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December 14, 2023

Mr. Ronald Freeman
Director of Land Development
Pacific Communities Builder
1000 Dove Street, Suite 100
Newport Beach, CA 92660

RE: Supplemental CEQA analysis for Western Joshua Trees
Tract 71563, Lancaster, California

Dear Mr. Freeman:

Our firm conducted a focused survey for Tract 71563 in Lancaster, California to determine if any Western Joshua trees (*Yucca brevifolia* Engelm.) were present on the site (Figures 1 and 2). The Western Joshua tree has been listed as a threatened species under the California Endangered Species Act (CESA) and the survey was performed utilizing the new survey protocol recently established by California Department of Fish and Wildlife (CDFW) [(Section 1907.3 (b)]. Based on the results of the field investigations conducted on September 29, 2023, one clonal Western Joshua tree was observed in the northeast portion of the site. The clonal Western Joshua tree consisted of 14 individual trunks ranging in size from 0.3 meters up to 3.1 meters (See attached table and Figures 3 and 3A).

Background Information: Joshua trees are xerophytic monocotyledonous, evergreen trees endemic to the Mojave Desert and are the tallest species (ranging between 16-40 feet) in the *Asparagaceae* (yucca) family. Joshua trees are long-lived, with some populations having been documented to have a medium age of 89 years. Much like the surrounding native desert flora, they are characterized by infrequent germination and slow growth. Joshua trees have short leaves (19-37 centimeters) and short, white-petaled flowers. Through a symbiotic relationship, the Joshua trees are only pollinated by the Yucca moth (*Tegeticula synthetica*) and in return the Yucca moth reproduce in the flower. Seed cache and dispersion primarily occurs from rodents. Joshua trees typically occur on flats, mesas, bajada, and gentle slopes (alluvial fans). Joshua trees are suggested to have a moderately high degree of flexibility to adapt to numerous environmental conditions and inhabit a variety of diverse areas that differ in elevation range (600-2200 meters), temperature, soil type, precipitation, and vegetation communities.

Mr. Ronald Freeman
Director of Land Management
Pacific Communities Builder
Page 2

The United States Fish and Wildlife Services (USFWS) recognizes two populations of Western Joshua tree (*Yucca brevifolia*): YUBR South and YUBR North. The YUBR South population is primarily located in the western Mojave Desert and has been observed as far south as Joshua Tree National Park, north towards Ridgecrest, and west to Gorman, CA, and encompasses major cities as such Palmdale, Lancaster, Victorville, Hesperia, and Yucca Valley. A warm desert ecoregion, the Mojave Desert consists of long, hot summers, mild winters, and little precipitation that includes isolated thunderstorms in the summer.

Joshua trees encounter multiple threats that challenge its resiliency, which has led to an overall species decline. These threats include increasing temperatures, drought, invasive vegetation, wildfires, herbivory predation, and habitat loss.

Proposed Project: Pacific Communities Builder is proposing to construct a single-family development which will consist of 108-unit subdivision in the R-7,000 zone of the City. As part of the proposed project, a General Plan Amendment and Zone Change request have been submitted and approved by the City. The Project is bordered on the east by 60th Street West, beyond which is a State Prison. The Project is bordered on the south by an existing drainage channel, beyond which is a single-family development. Vacant land borders the site on the north and a residential development is located to the west. The Proposed Project site is within the Lancaster U.S. Geological Survey (USGS) 7.5-minute topographical map. The Assessor Parcel Number (APN) is 3203-008-056 & 057. The Project site is currently vacant and has been significantly disturbed by past activities conducted by the previous property owner and the westerly adjacent property owner under a City approved set of improvement plans and accepted street dedication.

