airport operator of an incidence, the airport operator shall notify the project operator in writing. Within 30 days of written notice, the project operator shall be required to promptly take all measures necessary to eliminate such interference. An "incidence" includes any situation that results in an accident, incident, "near-miss," report by airport personnel, or specific safety complaint to the airport operator or to federal, state, or county authorities responsible for the safety of air navigation. The project operator shall work with the airport operator to prevent recurrence of the incidence. For each such incidence made known to the project operator, the necessary remediation shall only be considered to have been fulfilled when the airport operator states in writing that the situation has been remediated to the airport operator's satisfaction.
 4. In the event that any incidence of glint, glare, or flash affecting the safety of air navigation occurs as a result of project operation, upon notification to the airport operator of an incidence, the airport operator shall notify the project operator in writing. Within 30 days of written notice, the project operator shall be required to promptly take all measures necessary to eliminate such glint, glare, or flash. An "incidence" includes any situation that results in an accident, incident, "near-miss," or specific safety complaint regarding an in-flight experience to the airport operator or to federal, state, or county authorities responsible for the safety of air navigation. The project operator shall work with the airport operator to prevent recurrence of the incidence. Suggested measures may include, but are not limited to, reprogramming the alignment of the panels, covering them at the time of day when incidences of glare occur, or wholly removing panels to diminish or eliminate the source of the glint, glare, or flash. For each such incidence made known to the project operator, the necessary remediation shall only be considered to have been fulfilled when the airport operator states in writing that the situation has been remediated to the airport operator's satisfaction.

If you have any questions, please contact Paul Ruil, ALUC Principal Planner, at (951) 955-6893.

AIRPORT LAND USE COMMISSION

Sincerely,
RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

Simon A. Housman

Simon A. Housman, ALUC Director

Attachments: Notice of Airport in Vicinity

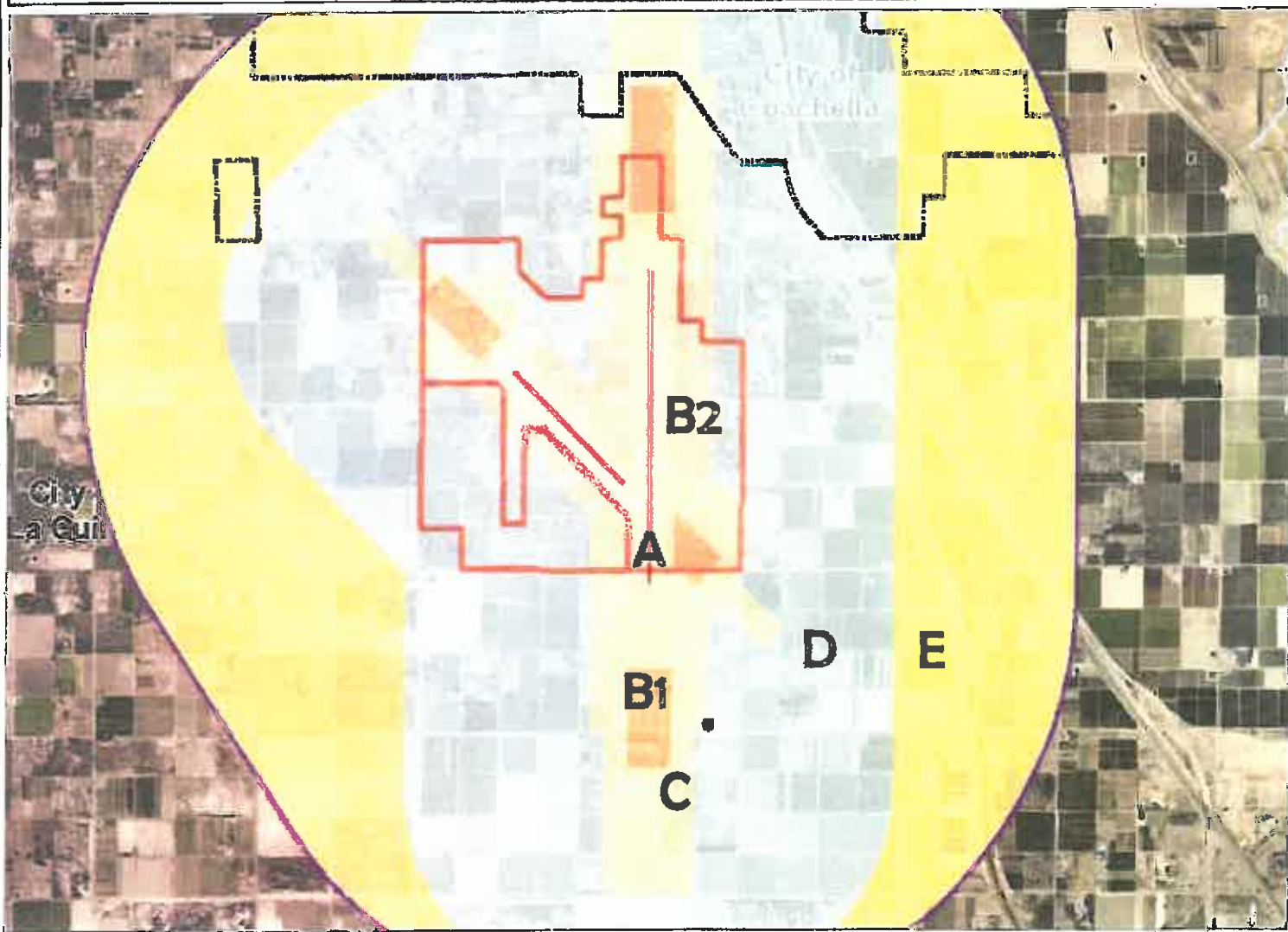
**cc: Fullerton Architects, P.C. (applicant/representative)
Matt and Kristin Brown (property owner)
Michael Maldonado, Interim County Airports Manager
ALUC Case File**

Y:\AIRPORT CASE FILES\JCRA\ZAP1054TH20\ZAP1054TH20.LTR.doc

NOTICE OF AIRPORT IN VICINITY

This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances [can vary from person to person. You may wish to consider what airport annoyances], if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you. Business & Professions Code Section 11010 (b)
(13)(A)

Map My County Map



- Legend**
- Runways
 - Airports
 - Airport Influence Areas
 - Airport Compatibility Zones**
 - OTHER COMPATIBILITY ZONE**
 - A
 - A-EXC1
 - B1
 - B1-APZ I
 - B1-APZ I-EXC1
 - B1-APZ II
 - B1-APZ II-EXC1
 - B1-EXC1
 - B2
 - B2-EXC1
 - C
 - C1
 - C1-EXC1
 - C1-EXC3
 - C1-EXC4
 - C1-HIGHT
 - C2
 - C2-EXC1
 - C2-EXC2
 - C2-EXC3
 - C2-EXC5
 - C2-EXC6