Impacts to Regional Western Joshua Tree Populations and Potential to Jeopardize the Continued Existence of the Covered Species: The Project site is located within the *Y. brevifolia* south (YUBR South) population region which encompasses approximately 3,724,080 acres in California (Rowlands 1978). Almost half of the YUBR South population range is located on Federal land (48%), with 1.86% belonging to the state, 0.03% to County/City Government, and 50.41% belongs in private lands. The total number of Joshua trees in the South population is not known but is thought to be several million, with the greatest density of Joshua trees found in desert grasslands or shrub communities (Rowland 1978). The YUBR south population region is the largest area of contiguous Joshua tree habitat in California. Approximately 2.2 percent of the Western *Yucca brevifolia* range overlap with urban and metropolitan area, this includes Victorville, Hesperia, Palmdale, Lancaster, Ridgecrest, Yucca Valley, Apple Valley, and Antelope Valley. Urban development will result in loss of Joshua trees in these urban areas but the loss of trees due to development projects is not likely to have a

significant impact on the current condition at a population or species level scale in the area supporting populations of the western Joshua tree; however, based upon the USFWS modelling described below, overall impacts to the western Joshua trees populations may become significant over the next 30 to 70 years. The USFWS conducted two futures scenarios, using ICLUS modeling on western Joshua tree habitat based on 1.) a global approach to sustainable development that is more ecologically friendly until 2050 where it will begin to decline and 2.) forecasting greenhouse gas emissions will continuously increase throughout the 21st century. The effects of habitat loss by urbanization under scenario 1 will create approximately 21.7 percent potential decline of Joshua trees by the year 2095, as well as 14 percent reduction (705,536-acres) in suitable habitat. Scenario 2 forecasts a 41.6 percent decline of the Joshua tree population and 26 percent reduction (1,354,815-acres) in suitable habitat by 2095. Potential synergistic stressors created by habitat loss includes an increase in spread of invasive grasses and reduced fire intervals, and a persistent drought.

The project footprint covers the entire parcel and is a very small portion of the south population region for the western Joshua tree. **As noted above, there is only one clonal Western Joshua tree on the site and the clonal tree supports 14 trunks from the same root system.**

Known Population Trends: Reliable estimates of the population size of western Joshua trees are unavailable due to the lack of range-wide population surveys and studies, and highly variable population density estimates among available studies (4 to 840 trees per acre; CBD 2019). The species is currently distributed across two regional population areas (YUBR North and YUBR South) totaling approximately 5.7 million acres (USFWS 2018). There is no available data on range-wide population trends; however, recent evidence from portions of the species' range indicate the western Joshua tree may be in a state of population decline based on observations of limited recruitment and increasing mortality (Harrower and Gilbert 2018), contraction of the species' range at lower elevations due to drought conditions (Harrower and Gilbert 2018). Studies conducted at Joshua Tree National Park also indicated a 93 percent decline in western Joshua tree abundance between 1990 and 2013 (Cornett 2014).

Conclusion: Clearing and grading activities and related construction activities on the parcel would result in direct impacts to the **one clonal Joshua tree on the site**. The Joshua tree will need to be removed to make the proposed project viable. This will result in direct impacts to a State threatened species. Indirect effects could include negligible alteration of recruitment rates in the surrounding area and the introduction and spread of invasive or non-native species primarily during the construction phase.

In addition, there could be a temporary reduction in photosynthetic potential in Joshua trees in immediate adjacent areas due to fugitive dust, and an increase in erosion which could affect the root systems of some Joshua trees. However, the nearest Joshua trees are located about 200 to

Mr. Ronald Freeman
Director of Land Development
Pacific Communities Builder
Page 4

300 feet north of the site, and potential impacts from invasive species, fugitive dust, and erosion are expected to be negligible.

Therefore, the proposed development activities would result in the “Take” of only one clonal Western Joshua tree either through relocation activities or when discarded. The overall impacts of the project to the local, regional, and State population levels of the western Joshua tree are expected to be negligible. Therefore, the proposed project is not expected to jeopardize the continued existence of the western Joshua tree given the anticipated impacts to one clonal Western Joshua tree.

Sincerely,



Randall Arnold
President & Senior Biologist
RCA Associates, Inc.

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TABLE AND EXHIBITS

Joshua Tree	Location	Latitude (WGS 84)	Longitude (WGS 84)	Live or Dead
JT 2797	34.69198300°, -118.23712450° 2325.79 ft	34.691983	-118.2371245	Live
JT 2798	34.69199450°, -118.23711250° 2324.15 ft	34.6919945	-118.2371125	Live
JT 2799	34.69199367°, -118.23709983° 2333.33 ft	34.69199367	-118.2370998	Live
JT 2801	34.69199267°, -118.23709183° 2330.38 ft	34.69199267	-118.2370918	Live
JT 2802	34.69199150°, -118.23708400° 2332.68 ft	34.6919915	-118.237084	Live
JT 2803	34.69198717°, -118.23708200° 2333.66 ft	34.69198717	-118.237082	Live
JT 2804	34.69198833°, -118.23708133° 2334.32 ft	34.69198833	-118.2370813	Live
JT 2805	34.69197467°, -118.23708617° 2333.01 ft	34.69197467	-118.2370862	Live
JT 2806	34.69197700°, -118.23711317° 2332.35 ft	34.691977	-118.2371132	Live
JT 2807	34.69197383°, -118.23712217° 2329.72 ft	34.69197383	-118.2371222	Live

Height of Tree (meters)	Size Class	Mature Tree (Branched)
3.1m	B	Yes
0.9m	A	No
0.3m	A	No
0.6m	A	No
1.8m	B	No
0.6m	A	No
0.2m	A	No
0.5m	A	No
0.2m	A	No
0.1m	A	No

Flowering or Fruiting Stage (flowers, fruits, or none)

None

None

None

None

None

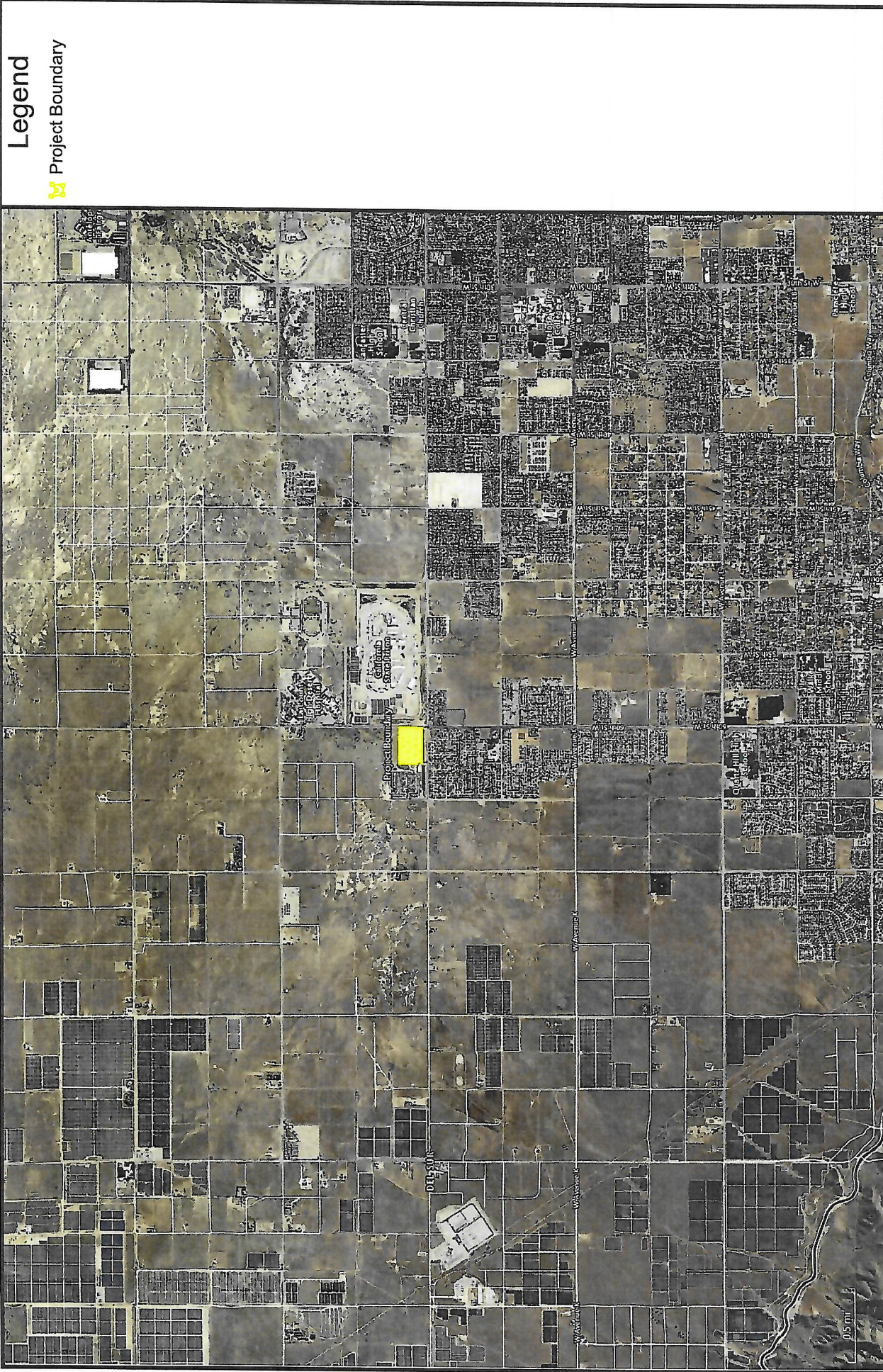
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None