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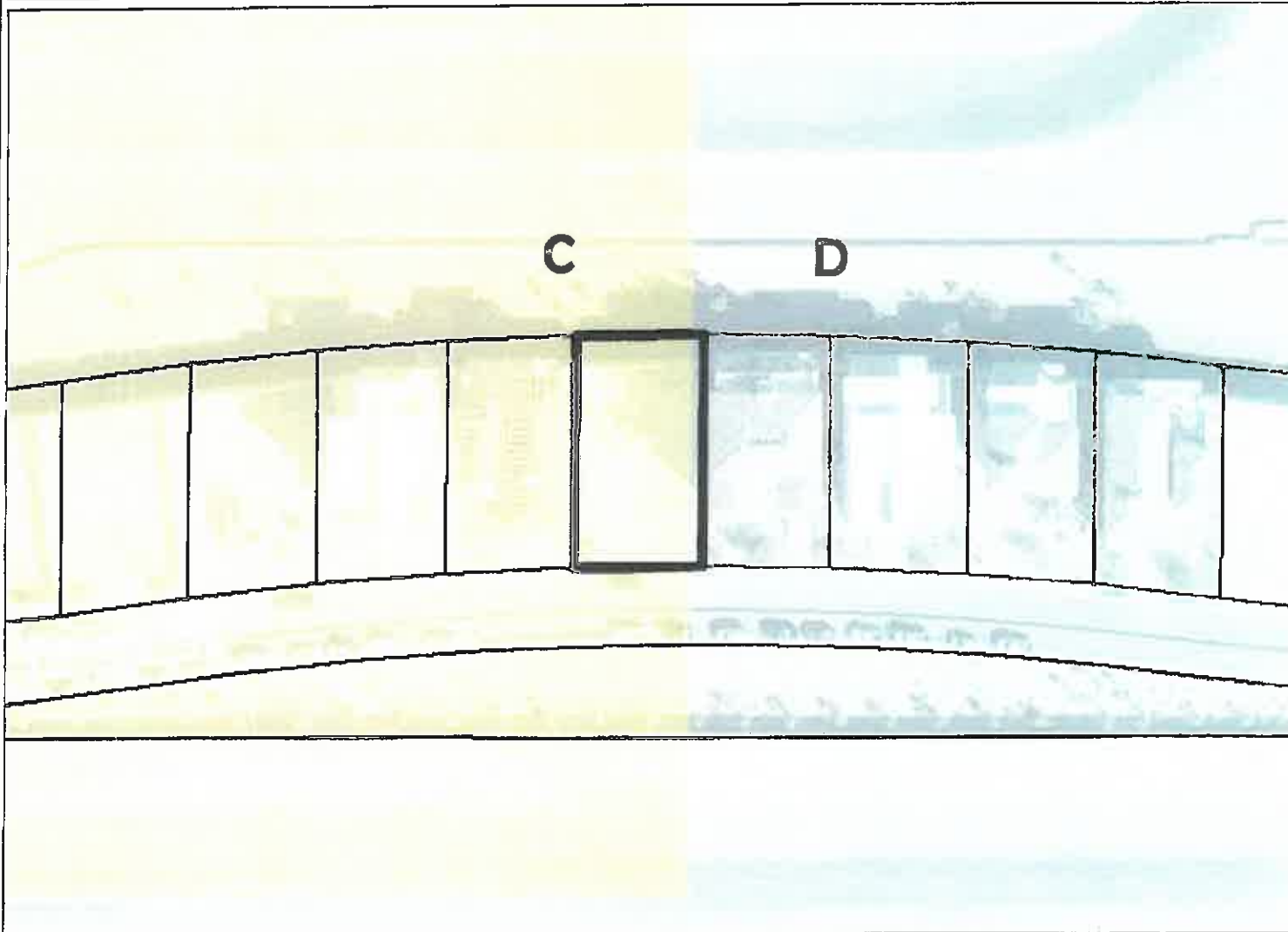
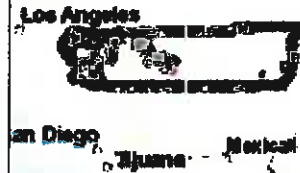


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Notes

Map My County Map



Legend

- Parcels
- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones**
- OTHER COMPATIBILITY ZONE**
- A
- A-EXC1
- B1
- B1-APZ I
- B1-APZ I-EXC1
- B1-APZ II
- B1-APZ II-EXC1
- B1-EXC1
- B2
- B2-EXC1
- C
- C1
- C1-EXC1
- C1-EXC3
- C1-EXC4
- C1-HIGHT
- C2
- C2-EXC1
- C2-EXC2
- C2-EXC3
- C2-EXC5



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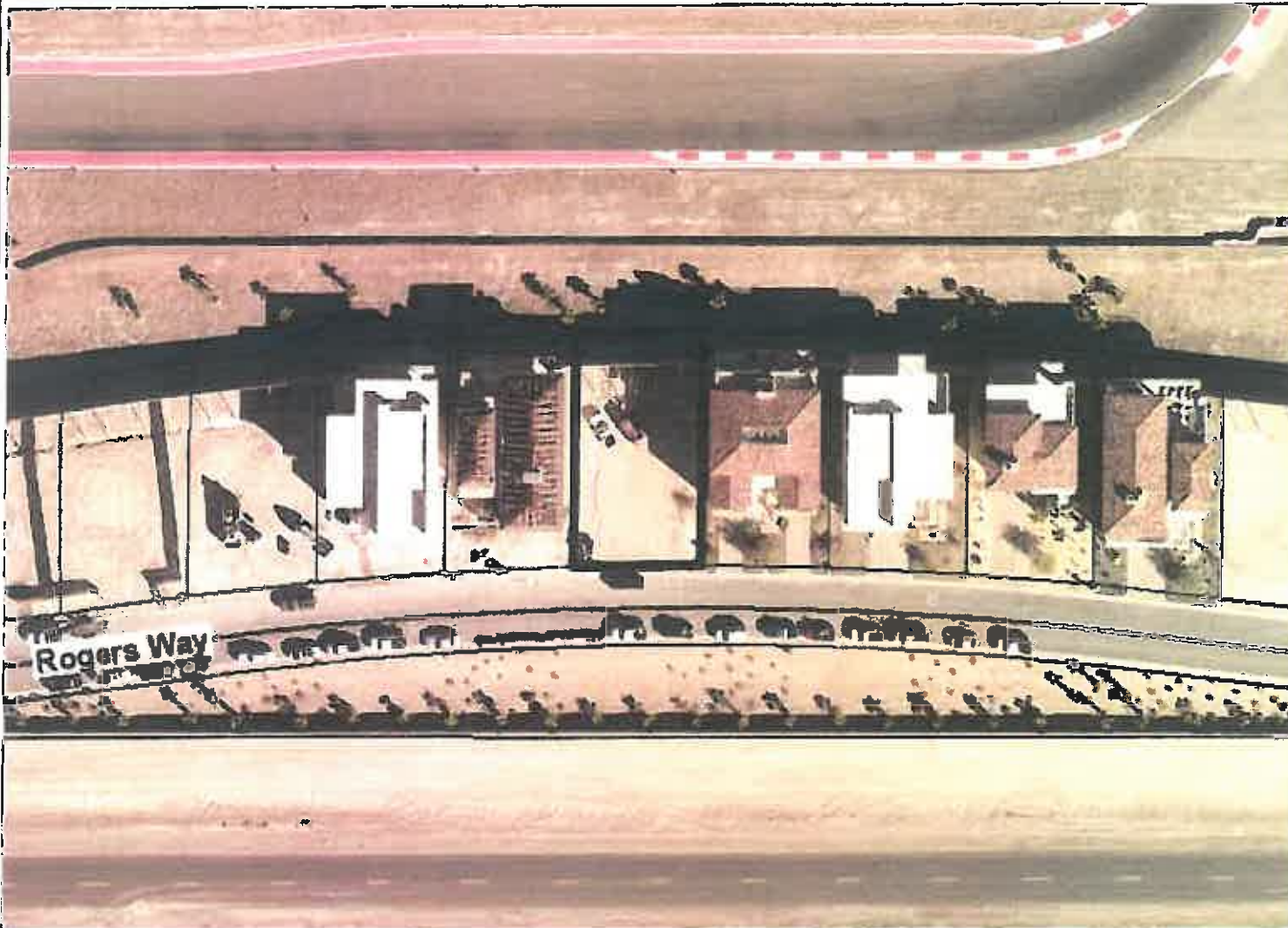
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Notes

Map My County Map



Legend

- Parcels
- County Centerline Names
- County Centerlines
- Blueline Streams
- City Areas
- World Street Map



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0 94 188 Feet

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Map My County Map



Legend

- Parcels
- County Centerlines
- Blueline Streams
- ▣ City Areas
- World Street Map