None

None

None



Legend
 Project Boundary

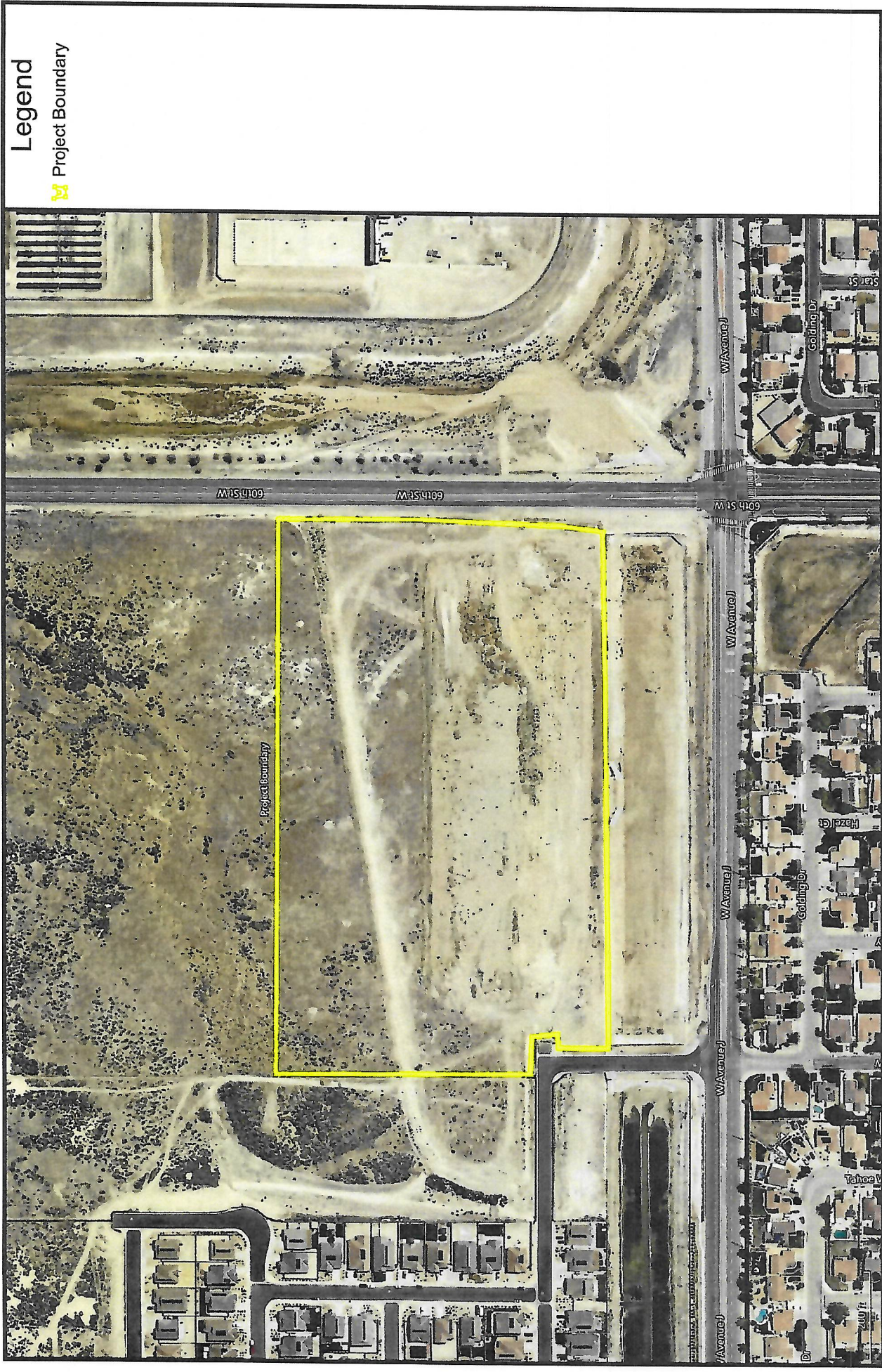


Figure 1: Regional Exhibit
 Produced By: RCA Associates Inc.

NW of the Intersection of 60th Street W and W Avenue J in the City of Lancaster, CA

Source:	Uinta Software
Acreage:	9.35-Acres (Approximately)
Project #:	2021-264





Legend
 Project Boundary

	Figure 2: Vicinity Exhibit Produced By: RCA Associates Inc.		NW of the Intersection of 60th Street W and W Avenue J in the City of Lancaster, CA	
	Source:	Uinta Software	Acreage:	9.35-Acres (Approximately)
	Project #:	2021-264		





- Legend**
- 11 Joshua Tree
 - Project Boundary



Figure 3: Locations of On Site Western Joshua Tree

NW of the Intersection of 60th Street W and W Avenue J in the City of Lancaster, CA