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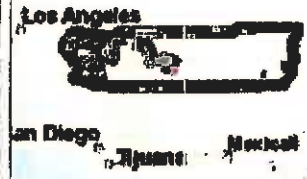
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Notes

Map My County Map



Legend

-  Parcels
-  County Centerlines
-  Blueline Streams
-  City Areas
-  World Street Map



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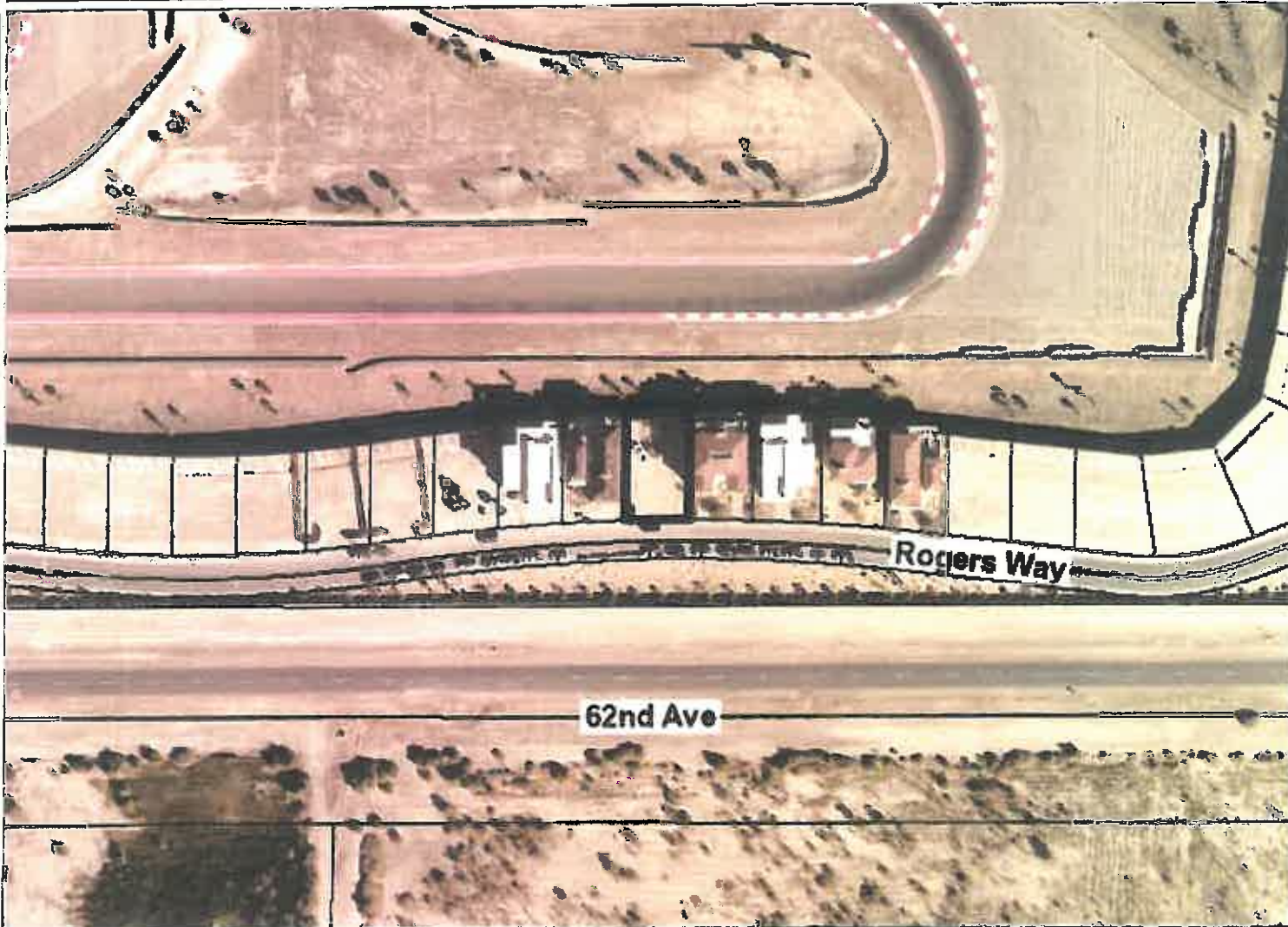


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Notes

Map My County Map



- Legend**
- Parcels
 - County Centurline Names
 - County Centurlines
 - BlueLine Streams
 - City Areas
 - World Street Map



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0 188 376 Feet

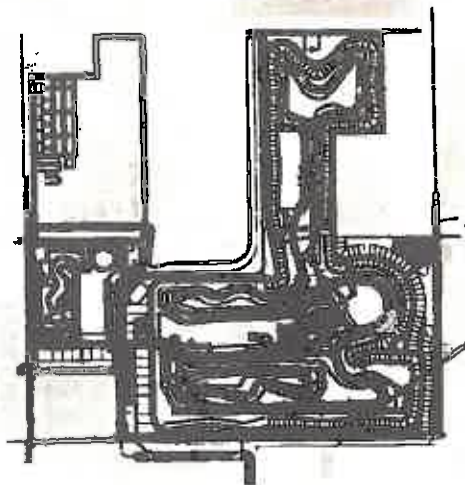
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Notes

**JACQUELINE
COCHRAN
AIRPORT**

**THERMAL
MOTORSPORTS**



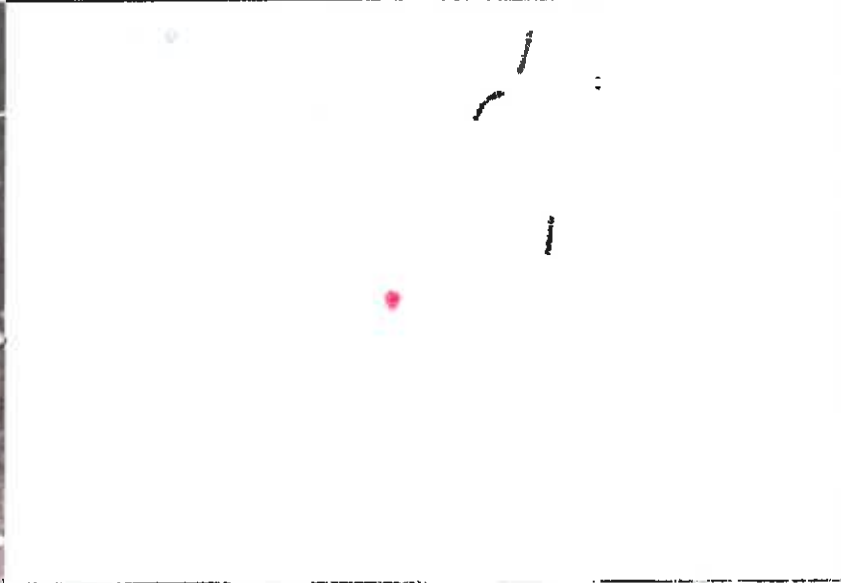
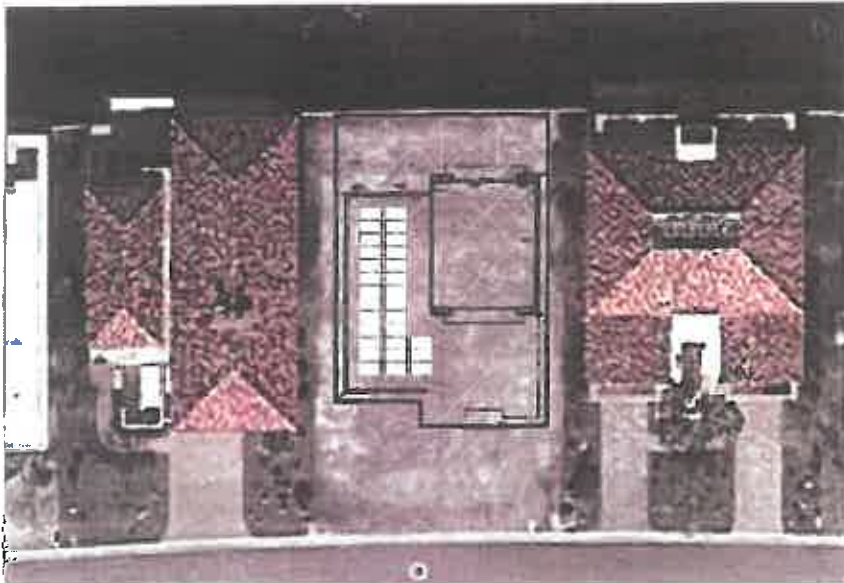
LOT 19.



PLAN NORTH



1 SITE PLAN
SCALE: 1" = 1500'



Revisions:	Date:

Michael Rango *Michael Rango*
 760.922.4433 Lic. No. 840250

610 N. Farrel Drive
 Palm Springs, CA 92262
 (760) 322-4433 office
 Lic. No. 840250
 info@HotPurpleEnergy.com
 www.HotPurpleEnergy.com

INTEGRATOR:



GENERAL NOTES:

1. ALL ELECTRICAL WORK TO BE INSTALLED BY A QUALIFIED LICENSED ELECTRICIAN AND APPRENTICES WORKING UNDER THE DIRECT SUPERVISION OF A LICENSED ELECTRICIAN.
2. ALL SOLAR MODULES SHALL BE UL LISTED 1703 AND CEC APPROVED. ALL INVERTERS SHALL BE UL LISTED 1741SA CERTIFIED AND CEC APPROVED. ALL ELECTRICAL COMPONENTS AND MATERIALS SHALL BE LISTED AND APPROVED FOR ITS PURPOSE AND INSTALLED IN A WORKMAN LIKE MANNER. ALL OUTDOOR EQUIPMENT SHALL MEET APPROPRIATE NEMA STANDARDS.
3. THIS SYSTEM IS INTENDED TO BE OPERATED IN PARALLEL WITH THE UTILITY SERVICE PROVIDER. ANTI-ISLANDING PROTECTION IS A REQUIREMENT OF UL1741 AND IS INTENDED TO PREVENT THE OPERATION OF THE PHOTOVOLTAIC SYSTEM WHEN THE UTILITY GRID IS NOT IN OPERATION.
4. PERMISSION TO OPERATE THE SYSTEM IS NOT AUTHORIZED UNTIL FINAL INSPECTIONS AND APPROVALS BY THE LOCAL AUTHORITY HAVING JURISDICTION AND THE LOCAL UTILITY SERVICE PROVIDER.
5. THE METHOD OF MOUNTING SHALL BE DONE IN ACCORDANCE WITH THE RACKING MANUFACTURER TO MEET DEAD LOAD, WIND LOAD, AND SEISMIC REQUIREMENTS. PHOTOVOLTAIC MODULES WILL BE SECURED AND MOUNTED ON THE ROOF AS SPECIFIED ON THE STRUCTURAL SHEETS. EXISTING ROOF EQUIPMENT WILL NOT BE AFFECTED BY THE PHOTOVOLTAIC SYSTEM OR INSTALLATION.
6. ALL FASTENERS SHALL BE CORROSION RESISTANT APPROPRIATE FOR THE SITE CONDITIONS.
7. ALL ROOFING REPAIRS MUST MAINTAIN EXISTING CLASS AND TYPE OF ROOF AND ALL WORK SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURERS INSTALLATION REQUIREMENTS.
8. TO BE INSTALLED IN SUCH A MANNER THAT IS DISCREET AND DOES NOT DETRACT FROM THE HOMES ARCHITECTURE.

DESCRIPTION OF WORK:

ROOF MOUNTED PHOTOVOLTAIC (SOLAR ELECTRIC) INSTALLATION III MOUNTED @ 7° FACING AN AZIMUTH OF 2/10° CONSISTING OF (29) REC 325 WATT MODULES (8.73KW).

RACK MOUNTING SYSTEM IS UNIRAC SOLARMOUNT ALUMINUM SUPPORT RAILS AND FAST JACK SOLAR STANCHIONS.

INSTALLATION SHALL COMPLY WITH THE FOLLOWING CODES:

- CEC 2019 - ARTICLE 690, 705, 706 AND OTHERS
- CPC 2019
- CBC 2019
- CMC 2019
- CFC 2019

DRAWING SHEETS:

- COVER SHEET PV-0.0
- SITE PLAN PV-1.0
- ROOF PLAN PV-2.0
- SINGLE LINE DIAGRAM PV-3.0
- MOUNTING DETAIL PV-4.0
- WARNING LABELING PV-5.0

SPECIFICATION SHEETS:

- MODULE AND INVERTERS
- UNIRAC CERTIFICATION

**Brown Residence
 COVER SHEET
 88804 Rogers Way
 Thermal, CA 92274**

Drawn by: **SF**

Checked by: **MJR**

Date: **9/24/2020**

Scale: **NTS**

Job Number: **20279**

Sheet Number:

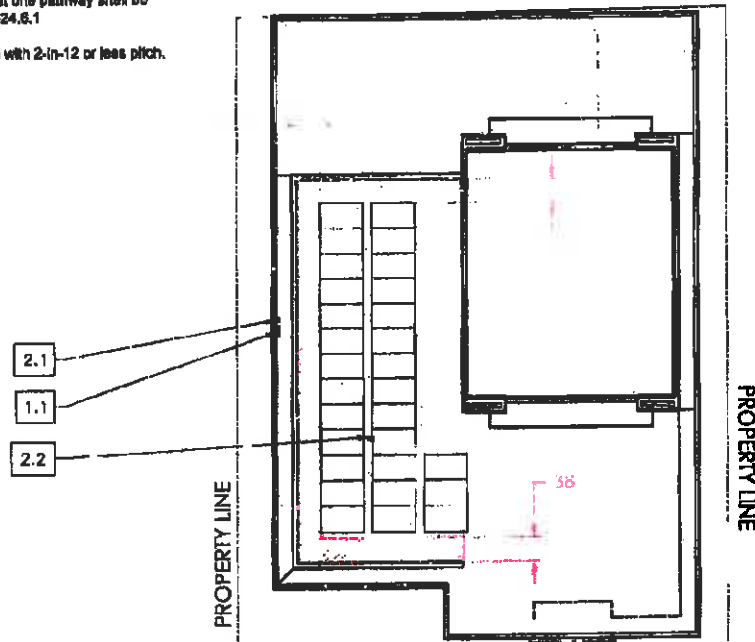
PV-0.0

Sheet

Photovoltaic arrays occupying not more than 33 percent of the plan view total roof area shall have a 18" clear set back on both sides of a horizontal ridge. Photovoltaic arrays occupying more than 33 percent of the plan view total roof area shall have a 36" clear set back on both sides of a horizontal ridge.

Two minimum 36" wide pathways on separate roof planes, from lowest ridge, shall be provided on all buildings. At least one pathway shall be on the street or driveway side of the roof. GRG R324.6.1

Clearance of ridge, hip, and valley does not apply to roofs with 2-in-12 or less pitch.