Source:	Uinta Software
Acreage:	9.35-Acres (Approximately)
Project #:	2021-264



Legend

- 11 Joshua Tree
- ▭ Project Boundary

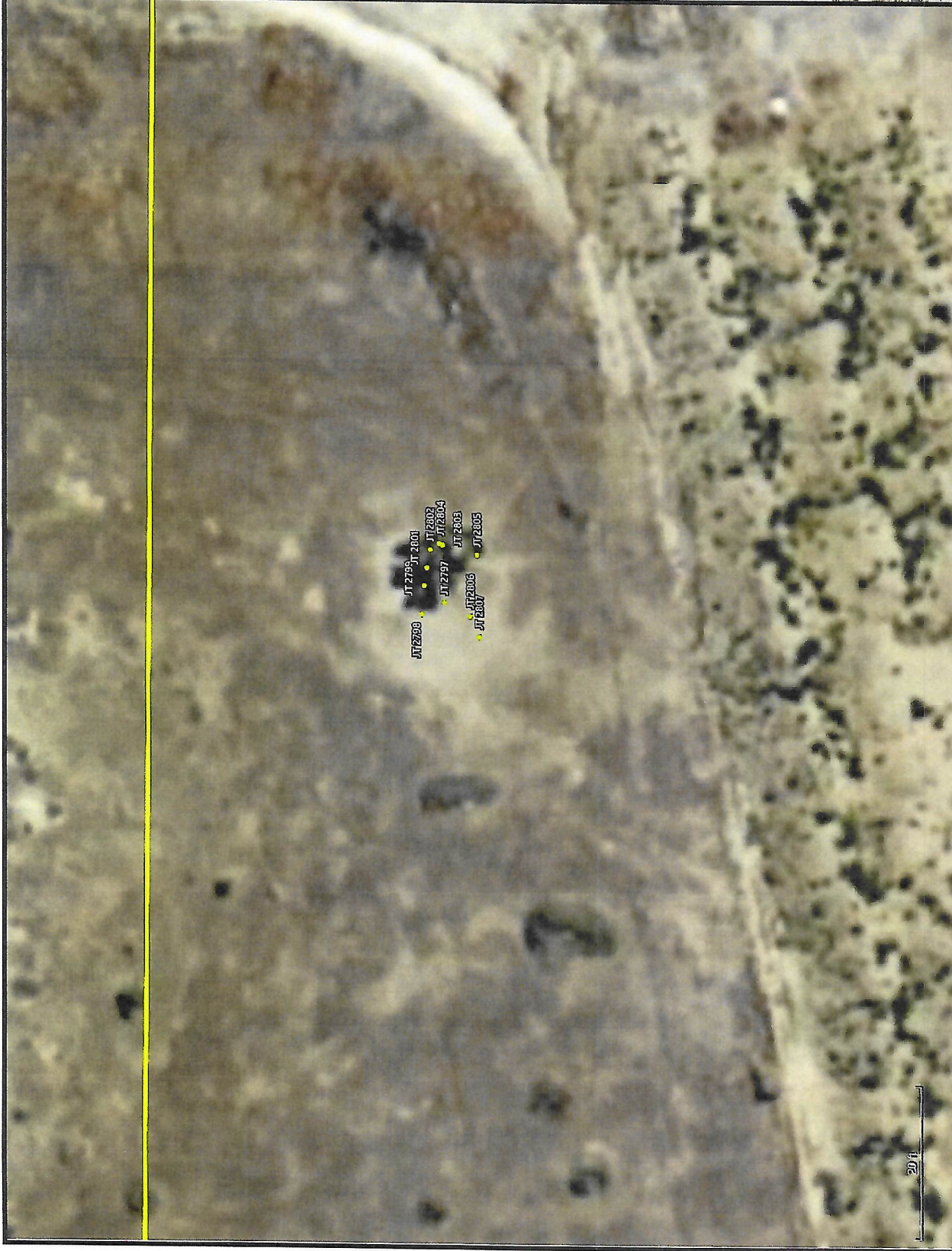
Magnified Section in Blue*

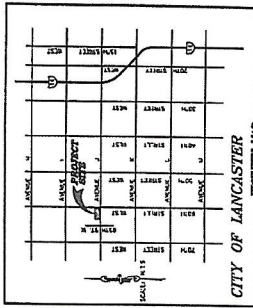


Source:	Uinta Software
Acreage:	9.35-Acres (Approximately)
Project #:	2021-264

NW of the Intersection of 60th Street W and W Avenue J in the City of Lancaster, CA

Figure 3A: Locations of On Site Western Joshua Tree (Magnified)