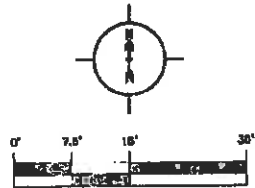
SITE PLAN KEYNOTE

EXISTING ELECTRICAL
 1. 600A MAIN ELECTRICAL PANEL


NEW ELECTRICAL (ADJACENT TO MSP)
 2.1 60A SYSTEM AC DISCONNECT

NEW ELECTRICAL (SECOND FLOOR WATER CLOSET)
 2.2 SP10000H-US PV INVERTER

NOT SHOWN
 FIRE EASEMENT/ACCESS
 EAVE SETBACK/WALL

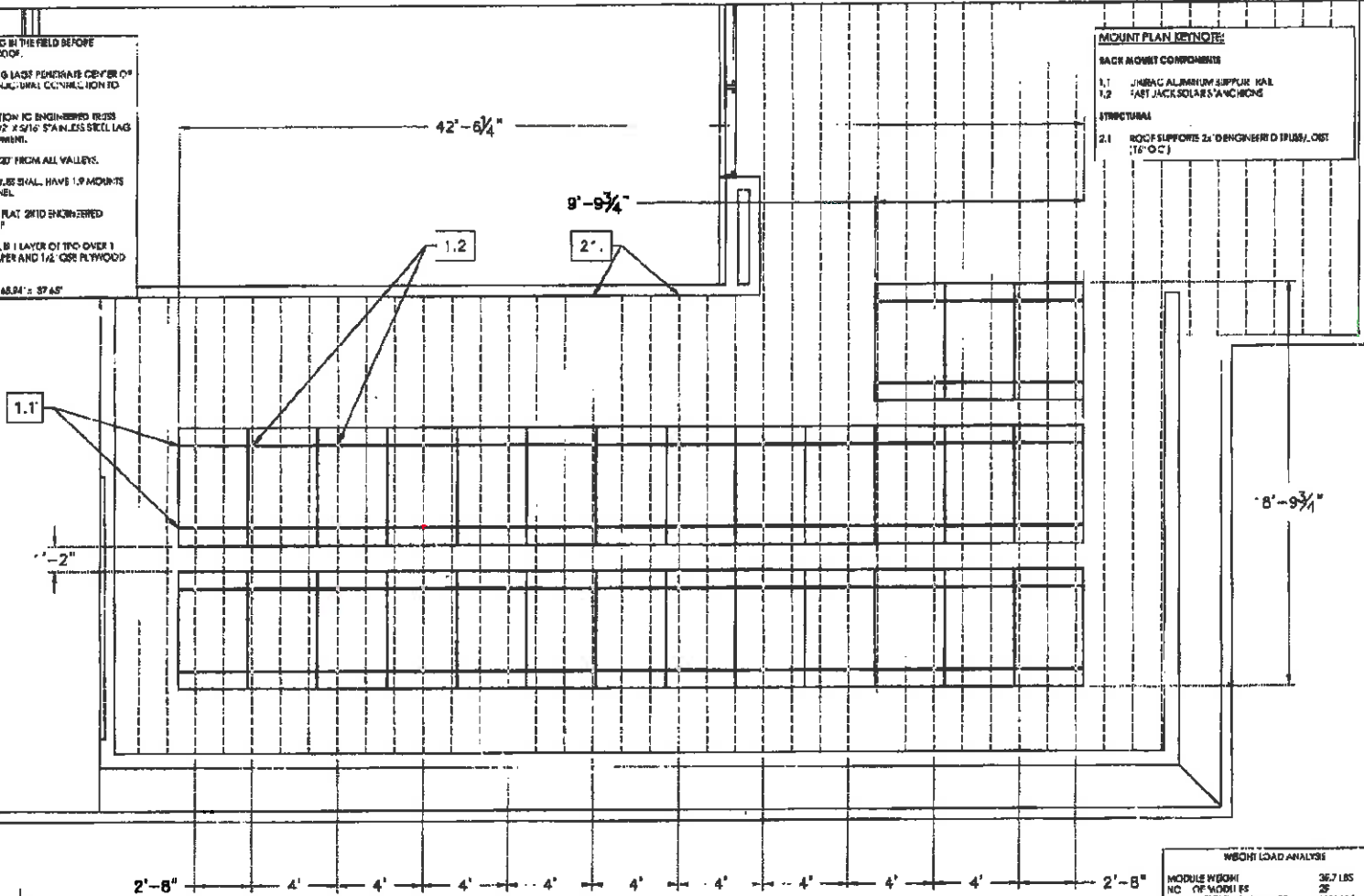


ROGERS WAY

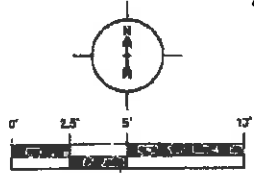
Revisions:	Date:
Michael Rango <i>Michael Rango</i> 760.322.4198	L.E. No. 94296
810 N. Farrell Drive Palm Springs, CA 92282 (760) 322-4433 office License No. 54250 info@HotPurpleEnergy.com www.HotPurpleEnergy.com	
INTEGRATOR: 	
Brown Residence SITE PLAN 86804 Rogers Way Thermal, CA 92274	
Drawn by:	SF
Checked by:	MJR
Date:	9/24/2020
Scale:	1" = 15'
Job Number:	20279
Sheet Number:	PV-1.0
Sheet	

1. VERIFY RAFTER SPACING IN THE FIELD BEFORE ATTACHING MOUNTS TO ROOF.
2. ENSURE THAT MOUNTING LAGS PENETRATE CENTER OF RAFTERS AND MAKE STRUCTURAL CONNECTION TO THE RAFTERS.
3. STRUCTURAL CONNECTION TO ENGINEERED TRUSS SHALL BE MADE BY 3/8" X 5/16" STAINLESS STEEL LAG BOLTS AND NIPER ENDS.
4. ALL MOUNTS SHALL BE 27" FROM ALL VALLEYS.
5. PHOTOVOLTAIC MODULES SHALL HAVE 1.9 MOUNTS (LAG BOLTS) PER PANEL.
6. THE ROOF STRUCTURE IS FLAT 2X10 ENGINEERED TRUSS JOIST 16' O.C. IFP.
7. THE ROOFING MATERIAL IS 1 LAYER OF TPO OVER 1 LAYER OF SOLI FELT PAPER AND 1/2" OSB PLYWOOD DECKING.
8. MODULE DIMENSIONS ARE 34" x 37 1/2"

- MOUNT PLAN KEYNOTE:**
- SACK MOUNT COMPONENTS**
- 1.1 JMBAG ALUMINUM SUPPORT RAIL
 - 1.2 FAST JACK SOLAR STANCHIONS
- STRUCTURAL**
- 2.1 ROOF SUPPORTS 2X ENGINEERED TRUSS JOIST (16' O.C.)



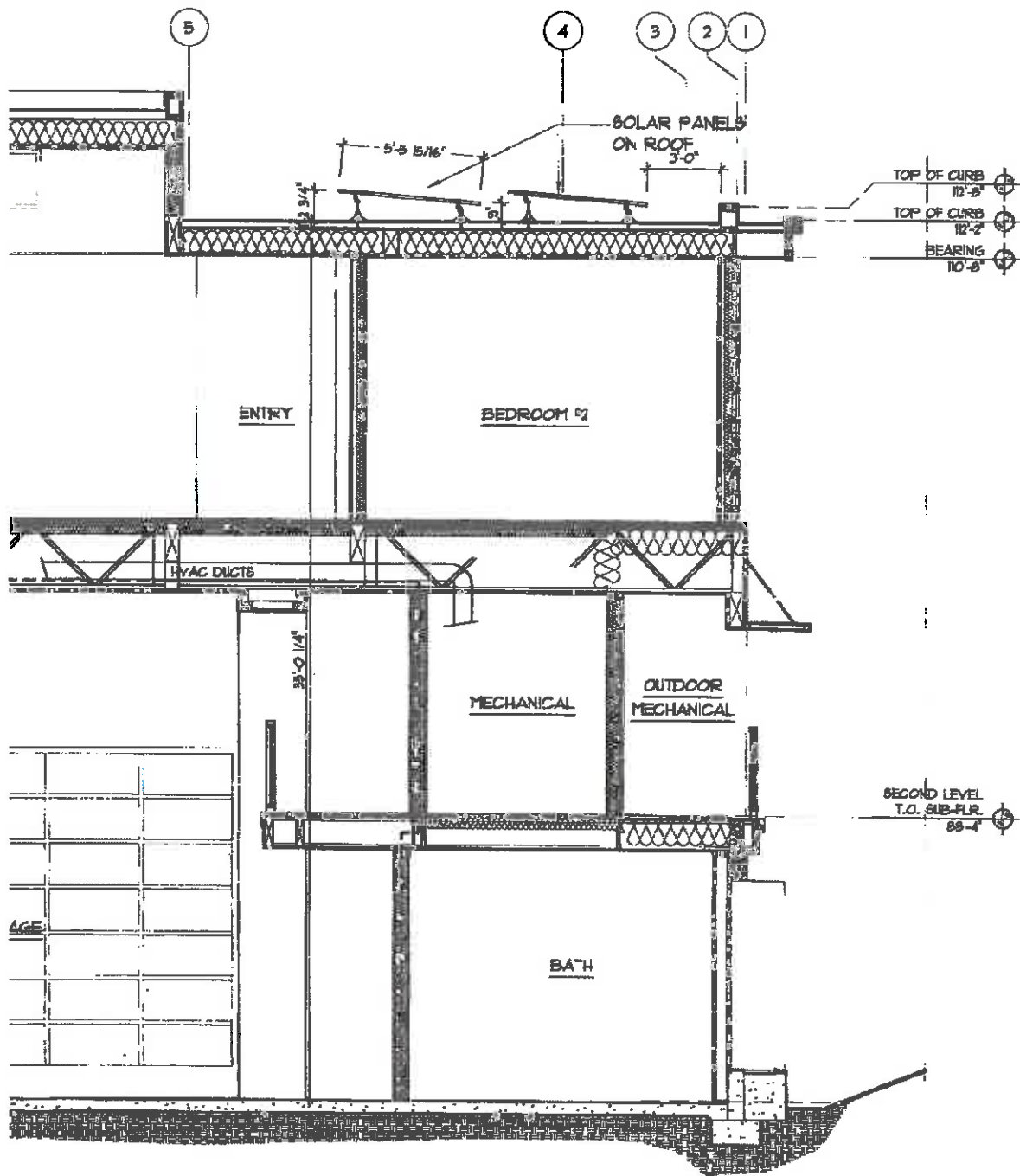
48" SPACING BETWEEN MOUNTS IS TYPICAL - MAX SPAN 6'



WEIGHT LOAD ANALYSIS

MODULE WIDTH	36.7 LBS
NO. OF MODULES	26
TOTAL WEIGHT OF MODULES	1331 LBS
TOTAL WEIGHT OF RACKS	229 LBS
TOTAL WEIGHT OF SOLAR ARRAY	1429 LBS
HEIGHT OF EACH MODULE	5.3 FEET
WIDTH OF EACH MODULE	3.1 FEET
AREA OF ONE MODULE	17.24 SQ FT
AREA OF ENTIRE SOLAR ARRAY	479.8 SQ FT
TOTAL DISTRIBUTED WEIGHT	2.9 LBS/SQ FT
NO. OF SOLAR STANCHIONS	56
WEIGHT LOAD PER STANCHION	25.8 LBS

Revisions:	Date:
Michael Rango <i>Michael Rango</i>	License No. 949580
810 N. Farnel Drive Palm Springs, CA 92262 (760) 322-4433 office	info@holpurpleenergy.com www.HolPurpleEnergy.com
INTEGRATOR:	
Brown Residence ROOF PLAN 86804 Rogers Way Thermal, CA 92274	
Drawn by:	SF
Checked by:	MJR
Date:	9/24/2020
Scale:	1" = 5'
Job Number:	20279
Sheet Number:	PV-2.0
Sheet	



① PARTIAL BUILDING SECTION
 SCALE: 1/4" = 1'-0"



FORGESOLAR GLARE ANALYSIS

Project: Riverside Co Residential

Four rooftop PV arrays near KTRM airport, Thermal CA

Site configuration: All 4 homes-temp-0

Analysis conducted by Dave Belote (dave@darestrategies.com) at 21:15 on 15 Dec, 2020.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at <https://www.federalregister.gov/d/2013-24723>

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m²
Time Interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 8.8 mrad
Site Config ID: 47169.8001



PV Array(s)

Name: 81197 Goodwood
Axis tracking: Fixed (no rotation)
Tilt: 7.0°
Orientation: 168.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.804671	-116.150223	-148.89	33.98	-112.91
2	33.804697	-116.150086	-145.49	33.98	-111.51
3	33.804640	-116.150073	-144.68	33.98	-110.70
4	33.804617	-116.150217	-146.81	33.98	-112.63

Name: 61198 Goodwood

Axis tracking: Fixed (no rotation)

Tilt: 7.0°

Orientation: 186.0°

Rated power: -

Panel material: Smooth glass with AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.605040	-116.148252	-145.59	30.81	-114.72
2	33.605130	-116.149232	-148.16	30.81	-115.35
3	33.605116	-116.149150	-147.62	30.81	-116.81
4	33.605024	-116.149189	-148.80	30.81	-116.98

Name: 86804 Rogers Way

Axis tracking: Fixed (no rotation)

Tilt: 7.0°

Orientation: 270.0°

Rated power: -

Panel material: Smooth glass with AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.599143	-116.150041	-146.57	36.25	-110.31
2	33.599019	-116.150041	-147.30	36.25	-111.05
3	33.599020	-116.149994	-146.97	36.25	-110.72
4	33.599049	-116.149994	-146.59	36.25	-110.33
5	33.599048	-116.150009	-148.82	36.25	-110.56
6	33.599144	-116.150010	-145.99	36.25	-109.74

Name: 86814 Newton Way
Axis tracking: Fixed (no rotation)
Tilt: 8.0°
Orientation: 185.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlates with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	33.601662	-116.150329	-148.18	36.65	-109.51
2	33.601700	-116.150146	-148.42	36.65	-109.77
3	33.601668	-116.150136	-149.52	36.65	-110.87
4	33.601627	-116.150317	-149.15	36.65	-110.50

Flight Path Receptor(s)

Name: Rwy 12
Description:
Threshold height: 50 ft
Direction: 135.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.630183	-116.171005	-117.94	50.00	-67.94
Two-mile	33.650828	-116.185587	-80.78	566.30	485.52

Name: Rwy 17

Description:

Threshold height: 50 ft

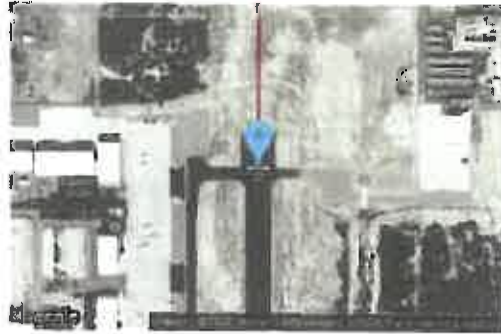
Direction: 180.2°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.639142	-116.158425	-115.33	50.00	-65.33
Two-mile	33.668054	-116.156288	-91.22	579.35	488.12

Name: Rwy 30

Description:

Threshold height: 50 ft

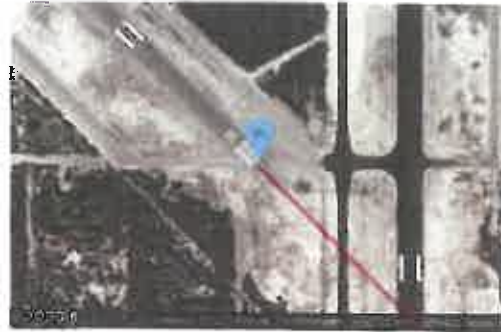
Direction: 315.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.620459	-116.158390	-132.30	50.00	-82.29
Two-mile	33.600014	-116.134810	-157.22	628.39	471.16