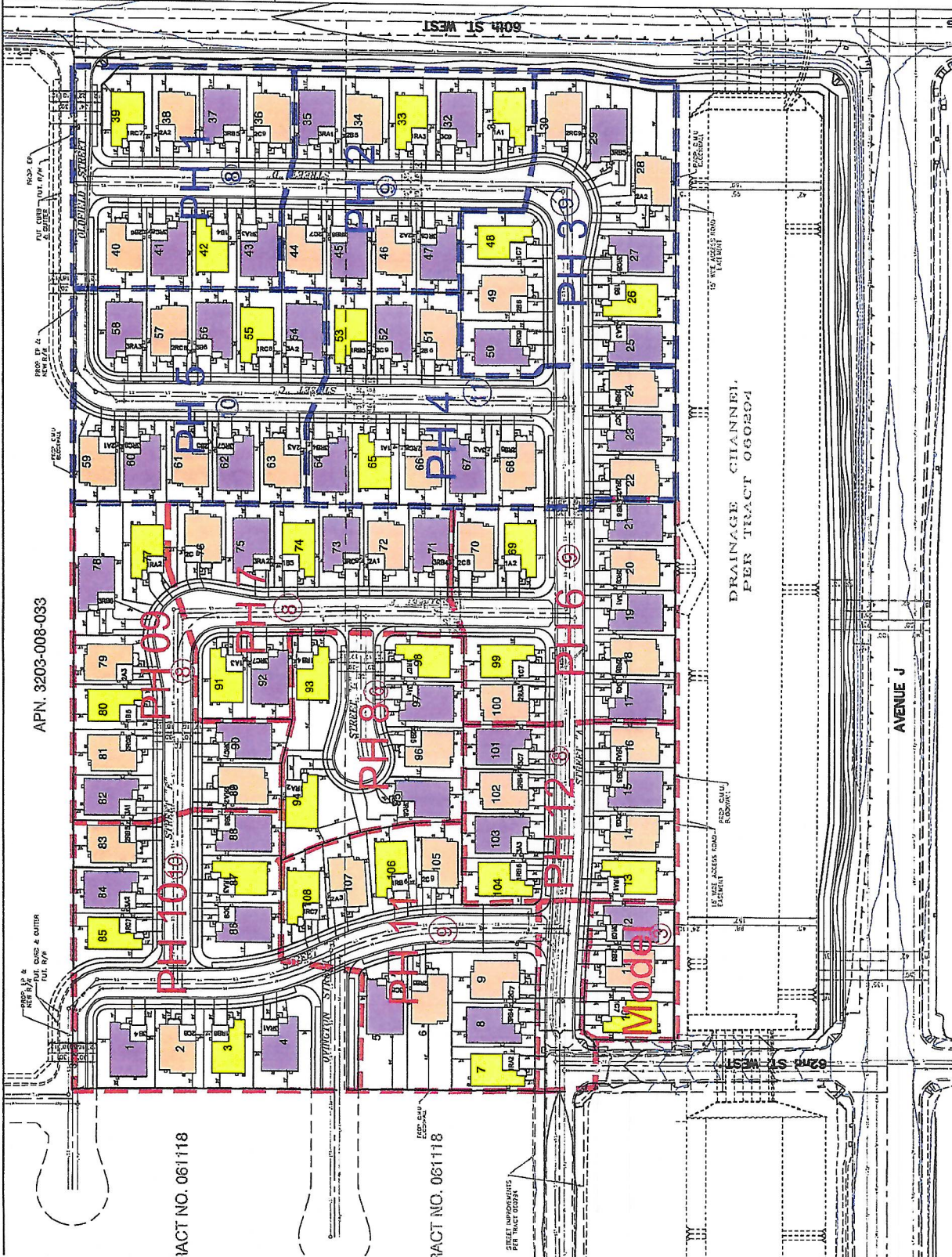
CITY OF LANCASTER
PROPERTY MAP

	P1	2047 SF	ONE STOREY NEW	2455 SF	ONE STOREY LILY P5
	P2	2254 SF	ONE STOREY	2455 SF	ONE STOREY
	P3			2455 SF	ONE STOREY

TRACK	PHASE	PLAN			TOTAL	TOTAL per TR
		P1	P2	P3		
71563-1	PH 1	2	3	3	8	47 UNITS
	PH 2	2	3	4	9	
	PH 3	2	3	4	9	
	PH 4	2	5	4	11	
	PH 5	1	4	5	10	
71563	PH 6	2	4	3	9	61 UNITS
	PH 7	2	4	4	8	
	PH 8	3	1	2	6	
	PH 9	2	3	3	8	
	PH 10	3	2	5	10	
	PH 11	3	4	2	9	
	PH 12	2	3	3	8	
	Model	1	1	1	3	
	TOTAL	27	38	43	108	108 UNITS
	%	25%	35%	40%	100%	

SCALE: NTS
DRAWING NO. 060204
SHEET NO. 1 of 1
11/01/2021 Rev.

PROJECT NAME:
PACIFIC AGAVE
TIM 71563
CITY OF LANCASTER
PREPLOT



APN. 3203-008-033

TRACT NO. 061118

TRACT NO. 061118

DRAINAGE CHANNEL
PER TRACT 060204

AVENUE J

Legend:
 = 61 Units
 = 47 Units
 Total = 108 Units

DEVELOPER:
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Address: 1000 Dove Street, Suite 300
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