Name: Rwy 35

Description:

Threshold height: 50 ft

Direction: 0.2°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	33.615802	-116.158431	-139.07	50.00	-89.06
Two-mile	33.596890	-116.158592	-158.01	620.40	462.39

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt	Orient	"Green" Glare	"Yellow" Glare	Energy
	(°)	(°)	min	min	kWh
61197 Goodwood	7.0	188.0	1,679	0	0
61198 Goodwood	7.0	188.0	1,717	0	0
→ 86804 Rogers Way	7.0	270.0	0	0	0
86814 Newton Way	8.0	165.0	762	0	0

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	4158	0
Rwy 35	0	0

Results for: 61197 Goodwood

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	1679	0
Rwy 35	0	0

Flight Path: Rwy 12

0 minutes of yellow glare
0 minutes of green glare

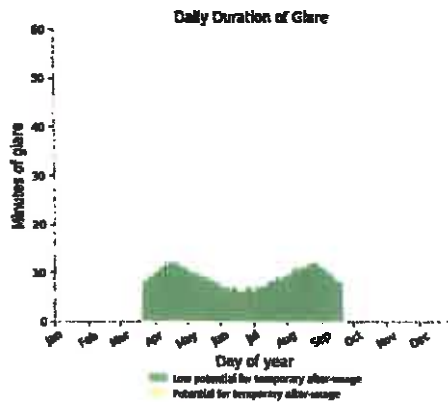
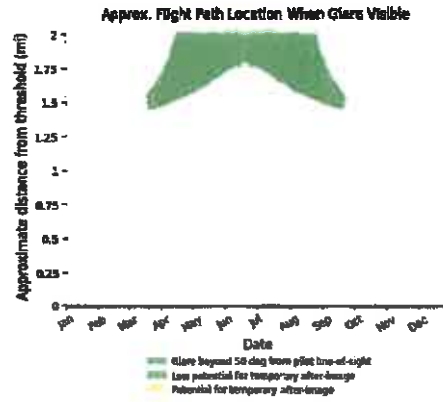
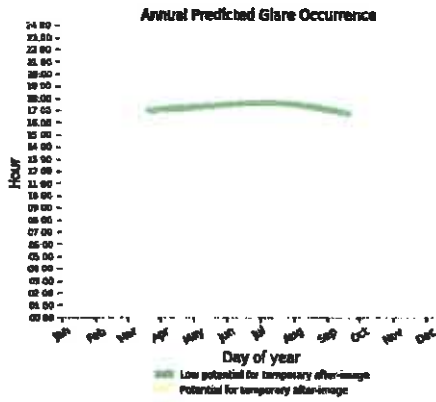
Flight Path: Rwy 17

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare

1679 minutes of green glare



Flight Path: Rwy 35

0 minutes of yellow glare

0 minutes of green glare

Results for: 61198 Goodwood

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	1717	0
Rwy 35	0	0

Flight Path: Rwy 12

0 minutes of yellow glare

0 minutes of green glare

Flight Path: Rwy 17

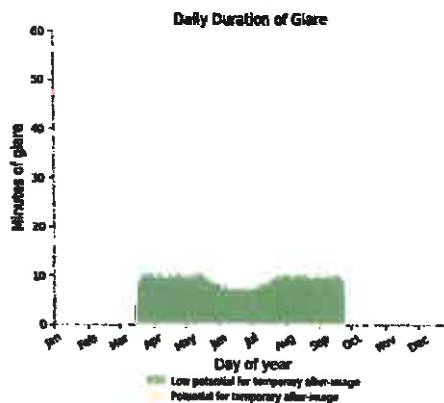
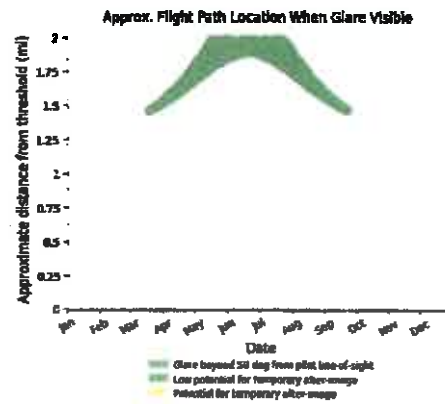
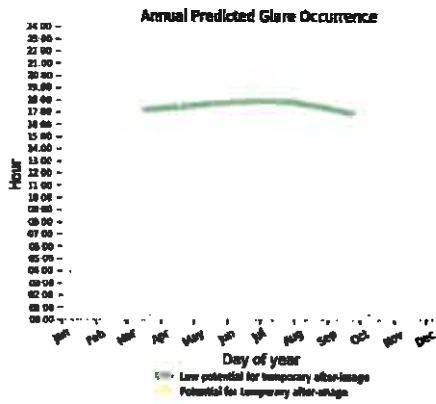
0 minutes of yellow glare

0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare

1717 minutes of green glare



Flight Path: Rwy 35

0 minutes of yellow glare

0 minutes of green glare

Results for: 86804 Rogers Way



Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	0	0
Rwy 35	0	0

Flight Path: Rwy 12

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 17

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 35

0 minutes of yellow glare
0 minutes of green glare

Results for: 86814 Newton Way

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 17	0	0
Rwy 30	762	0
Rwy 35	0	0

Flight Path: Rwy 12

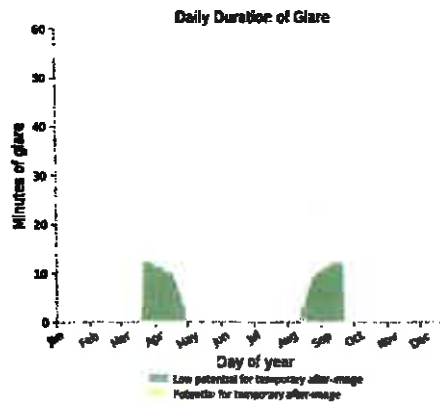
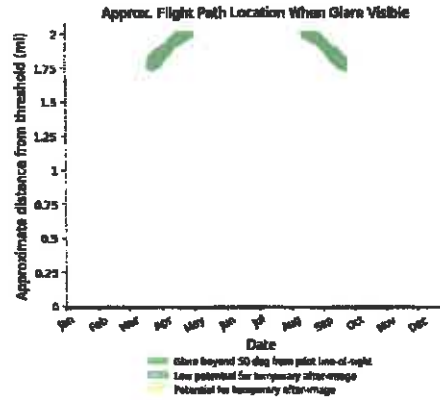
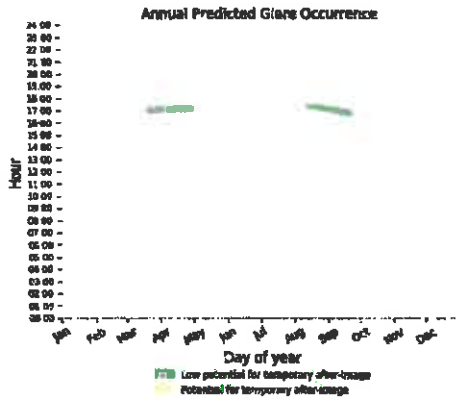
0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 17

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare
762 minutes of green glare



Flight Path: Rwy 35

0 minutes of yellow glare
0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

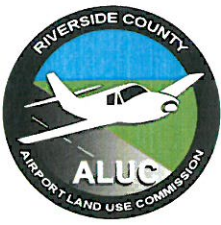
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Refer to the Help page at www.forgesolar.com/help/ for assumptions and limitations not listed here.



**AIRPORT LAND USE COMMISSION MEETING
MINUTES
JANUARY 14, 2021**

DRAFT

1-21-21

COMMISSIONERS PRESENT LIVE: Arthur Butler, Richard Stewart

COMMISSIONERS PRESENT REMOTELY: Russell Betts, Steve Manos, John Lyon, Steven Stewart

COMMISSIONERS ABSENT: Gary Youmans

2.0 PUBLIC HEARING: CONTINUED ITEMS

NONE

3.0 PUBLIC HEARING: NEW CASES

- 3.1 Staff report recommended: **CONSISTENT**
Staff recommended at hearing: **CONSISTENT**
ALUC Commission Action: **CONSISTENT (Vote 6-0; Absent: Youmans)**
Motion: Richard Stewart
Second: Steven Stewart
- ZAP1440MA20 – CDRE Holdings 17, LLC (Representative: MIG, Inc.)** – City of Moreno Valley Case Nos. PEN20-0118 (General Plan Amendment), PEN20-0119 (Change of Zone), PEN20-0121 (Plot Plan), PEN20-0120 (Tentative Parcel Map). A proposal to construct two industrial warehouse buildings with mezzanines totaling 396,275 square feet on 17.65 acres located southerly of Alessandro Boulevard, westerly of Graham Street, northerly of Brodiaea Avenue, and easterly of Frederick Street. The applicant also proposes amending the site's General Plan land use designation from Commercial (C) to Business Park/Light Industrial (BP), and changing its zoning from Community Commercial (CC) to Light Industrial (LI). The applicant also proposes a tentative parcel map to subdivide the site (Airport Compatibility Zones D and E of the March Air Reserve Base/Inland Port Airport Influence Area). Staff Planner: Paul Rull at (951) 955-6893, or e-mail at prull@rivco.org
- 3.2 Staff report recommended: **CONSISTENT**
Staff recommended at hearing: **CONSISTENT**
ALUC Commission Action: **CONSISTENT (Vote 6-0; Absent: Youmans)**
Motion: Steven Stewart
Second: Art Butler
- ZAP1091PS20 – Mountain View Power Partners, LLC (Representative: Dudek)** – County of Riverside Case Nos. CZ2000032 (Change of Zone), WCS200003 (WECS Permit). A proposal to decommission and remove 93 existing commercial wind turbines (wind energy conversion systems, abbreviated as "WECS") and install 16 new commercial wind turbines with a maximum height of 492 feet above ground level on 1,255 acres, as well decommission 3 existing meteorological towers and install 1 new 328 foot tall meteorological tower, turbine pad, safety features, transformers, electrical collection system, access roads, temporary laydown and parking, located southerly of Interstate 10, easterly of Whitewater Cutoff/Tipton Road, westerly of Indian Canyon Drive, and northerly of State Highway 111. The applicant also proposes to change the zoning of 281 acres located in the southwest portion of the project from Rural Residential Zone (R-R) to Wind Energy Resource Zone (W-E) (Not located within an Airport Compatibility Zone). Staff Planner: Paul Rull at (951) 955-6893, or e-mail at prull@rivco.org

VIDEO:

1

A video recording of the entire proceedings is available on the ALUC website at www.rcaluc.org. If you have any questions please contact Barbara Santos, ALUC Commission Secretary, at (951) 955-5132 or E-mail at basantos@rivco.org

**AIRPORT LAND USE COMMISSION MEETING
MINUTES
JANUARY 14, 2021**

- 3.3 Staff report recommended: **INCONSISTENT** **ZAP1035FL20 – Old Plantation Investors, L.P. (Representative: Cirus Development Co. Inc.)** – City of Jurupa Valley Case No. MA19216 [CZ20013, CUP19005] (Change of Zone, Conditional Use Permit). A proposal to add nine (9) new mobile home (spaces) to the existing 223-space (total 232 spaces) “Old Plantation” mobile home park on a combined total acreage of 27.72 acres over two parcels, located at 3825 Crestmore Road, southerly of Mission Boulevard, both westerly and easterly of Crestmore Road, and northerly of Capary Road. The applicant also proposes changing the zoning of the site from Planned Residential (R-4) and General Commercial (C-1/C-P) to Mobile Home Subdivisions and Mobile Home Parks Zone (R-T). (A similar proposal to add nine (9) new mobile home spaces to the existing 223-space mobile home park at this site was found inconsistent by the ALUC on September 11, 2008) (Airport Compatibility Zones B1 and C of the Flabob Airport Influence Area). Staff Planner: Paul Rull at (951) 955-6893, or e-mail at prull@rivco.org
- Staff recommended at hearing: **INCONSISTENT**
- ALUC Commission Action: **INCONSISTENT** and include a separate letter from the Commission stating its opposition to the project. **(Vote 5-0; Recuse: Lyon; Absent: Youmans)**
- Motion: Steven Stewart**
Second: Steve Manos

4.0 PUBLIC HEARING: MISCELLANEOUS ITEMS

None

5.0 ADMINISTRATIVE ITEMS

5.1 Director’s Approvals – Information only

5.2 Update March Air Reserve Base Compatibility Use Study (CUS)

Simon Housman, ALUC Director, updated the Commission that the Request for Proposal (RFP) evaluation committee has reviewed four responses to the consulting contract and has selected Matrix Design Group Inc. as the consultant. The contract is currently circulating between the County and the Matrix Design Group Inc. The final form of the contract will be submitted to the Riverside County, Board of Supervisors for approval. During the same timeframe the various jurisdictions have been obtaining resolutions of their City Councils joining and committing to the March Compatible Use Study (CUS) and we are gathering their financial contributions and records of their personnel contributions at this time. We anticipate the first meeting of the policy committee and the working group in the next 30 days.

5.3 Standardizing Conditions of Approval

Daniel Zerda, ALUC staff informed the Commission that over the past several months staff has reviewed the previous ALUC Conditions of Approval for both March and non-March projects. The intent was to standardize the conditions and place them in a document to serve as a resource for both current and future planners. The standardized conditions are now placed on the ALUC Y drive to serve as that resource.

5.4 Correspondence from the March Air Reserve Base - Information only

Simon Housman, ALUC Director commented that after receiving a correspondence letter from the Air Force, staff reached out to the applicant to obtain a consent from the applicant to take this matter off calendar pending the applicant resolving the issues with the Air Force. At this time this application is not pending with ALUC, we may or may not see this project again.

VIDEO:

A video recording of the entire proceedings is available on the ALUC website at www.rcaluc.org. If you have any questions please contact Barbara Santos, ALUC Commission Secretary, at (951) 955-5132 or E-mail at basantos@rivco.org

**AIRPORT LAND USE COMMISSION MEETING
MINUTES
JANUARY 14, 2021**

6.0 APPROVAL OF MINUTES

Commissioner Steven Stewart motioned to approve the December 10, 2020 minutes. Seconded by Commissioner Lyon. Vote 6-0; Absent: Youmans

7.0 ORAL COMMUNICATION ON ANY MATTER NOT ON THE AGENDA

None

8.0 COMMISSIONER'S COMMENTS

Russell Betts, Chair commented regarding ALUC stipend form submittals for those Commissioners attending by Zoom meeting. Barbara Santos, ALUC Secretary replied that she will approve the stipend forms for those Commissioners attending by Zoom so there is no need to mail in the form. Commissioner Betts suggested an interesting video to watch on the Blancolirio YouTube channel of a pilot who managed to land a plane in an emergency situation.

9.0 ADJOURNMENT

Russell Betts, Chair adjourned the meeting at 10:22 a.m.

Y:\ALUC COMMISSION - PUBLIC HEARING\ALUC Minutes\2021 Minutes\Minutes 1-14-21.doc

VIDEO:

A video recording of the entire proceedings is available on the ALUC website at www.rcaluc.org. If you have any questions please contact Barbara Santos, ALUC Commission Secretary, at (951) 955-5132 or E-mail at basantos@rivco.org